Student Research Day Book of Abstracts and Artist Statements 2023

Abstracts and Artist Statements Guide

Listed by Department and Student Last Name, Alphabetically

Allied Health and Human Performance

Student(s)	Title	Format
Robin Ma	Content Reinforcement of Cell and Membrane Transport between Physical Education and Arts and Science Students	Poster Presentation
Noah Martin	Content Reinforcement of Cell Membrane and Transport Improves Long-term Knowledge Retention in Physical Education Students	Poster Presentation
Spencer Pon	Massage Therapy for Ankle Mobility and Spasticity in an Adult with Cerebral Palsy: A Case Report	Poster Presentation

Anthropology, Economics, and Political Science

Student(s)	Title	Format
Barry Atkin	The Historical Relationship Between Parliamentarians and Public Servants in Canada	Oral Presentation
Alexa Lauer	Lost in the Archive Sea: Why are Fur Trade Posts Difficult to Locate?	Oral Presentation
Alexa Lauer	The Patriarchal Stain On Women's Health: Medicalization of Depression	Oral Presentation
Isaac MacPherson	The Impacts of Canada's Carbon Pricing System on Intergovernmental Relations	Oral Presentation
Alexandrina Mironas	Battle Grounds: The Female Body as a Site of War	Oral Presentation
Marium Sheikh	Subsistence Practices and Food Insecurity in the Arctic Circle - A Focus on the Inuit and Sami Community	Poster Presentation
Emma Steele	Surface Changes in Intentionally Burned Bones	Oral Presentation

Design

Student(s)	Title	Format
Racquel Affleck	Witch Mother Remedy Kit	Project Display
Suzuanne Burwash	Album Cover |Typography 2	Project Display
Barbie Cayanan	Film-to-Book Design	Project Display
Sabine Hohne, Dana Valencia, & Nawaal Basha	Reimagining ETS Bus Stops	Project Display
Sydney Hua & Susanna Woudstra	PREY: Aesop's Fables Selected & Visually Told Anew	Project Display
Sydney Hua	Plastic Pollution Campaign Posters: The Art and Language of Persuasion	Project Display
Daenya Hussein	Horoscope Wheel for the Book of the Year 2022/23 - Everyone Knows Your Mother is a Witch By Rivka Galchen	Project Display
Daenya Hussein	Light photography concept for the album design of Pipe Dreams by Jim Walker and The MacEwan Generations Big Band	Project Display

Kim Huynh	The Book Design of 'A Blow to the Head,' a Poetic Memoir	Project Display
Kim Huynh	Designing an Informative Mental Health Visual Novel	Oral Presentation
Benjamin Kraemer & Danielle McDow-York	Designing for the Future: A Window into Augmented Reality	Poster Presentation
Benjamin Kraemer, Ekaterina Vasilyeva, & Marco Tse	Designing User Experience in Crossover Zones; Where ETS intersects with the world; A Case Study	Poster Presentation
Long Ly	Digital Exploration of Human Anatomy and Fashion	Project Display
Jennifer Onwudinjo	A Story told through Recipes	Project Display
Jennifer Onwudinjo	Competition Submission for the 'Pipe Dreams' Album	Project Display
Randi Sempala, Molly Boyd, & Diana Haymour	Arc Card Campaign: ETS	Oral Presentation
Liv Smreciu	DUETS: Transposing the Auditory into the Visual	Project Display
Kaitlyn Tupper	The Mabinogion: The First Branch, designed and edited by Kaitlyn Tupper	Project Display
Ekaterina Vasilyeva & Braden Bierkos	Digital Interaction in a Shared Public Setting: An Exploration of West Edmonton Mall Map User Experience	Project Display & Oral Presentation
Susanna Woudstra	Kepler's Blooms: 'erbs of the earth	Project Display

Biological Sciences

Student(s)	Title	Format
Benjamin Bekkema	Science's Need For Philosophy	Oral Presentation
Cora Kaplan	Conservation Optimism in MacEwan University Undergraduate Students	Oral Presentation
Amanda Kryjak	Incorporating a single-stranded split DNAzyme design concept for use in aptasensors	Oral Presentation
Loreena Nieuwenhout	Response of Migratory Bird Frequencies to Temperature in Central Alberta	Poster Presentation
Caleb Odegard	Identification of Potential Paralysis Proteins in the Tick *Dermacentor andersoni*	Oral Presentation
Mannraj Pataria	Utilization of multilocus DNA barcoding in identifying unknown soft coral species of Anthelia (Octocorallia)	Oral Presentation
Brady Ryan	Cloning and Purification of a Glycerol Specific Alditol Oxidase for Biosensor Construction	Oral Presentation
Inder Singh	Optimization of Agar-Overlay Bioautography in Screening Antimicrobial Phytochemicals	Oral Presentation
Joe Waller	BMP3 Treatment Effects on Differentiated Chondrogenic ATDC5 Cells Signaling Pathways and Protein Expression	Oral Presentation

Child and Youth Care

Student(s)	Title	Format
Kiana Krueger	What does diversity do? Exploring parent-child play engagement with loose parts to bridge the learning gap between home and early learning environments	Oral Presentation
Courtney Smith	Exploring the role of language development in young children's unstructured play narratives	Oral Presentation

Keirsten Taylor	Children's involvement in Science, Technology, Engineering, and Mathematics (STEM) with loose parts	Oral Presentation

Communication

Student(s)	Title	Format
Remi Baker	Queer Characters Impact on Video Games: Comparing Warzone and Apex Legends	Oral Presentation
Heather Hutchinson & Elyse Colville	No One is an Island: The Misdirection of the Individual Climate Impact Narrative	Oral Presentation

Computer Science

Student(s)	Title	Format
Mitchell Driedger, Dongseok Cho, & Sera Han	Analyzing Factors Impacting COVID-19 Vaccination Rates	Oral Presentation
Michael Mannerow	Exploring Music Generation with Magenta	Poster Presentation
John Penaflor	Multicommodity Flow Reliability for Energy Harvesting Wireless Sensor Networks	Oral Presentation
Iain Smith & Dominic Dobosz	Comparing Clustering Results of Specialized Functional Models and Standard Models through Comparative Analysis of Traffic Speed Differential Data	Oral Presentation

English

Student(s)	Title	Format
Johnathan Bobinac	Modern Rhetoric Through a Classic Lens: An Exploration of Andrew Tate, Cancel Culture, and the Art of the Clip	Oral Presentation
Symon Buchanan	Affective Adaptations: Stephen King from the page to the Screen	Oral Presentation
Justyn Chodzicki	Identity and the Innovation of the Fair Unknown in Malory's Le Morte d'Arthur	Oral Presentation
Emilie Glazier Morse	"The Lurking Place of Nameless Terrors": Queer Alterity within British Normative Subjects in Richard Marsh's *The Beetle*	Oral Presentation
Kairo Martens	Jeweled Skulls: Fantasy Meets Horror in Fritz Leiber's *Swords Against Death*	Oral Presentation
Madison Pilling	Shake Down the Sky: Feminist Utopias vs. Lesbian Separatist Fiction in 1970s America	Oral Presentation

Human Services and Early Learning

Student(s)	Title	Format
Chloe Cattral	Examining parent-child play types, duration, and engagement with loose parts: How parental income, educational attainment, and children's age and cognitive functioning shape loose parts play	Poster Presentation
Tori Vail & Kiera Leblanc	Children's Rights: Focusing on How Consent and Inclusion Affect Participation	Poster Presentation

Brooke Wanchulak	"I'm Exhausted!" The effects of fatigue on deaf students	Oral Presentation

Humanities

Student(s)	Title	Format
Amelia Altmiks	Somewhere Over the Rainbow: Imagination's Role in Climate Justice via a Deweyan Analysis	Oral Presentation
Dustin Berndt-Setter	Challenging the Spartan 'Mirage' by Redefining the Greek Standard for Burials	Poster Presentation
Amanda Fuenmayor, Ashley Bernal, Mira McElhinney & Eric Flores Moreno	Round table with Empeños/Trials artists	Performance & Oral Presentation
Austin Herbert	The Heroic Love of Socrates	Oral Presentation
Joseph La Torre	Descartes & Medicine: Healing Teleology	Poster Presentation
Justin Norton	Utilitarianism in Sparta	Poster Presentation
Dominique Ross	Worship of Artemis in Ancient Sparta	Poster Presentation

International Business, Marketing, Strategy, and Law

Student(s)	Title	Format
Abhijeet Singh	National Securities Regulator	Oral Presentation
Ivy Wu & Connor Smith	Heating Up the Market: A case analysis on Kaiso Hot Sauce	Poster Presentation

Mathematics and Statistics

Student(s)	Title	Format
Sandy Jr Julian	Measuring the Effect of COVID on Alberta Oil Prices	Oral Presentation
Oscar Martinez Luna	Diagonalization of continuous families of matrices over an interval	Oral Presentation
Aisling Pouti	Generating Functions Related to the Fibonacci Substitution	Oral Presentation
Joyce Wu	Time Series Analysis of USD/CAD Exchange Rate	Oral Presentation

Music

Student(s)	Title	Format
Charise Eryka Delson	Quaesitum Emporium - No. 1: A Music Composition and Orchestration Project	Oral Presentation

Nursing

Student(s)	Title	Format
Carmen Diaz	Impact of Content Reinforcement of Body Tissues on Knowledge Retention in Nursing Students	Poster Presentation
Karissa Goulding, Samantha Walker, & Helena Popiel	BMI and Labour: How does obesity in pregnancy affect intrapartum outcomes for pregnant patients?	Poster Presentation
Kaitlyn Hoyer	Ethical Dilemmas and Considerations for Nurses During the MAID Process: A Literature Review	Poster Presentation

Ashley Kohler & Nicole Pylypchuk	Adverse Childhood Experiences (ACEs) as a Predictor of Homelessness in Mothers: A Narrative Review	Poster Presentation
Lena Nguyen	Art Therapy as Self Care	Poster Presentation
Richa Patel	Physiological Knowledge Retention in Second-Year Bachelor of Science & Psychiatric Nursing Students	Poster Presentation
Prabal Sharma	Third-Year Nursing Student's Physiological Knowledge Retention	Poster Presentation
Inder Singh	The influence of social media on the alcohol consumption of mothers of children less than or equal to 18 years of age: a scoping review of the literature	Oral Presentation
Ashley Stoltz	Community Gardens and Urban Agriculture: Healthy Environment, Healthy Citizens	Poster Presentation
Kiara Ukrainetz	The Impact of Content Reinforcement on Anatomical Knowledge Retention of Cardiovascular and Lymphatic Systems in Nursing Students	Poster Presentation
Christine Wincentaylo	Youth-engaged research in a pediatric mental health care trial	Poster Presentation
Amber Zyla	Impact of Content Reinforcement of Muscular and Skeletal Systems on Knowledge Retention in Nursing Students	Poster Presentation

Organizational Behaviour, Human Resources Management, and Management

Student(s)	Title	Format
Ini Amao	Investigating Black Women's Work Experiences in Canada: An Undergraduate Student's Perspective	Poster Presentation
Joshua Bell	Preventative Health Methodology in the Canadian Market	Oral Presentation
Patrick Jean	Can Geothermal Heat Projects and Systems help stimulate economic development in rural and small-town Alberta?	Oral Presentation

Physical Sciences

Student(s)	Title	Format
Alyceea Anderson	Manufacturing Antimicrobial Silver-Coated Wound Dressings: Chemistry Practicum with Exciton Technologies	Poster Presentation
Abby Beka	Characterization of Microplastics in industrial, highway, residential, and natural storm water ponds in Edmonton, Alberta, Canada	Poster Presentation
Benjamin Bekkema	Synthesis of Diphenyl Hydrogels for Pharmaceutical Applications: Chemistry Practicum with CNRC-NRC	Poster Presentation
Sara Benny & Dawson Laycock	MacEwanCYU: Exploring STEM Outreach Opportunities within Community Engaged Research	Poster Presentation
Evan Bourassa	OER: Providing Students with an Interactive, Engaging Learning Experience	Poster Presentation
Danielle Dias & Matthew Schiiler	Development of Dopamine-Coated Quartz Tuning Fork: Chemistry Practicum with Fourien Inc.	Poster Presentation
Brooklyn Falebrenza	Screening of Invasive Plant Extracts for the Inhibition of β-Glucosidase Activity	Oral Presentation

Dylan Fillier	Synthesis and evaluation of molecular hydrogels: Chemistry Practicum with the Nanotechnology research center	Poster Presentation
Haylee Hatton	Investigating Microplastic Ingestion in Ringed Seals (Pusa hispida) from the Eastern Canadian Arctic	Oral Presentation
Vincent Johnston	Intestinal alkaline phosphatase bioautographic analysis of plant extracts	Oral Presentation
Brooke Labine & Anne Munezero	Microplastic Ingestion in Arctic Zooplankton Species	Poster Presentation
Avery Lund	Redefining detection limits of the baker-Nunn telescope	Poster Presentation
Zafar Mamadaliev	Synthesis and Evaluation of Switchable Hydrophilicity Solvents	Poster Presentation
Brynne Radford	Are there microplastics in the stomachs of ringed seals (Pusa hispida) from Arviat, Nunavut?	Poster Presentation
Cedrick Ramos	Oil spill detection using a handheld fluorometer: Chemistry Practicum with CanmetENERGY	Poster Presentation
Cedrick Ramos	Laboratory Design: Multi-method Analysis of Metal Adsorption to Diatomite	Oral Presentation
Jose Ignacio Ramos de la Torre	Development of New Ionic Exchange Methods: Chemistry Practicum with Sterling Chemicals Ltd	Poster Presentation
Jaden Schultz	A Brief View of Mine Tailings Leaching and Geological Hydrogen Storage: A Chemistry Internship with CanmetENERGY	Poster Presentation
Meisha Scott	Investigating The Fate and Biodegradation of Resin and Asphaltenes in water	Poster Presentation
Tasmina Sheikh	Development of Lactate Biosensor: Chemistry Practicum with NRC company	Poster Presentation
Helen Tiet	The Accumulation of Microplastics in Craig Bay, British Columbia	Oral Presentation
Vy Tran	The link between supernovae and star births	Oral Presentation
Robyn Woodrow	Observational Air Quality Monitoring in the City of Edmonton: Investigating the Patterns and Presence of Emissions in CO2 Domes	Poster Presentation
Robyn Woodrow	Lignin depolymerization and methylation in batch	Poster Presentation

Psychology

Student(s)	Title	Format
Monisola Badiru	An Acceptance and Commitment Therapy Approach to Social and Emotional Learning	Poster Presentation
Monisola Badiru	Language Effects on Emotion Recognition in Hearing Children and Deaf Children with Cochlear Implants	Poster Presentation
Holly Bosch	Mindfulness as a Moderating Variable of Selfishness and Materialism	Oral Presentation
Erica Bown	A Comparison of Student Achievement Across Pedagogical Modalities	Poster Presentation
Erica Bown	Does a Growth Mindset Intervention Reduce Perfectionism and Procrastination?	Poster Presentation
Vanessa Brickwood	Do Cognitive Load and Processing Mode Influence Stereotypical Thinking About Consent?	Oral Presentation
Jenn Crebas	Do narcissists act differently with their romantic partner in public vs. private settings?	Poster Presentation

Dj Crossland	Childhood Pet Ownership and The Strength of Sibling Relationships	Poster Presentation
Dj Crossland	Wake up Sheeple!: Personality traits and belief in pseudoscience	Poster Presentation
Emily Czobor	Examining how different sensory inputs impact motor learning	Poster Presentation
Maron Demecillo	I "Woof" You: How Pet Pictures Influence Online Dating Selection	Oral Presentation
Mady Gillett	A procrastination solution for students	Poster Presentation
Shelby Grahn	From Hurting to Helping?: Psychopathic Traits, Primes, and Costly Helping	Oral Presentation
Janet Guenter	The Myths and the Memories: Perceptions of Traumatic Memory and Victim Credibility	Poster Presentation
Matthew Harper	Hooked on a terpene: investigating the presence of withdrawal in zebrafish (Danio rerio) following cessation of repeated exposure to ß-caryophyllene	Poster Presentation
Oana Hossu	Does Online Biofeedback Increase the Use of Stress Coping Strategies in Undergraduate Students?	Poster Presentation
James Hudson	The cannabis terpene bisabolol increased locomotion but had no affect on anxiety-like behaviour in zebrafish	Poster Presentation
Andréa Johnson	Examining the anxiolytic potential of Cannabis terpenes: The differential effects of alpha-pinene enantiomers on zebrafish anxiety-like behaviour and locomotion	Poster Presentation
Andréa Johnson	The behavioural effects of beta-caryophyllene in zebrafish are mediated by CB2 receptor activity	Oral Presentation
Nickki Kamprath	Eyes bridge the gap: how eye gaze-induced arousal biases distance perception	Poster Presentation
Madison Karpiak, Dana Haugen, Dakota Wilkin, & Katerina Rubachuk	Recognizing Risk Factors for the Perpetration of Campus Sexual Violence	Poster Presentation
Madison Karpiak	Does perpetrator intoxication during a campus sexual assault influence perceptions of risk and sanction recommendations?	Oral Presentation
Noelle Kilbreath	What Does it Mean to be an Ally to the LGBTQ+ Community? Comparing Definitions of LGBTQ+ and non-LGBTQ+ Individuals	Poster Presentation
Jared Kostiuk	Combating Internalized Homophobia: Protective Factors and Their Effectiveness	Poster Presentation
Claire Kryska	How different magnitudes of visual shift affect motor learning in prism adaptation	Poster Presentation
Karanvir Kundan	Hiding and Searching Behaviours in a 2D environment	Poster Presentation
Brielle Lamash	Calculating Risk: Sexual Behaviour as a Consequence of Personality, mating orientation, and alcohol consumption	Poster Presentation
Samuel Larocque	Using Complex Video Games to Improve Executive Function	Poster Presentation
Katherine Luzanac	OCD Correlates and Photographs as a Checking OCD Coping Mechanism	Poster Presentation
Maria Luzardo Rubinstein	Singing the Stress Away: Karaoke As a Coping Tool	Poster Presentation
Shannon Majeau	Motivations in Political Conversations	Oral Presentation

Dezerae Martens	Comparing Public Perceptions of Narcissism and Anxiety	Oral Presentation
Abbigale Massam	A psychophysiological examination of the automatic arousal response caused by being watched	Poster Presentation
Jacey Mitchell	Book to the Basics: Systematically Teaching Children to Read Well	Oral Presentation
Logan Moon	Do Personality Traits, Ageist Beliefs, and Knowledge of Dementia Influence Canadian Undergraduates Stigmatizing Attitudes Towards People With Dementia?	Poster Presentation
Melissa Nielsen	Worth the Risk: Narcissism and Risky Health Behaviour	Oral Presentation
Tulsa Oddy	Language and Voice Effects on the Perception of Mixed Emotions in Children	Oral Presentation
Branden Otte	Individual Differences in Inhibitory Control: The Associations Between the "Automatic Pilot," Executive Function, and Executive Attention	Poster Presentation
Crystal Pavlis	Pluralistic Mating Strategies: Examining sexual orientation with CNM, jealousy, sex drive, and sociosexuality	Poster Presentation
Crystal Pavlis, Amy Petersen, Brandon Dare, Brandy Thiessen, Brielle Lamash, Jada Tomlinson, Jay McLeod, Karanvir Kundan, Madison Wesenberg, Michael Kramer, & Trina Miksic	Puzzling Perceptions: Attraction, sociosexuality, and rivalry evaluations among women	Poster Presentation
Ronak Rai	The Impact of Positive Animal Stimuli on Stress and Well-being	Poster Presentation
Adia Redekopp	The Visual Categorization of Handwritten Letters	Poster Presentation
Brayden Ritter	Social anxiety response to acute nerolidol exposure in Zebrafish	Oral Presentation
Brayden Ritter	A methodological exploration of drug dosage time in Zebrafish behavioural pharmacology research	Poster Presentation
Nick Robinson	The Unsolved Mysteries of Applied Behaviour Analysis	Poster Presentation
Natasha Robinson	Does This Look Like STALKING to You? Factors Associated with Identification of Stalking Behaviours	Poster Presentation
Chella Mae Robles	Profiles of Perpetrators of Intimate Partner Sexual Violence, Their Sentencing Outcomes, and Risks in Recidivism	Poster Presentation
Joel Roy	Using ACT to Increase Class Engagement in University Students	Poster Presentation
Kamille Sandberg	Does Feeling Heard Improve Emotional Responses to Worldview Conflict?	Oral Presentation
Japkaran Saroya	We're Queer and We've Always Been Here: The Impact of Learning About Queer History on Young Adults in Alberta	Oral Presentation
Kale Scatterty	The Aversive Effects of Infrasound on Zebrafish in an Open Field Test	Poster Presentation
Kale Scatterty	Evaluating the Effects of Infrasound Frequencies on Human Stress and Anxiety Behaviours	Poster Presentation

Kale Scatterty	Investigating the Anxiety-Increasing Potential of β-Carboline (FG-7142) in Zebrafish	Oral Presentation
Aly Shurvell	Sexpectations: Coercive Control Experiences in Sexual Minorities	Poster Presentation
Sophia Slade	Lateralization of facial emotion recognition in the human cerebellum: A transcranial direct current stimulation (tDCS Study)	Oral Presentation
Alycia Stewart	The Terpene (-)-α-pinene can Alter Locomotion in Zebrafish (Danio rerio)	Poster Presentation
Pamela Stuart	A Signature Squeak: Acoustic Features Related to Identity in American Pika	Oral Presentation
Kevin Styba-Nelson	Examining Anxiety Sensitivity, Metacognitions, and Anxiety Symptoms	Poster Presentation
Darby Tarrant	Stressed and Stuck: How Can We Motivate Students to Use Effective Coping Strategies?	Poster Presentation
Darby Tarrant	Falling Through the Cracks: The Gaps in our Healthcare System	Poster Presentation
Alex Tiller	He Said, She Said, They Said: Gender Identity, Displayed Emotion, and Perceptions of Sexual Assault	Oral Presentation
Christina A. Tomaras	Canadian Undergraduate Perspectives on Medical Assistance in Dying (MAiD) for Mental Illness: Does Psychiatric Illness Type and/or Age Influence Acceptance of MAiD?	Oral Presentation
Arshdeep Vaid	Discrimination and Picking up Political Cues	Poster Presentation
Ryan Verbitsky	Neuropharmalogical Effects of Acute Terpinolene Administration on Zebrafish Behaviour	Poster Presentation
Celina Vipond & Haylee Hatton	Finding comfort in a world of uncertainty: Exploring Ecological grief and anxiety through support circles	Oral Presentation
Alana Walker	Increasing Independent Self-Care in Autistic Children through Telehealth Parent Coaching	Oral Presentation
Emily Woods	Parasocial Relationships and Materialism in the Media: The Moderating Role of Motivation	Poster Presentation
Man Wai (Krystal) Yik	Music Entertainment Effects on Attention in Children with Autism Spectrum Disorders	Poster Presentation

Social Work

Student(s)	Title	Format
Courtney Drayton & Carmen Pedersen	Falling Through the Cracks: Case Management of Clients Accessing Services in A Settlement Agency, Edmonton, Alberta	Poster Presentation
Nafisa Moallim & Precious Osadjere	Afrocentric Knowledge Within the Context of Social Work Education and Practice	Poster Presentation
Eva Ociepka-Mengel & Samantha Heuft	From Global Practices to Global Mindedness: Utilizing Reflexivity and Cultural Relevance Towards a Global Indigenization of International Social Work	Poster Presentation
Celina Vipond & Cheyenne Greyeyes	Three years of individual and community-based research in Indigenous worldview and housing	Oral Presentation
Cheryl Williams & Vicki Shaughnessy	BIPOC Community Contributions in Volunteerism and Civic Engagement	Poster Presentation

Sociology

Student(s)	Title	Format
Abe Aboughauche, Anna Kuzmyk, Anastasiya Levytska, Bohdan Popovych, Cailin Senger, Yulia Tkachuk, & Yelyzaveta Viktoryenkova	Workplace Inequality	Oral Presentation
Alex Alphonse, Anastasiia Kunychak, Preeya Lall, Oleksandra Onystiuk, Viktoriia Polshyna, Solomiya Smolynets, & Anastasiya Tovstanovska	Displacement of Ukraine	Oral Presentation
Yuliana Boychuk, Rory Dumelier, Yevheniya Fau, Khrystyna Mysiv, Anastasiya Sereda, Alison Toews, & Courage White	The Effect of Russian Colonialism on Ukrainian cultural identity	Oral Presentation
Danylo Chavaha, Mackenzie Darby, Maksym Kohutiak, Lorena Rafal, Oleksandra Shelikhevych, Valeriya Zadorozhna, & Yaryna Zaviyska	Gendered Representations of Crime in the Media	Oral Presentation
Riya Dhunna	Effects on emergency department wait times due to Covid-19	Poster Presentation
Alexandra Gagnon	The Normalization of Weight-Cutting in Combat Sports: A Sociological Analysis	Oral Presentation
Aaron Glenn	Representation of Multiculturalism Within the 2021 Federal Election	Oral Presentation
Shahad Hassan	Medical Racism in Canada: A Literature Review	Oral Presentation
Samantha Hermary	A Woman's Role in a Mans World: Understanding Gender in Corrections	Oral Presentation
Ashu Kito, Kateryna Kuzmuk, Sofiia Maksymovych, Yaryna Predzymyrska, Ethan Simmons, & Kirpal Thind	Investigation into the Implementation of Rehabilitation in the Penal System	Oral Presentation
Natalie Mamo	Inefficacies of the ICC: A historical and socio-legal analysis	Oral Presentation
Samantha Mullin, Camila Balboa, Neha Sharma, & Natalie Mamo	Citywide Youth ID Access: Youth Empowerment and Support Services	Oral Presentation
Sarah Ostapovich	Perceptions of Dairy Farms on the Environment: A Content Analysis of TikTok Comments	Poster Presentation

Ronak Rai	Towards Indigenous Food Sovereignty	Oral Presentation
Randi Sempala, Yaseen El-Hakim, & Emma Parker	City Wide ID Project : C5	Oral Presentation
Alyssa Stratman	Sharenting and Exploitation: A Content Analysis of Public Reactions to the Wren Eleanor Situation	Poster Presentation
Kasandra Vallee	Student Experience and Reactions to Online Learning on Facebook: A Content Analysis of Remote Learning Issues during COVID-19	Poster Presentation
Naomi Wall	Masked Reactions: Public Reactions to a Masking Update by the Premier of Alberta	Poster Presentation

Studio Arts

Student(s)	Title	Format
Elena Mercuri	naspasinahikew	Oral Presentation
Maya Pereira	Research of Baroque and Renaissance painting for the purpose of creating a painting of contemporary student life	Creative Installation & Oral Presentation
Alethea Recla	Chismosa: The gossiper and the act of self-portraiture	Creative Installation & Oral Presentation

Abstracts and Artist Statements

Allied Health and Human Performance

Content Reinforcement of Cell and Membrane Transport between Physical Education and Arts and Science Students

By Robin Ma

The present study evaluates content reinforcement of cell membrane transport over eight weeks for Physical Education and Arts and Science physiology students. The highest retention for physical education students was in weeks 1 and 3, whereas for the Arts and Science students, it was the highest in weeks 2 and 3. Knowledge was comparatively higher for Physical Education students than for the Arts and Science students. Therefore, relatively more robust interventional strategies need to be implemented for Arts and Science students to improve knowledge retention.

Faculty Mentor: Dr. Paul Chahal

Content Reinforcement of Cell Membrane and Transport Improves Long-term Knowledge Retention in Physical Education Students

By Noah Martin

Human physiology is considered a foundational course in the Physical Education program. The objective of the present study was to evaluate content retention of cell and plasma membrane transport for first-year Physical Education University Transfer physiology students over eight weeks. Results show that the knowledge retention was observed to be week-specific, highest in weeks one and three and lower for other weeks. Therefore, content reinforcement can be used as an interventional strategy to improve long-term knowledge retention in Physical Education University Transfer students.

Faculty Mentors: Dr. Paul Chahal & Dr. Raj Narnaware

Massage Therapy for Ankle Mobility and Spasticity in an Adult with Cerebral Palsy: A Case Report

By Spencer Pon

Background: Cerebral palsy (CP) refers to a group of permanent neurologic disorders associated with injury to the brain during its development. The most common type of CP is spastic CP. Individuals with spastic CP commonly present with increased deep tendon reflexes, tremors, muscular hypertonicity, and weakness. Treatment aims to manage primary and secondary symptoms of CP and improve quality of life.

Objective: The objective of this study was to determine the effectiveness of massage therapy in increasing ankle mobility and decreasing spasticity in a patient with spastic CP.

Method: A student massage therapist at MacEwan University administered five massage therapy treatments over six weeks on a 55-year-old female with spastic diplegic CP. The treatment goals were to increase ankle mobility and decrease spasticity in the knee extensors that negatively impacted the patient's ability to don socks and shoes. Progress was monitored using goniometry pre- and post-treatments to assess ankle mobility, and the Modified Ashworth Scale (MAS) to assess spasticity. The MAS was administered before the third, fourth, fifth, and final sessions. Techniques included static contact, effleurage, broad compressions, petrissage, muscle stripping, Golgi tendon organ release, muscle approximation, joint mobilizations, and passive range of motion.

Results: Ankle mobility increased. Spasticity in the knee extensors decreased, but the change was not clinically significant.

Conclusion: The results of this study suggest that massage therapy may improve ankle mobility and decrease spasticity in a patient with spastic CP.

Faculty Mentors: Pamela Cushing & Jeff Moggach

Anthropology, Economics, and Political Science

The Historical Relationship Between Parliamentarians and Public Servants in Canada

By Barry Atkin

The bargain between public servants and politicians - where public servants provide policy advice and implementation of government priorities in exchange for anonymity and job security - is breaking. Public servants are more frequently being named publicly by politicians when issues arise, and are facing increased pressure from politicians to defend their priorities rather than simply implement them. But how often have the threats to public servants' anonymity and non-partisanship led to outright politicization, where they become the focus of partisan political debates, and has this changed over time?

We look at historical records of debates in parliament to determine how often politicians discuss public servants and what issues these debates focused on. This was done by examining Hansard transcripts. References to public servants by elected officials in Parliament were counted to determine if there was any shift in frequency of debate of public servants in Parliament over time. Topics discussed in years with the highest frequency of references to public servants, 1918 and 1992, were counted to see how the debate around public servants had shifted. We hypothesized that discussion of public servants by politicians would increase over time, that government members would discuss public servants more, and that servants would be discussed more frequently by politicians with an ideological proclivity for smaller government. Results indicated no increase over time in discussion of public servants, no apparent variance in discussion of public servants according to ideology, and that opposition members consistently bring up public servants in parliament more frequently.

Faculty Mentor: Dr. Brendan Boyd

Lost in the Archive Sea: Why are Fur Trade Posts Difficult to Locate?

By Alexa Lauer

A common problem faced in studies of the North American Fur trade is pinpointing the locations of the trading posts. In this presentation, I will summarize some of the factors that contribute to this problem, including instabilities in the operation of posts, competition between companies for traffic, the impermanence of architecture, disasters, and imprecisions and gaps in the documentary record. My experience as a research assistant searching for information on the location of Fort Fraser in British Columbia, which underwent cycles of closure and shifts in its position during its history from 1806 to 1915, will be used as an example. The presentation will explore the journey of searching through data with vague descriptions, sketchy maps, and poorly reproduced photos in order to gather information on the site's location. Ultimately, the research presented will show the listener what can be uncovered while lost in the archive sea.

Faculty Mentor: Dr. Paul Prince

The Patriarchal Stain On Women's Health: Medicalization of Depression

By Alexa Lauer

An increasing trend in western culture is the use of antidepressants to regulate emotions and the bodily response to experiences of distress brought on by social unrest. The application of pharmaceutical treatments to states of unrest is reflected through the medicalization of depression which appears most prominently among women. In this paper, I argue that the medicalization of depression among women results from societal pressures, gender discrimination, and sexual violence on the female body. Through a feminist lens, I discuss how patriarchal and capitalist institutions of power create social ills that become inscribed on women's bodies as "female problems" or "hysteria." Rooted in the male gaze, these institutions develop biases and stereotypes against women that ultimately financially benefit the pharmaceutical industry. By emphasizing the theoretical framework of medical anthropologists Margaret Lock and Nancy Schepher-Hughes, I reveal how patriarchal and capitalist structures exert control over the female body entering public spaces and transform the social experiences of discrimination, objectification, and sexual violence into individual mental illness to be cured through antidepressants.

Faculty Mentor: Dr. Leslie Dawson

The Impacts of Canada's Carbon Pricing System on Intergovernmental Relations

By Isaac MacPherson

No abstract available.

Faculty Mentor: Dr. John Soroski

Battle Grounds: The Female Body as a Site of War

By Alexandrina Mironas

On February 24, 2022, Russia escalated the ongoing Russo-Ukrainian war to a full-blown invasion of Ukraine. As a war tactic, Putin endorses gender-based violence by employing rape rhetoric to frame Ukraine as a powerless woman, and to demand the submissiveness that he believes is owed to him. To elucidate the socio-political forces behind gender-based violence as a war tactic, I reveal the relationship between traditional gender roles in Eastern Europe and how they establish the female body as the property of a nation. Through the examination of relevant literature, I draw a theoretical perspective that identifies the female body as nationalized, objectified as property, and inscribed as a site of violence. Applying this lens to the invasion of Ukraine, I identify the social and political forces that allow Russian soldiers to objectify the Ukrainian female body as a battle ground on which national wars are fought. Further, I discuss how gender-based violence, while apparent during peacetime, becomes amplified during conflict, and how this violence physically inscribes the Ukrainian female body as “Other.” To conclude, I discuss how the lived experiences of Ukrainian women become embodied through fear, yet silenced through the ongoing nature of this war, and I pose several questions that aim at creating space for women to share their painful experiences as an act of liberation.

Faculty Mentor: Dr. Leslie Dawson

Subsistence Practices and Food Insecurity in the Arctic Circle - A Focus on the Inuit and Sami Community

By Marium Sheikh

During this course, I was deeply touched by how food was so spiritual for arctic communities and how their lives are shaped around their subsistence practices. I often found myself comparing my lifestyle to the one Sami and Inuit. I noticed vast differences in our lifestyles. I quickly realized their conditions meant they needed to follow their ancestors’ way of life and not be affected by globalization or modernization. However, things have changed over the years, and Arctic communities are slowly losing their cultural roots due to socio-political intervention. Hence, the topic of subsistence in the arctic circle began to pique my interest. Moreover, when Inuits and Sami have few similar experiences and lifestyles; hence, I compared both communities and highlighted their struggles. I am most passionate about discussing the issue of food security in the Inuit community because it deprives them of their rights, and more solutions must be discussed to help Arctic communities. Moreover, Sami and Inuit are communities dispersed in different land areas, yet they have been practicing the same way for centuries. Canada and Scandinavia both have been actively involved in trying to reverse the effects of colonization and help establish a better support system for indigenous communities. Both communities can be self-sufficient if there is no socio-political interference caused by colonization which has altered the structure of various practices critical to the stability and survival of their community.

Faculty Mentor: Dr. Jenanne Ferguson

Surface Changes in Intentionally Burned Bones

By Emma Steele

Faunal materials recovered from archaeological contexts are often found to have experienced some amount of burning, raising questions about the causes. Various studies have identified the surface changes, or taphonomic signatures, of bone at different stages of burning, with the greatest intensity of burning typically being attributed to human intentionality. This project reviews the utility of such attributes to archaeology and applies them to faunal specimens from a pithouse in British Columbia, which was itself burned. Colour and texture are the main criteria used to classify the specimens to burning stages. Most of the remains at the site were found to be burned to the greatest intensity (calcined), suggesting intentional burning under controlled conditions in a hearth.

Faculty Mentor: Dr. Paul Prince

Design

Witch Mother Remedy Kit

By Racquel Affleck

Everyone Knows Your Mother is A Witch is about a witchcraft trial with 71-year-old Katharina Kepler. This story is told through a modern point of view about one's identity being questioned. Katarina is a widow known for being in other's business, the success of her children, her herbal remedies, and for being questioned about witchcraft. The product is Witch Mother, a remedy kit representing Katharina helping those in need. Witch Mother is induced with natural ingredients. A story is told about an animal band in danger. These animals are represented by organic oils, named according to the particular struggle. These oils are used as a remedy and add a unique taste to the tea.

In this product design, each color and design have meaning. The tea kit is the color tan to represent periods of growth. Tan is a color representing neutrality, support and stability, which is the support of one's health. Turkish blue serves as a calming and nourishing feeling; red-orange is a vibrant color supporting the energy of the oil; and purple is an expression of evolution, the daily support it can bring to one’s body. Belda is a typeface that uses elegant strokes. The use of thick and thin stroke marks shows a hormonal contrast. The typeface A Day Without Sun is modern-time vintage hand-lettering, adding personality to the homemade remedies. Lastly, the octagon pattern throughout honors a journey; there are multiple sides and experiences. "That is what life is, a bunch of thorns and a berry."

Faculty Mentor: Constanza Pacher

Album Cover |Typography 2

By Suzuanne Burwash

The design concept for this album cover is centred around a life fully lived. Lush, rich, vibrant, and full of rhythm and movement. As a legacy album for Jim Walker, he is represented prominently on the cover. He is illustrated with a line drawing - which pares down to the essence what is being conveyed; flow and grace, running through the coloured shapes and background.

The colour and shapes represent the big band, a metaphor for the people and experiences that make up a full life. The colour and shapes are saturated and everywhere on the album, as are people and experiences in our lives.

Orange evokes energy, happiness and positivity. Blue is associated with freedom and imagination. It is also known for insight and realization. In contrasting these complementary colors, a synergy is created that mimics the synergy of putting together the sounds of big band and the flute.

The title font is BD Colonius, a sans serif type, that is round, elegant and full. It is warm and inviting in is curved forms, but solid and structured, much like a flute.

To have a dream is to aspire and strive. To live fully and brightly knowing there is a future in which the dream can come true. Pipe dreams in this instance, references the flute and all the dreams that have come from the sound and music it has made, not just for Jim, but for all who have been the colour and the shape in his life.

Faculty Mentor: Constanza Pacher

Film-to-Book Design

By Barbie Cayanan

Dead Poets Society is a movie directed by Peter Weir, written by Tom Schulman and a novel adaptation by N.H Kleinbaum. DPS follows the lives of the students of Welton Academy, balancing stressful classes and extracurriculars for a successful future. The rare opportunity of discovering their passions and identities arrives; a new English teacher has been hired and changed their teenage lives forever. The book's cover is reminiscent of the poetry book (Five Centuries of Verse) that the students read in their DPS meetings, from the textured font, the golden wreath and the wear and tear that's complimented with references, quotes, key items and visuals on the inside. Each chapter's beginning, midway or end has important details, evidence of teenagers messing with the book or overall time wearing down the quality after every use. DPS was set in 1959, and the novel uses serif typefaces (Miller Text), type with texture (the title and typewriter notes) and handwritten poems, quotes and doodles to put the reader in the mindset of a teenager in an old boarding school. All dark academia elements, visuals of wear and tear on the cover and each page, handwritten details, limited colour scheme and textured type create a cohesive message that separates the novel from the film. The redesign proves the book did not lazily copy scene by scene and line by line. It provides a different experience and different perspective of the story.

Faculty Mentor: Constanza Pacher

Reimagining ETS Bus Stops

By Sabine Hohne, Dana Valencia, & Nawaal Basha

This research project, conducted in collaboration with Edmonton Transit Service (ETS), aims to improve the experience of Edmonton transit users to retain and increase ridership. We conducted extensive qualitative user research to understand the needs and wants of transit users during their commute. Our findings demonstrate that transit users desire comfortable, safe, and intuitive bus stops that incorporate live bus route information and advanced wayfinding. Our project aims to redesign existing bus stops and shelters' wayfinding information across the city to enhance the user experience and encourage more people in Edmonton to use public transit.

Faculty Mentor: Dr. Isabelle Sperano

PREY: Aesop's Fables Selected & Visually Told Anew

By Sydney Hua & Susanna Woudstra

Fables are common methods of teaching lessons and morals through metaphors and the personification of animals. The characters, often animals, work through challenges, evade predators, or cleverly achieve a goal. These animals portray and depend on classical traits such as the mischievous fox, the shy rabbit, the sneaky mouse, the clever bird. Such traits allow for wide exploration of visualization of these personalities and stories, through imagery but more importantly through typography. Aesop's Fables: PREY is a collection of select fables visually told anew by Macewan's Typography II class of 2022/23, with cover artwork by Sydney Hua and internal typography by Susanna Woudstra. The project aims to communicate the content of the fables visually through typography to enrich the experience of the reader before and as they read the text.

Faculty Mentor: Constanza Pacher

Plastic Pollution Campaign Posters: The Art and Language of Persuasion

By Sydney Hua

The world produces 300 million tons of plastic annually, which is equivalent to the weight of approximately half the human population. The rising problem with plastic is that most of it is not biodegradable and often manufactured as single-use items. Due to plastic's persistent nature, plastic pollution involves long-term ecological, toxicological and economic effects. To battle the reality of the alarming amount of plastic pollution, Proposed campaign posters were designed for Plastic Pollution Coalition to raise awareness and appeal to society to overcome the frequent use of plastics. Study centered around visual rhetoric and semiotics are applied to the ideation of posters; the art and language of persuasion are taken into account to effectively communicate and convince the audience in a visual medium.

Faculty Mentor: Wayne Willams

Horoscope Wheel for the Book of the Year 2022/23 - Everyone Knows Your Mother is a Witch By Rivka Galchen

By Daenya Hussein

The dark-humoured and satirical novel, Everyone Knows Your Mother is a Witch by Rivka Galchen is a historical fiction story of a German widow Katharina Kepler who is accused of being a witch. As a result, Katharina is taken to trial for her accused wrongdoings, and she is soon helped by her Imperial Mathematician son, Johannes Kepler. The inspiration to create a horoscope wheel came from the character of Johannes Kepler, an actual individual from the 17th century who was an imperial mathematician, astronomer, astrologer, natural philosopher, and writer of music. The concept was that Johannes created this wheel with horoscopes that foretold his mother's future. The horoscopes go back to the story and borrow the good and bad events that happened to Katharina Kepler. The primary colour of purple was inspired by the original cover for the book Everyone Knows Your Mother is a Witch, with hints of gold as accent colours and white and light purple to stay on a similar colour palette. The typeface Menuetto, created by the German typesetter Dieter Steffmann in 1994, is a modern twist on the old Gothic German type used for the primary type of the horoscope wheel. The horoscopes may only match Katharina Kepler, but it’s a fun idea and design to acquire someone’s interest in reading the novel Everyone Knows Your Mother is a Witch by Rivka Galchen.

Faculty Mentor: Constanza Pacher

Light photography concept for the album design of Pipe Dreams by Jim Walker and The MacEwan Generations Big Band

By Daenya Hussein

The album Pipe Dreams by Jim Walker and The MacEwan Generations Big Band captures the fluidity and essence of Jazz and Big Band in one record. We hear notes of South American, East Indian, and Celtic vibes to start the unique record off. The fusion of Jazz and Big Band in the album has a mix of energy, excitement, and spontaneity in Jazz but the controlled discipline of Big Band. The concept for the album's design was to capture the two sensations of sound and movement into one cohesive creation.

Light photography was used to display the feeling of movement and energy captured from the album. As a soft reminder of the tones used in the first three tracks, the use of dominant flag colours of Brazil, India, Wales, Ireland, and Scotland are displayed in the light painting. To keep a consistent tone, the typeface Abril Fatface is used to echo the feel of Big Band and Century Gothic for the secondary header to keep the balance.

As the light painting streaks across the cover, it guides the viewer to the back with the title tracks and the continuation of the light painting. As we open the album, we slide out the record and insert to see the consistent use of light painting at a macro scale. The use of complementary colours, orange and blue, as subtle reminders of the colours in the light painting from the album cover.

Faculty Mentor: Constanza Pacher

The Book Design of ‘A Blow to the Head,' a Poetic Memoir

By Kim Huynh

Edmonton’s eighth poet laureate Nisha Patel weaves a deeply personal and introspective retelling of her history of chronic illness, disability, and more in her poetic memoir ‘A Blow to the Head.’ She elaborates on her firsthand experiences with the Canadian medical and educational systems through profound and beautiful writing. The front cover features an illustration depicting the author who is injured and in the process of being pixelated – a metaphor for mental and physical disability, concussions, and trauma. The visual approach reflects the complex experiences and struggles the author has gone through, and how her illnesses continue to affect her to this day.

The book is separated into Parts, which feature a variety of different poems and prose that relate to the themes of the chapters. These poems are of varying lengths and complexity, requiring a high attention to detail to showcase the writing while also creating a system to maintain cohesion. The typesetting for each poem reflects the poem itself, allowing the reader space to read the poems in an impactful and meaningful manner. The carefully considered typeface selections in the memoir reflect the intimate writing through the delicate and elegant typefaces.

Faculty Mentor: Constanza Pacher

Designing an Informative Mental Health Visual Novel

By Kim Huynh

Video games have the potential to provide more than entertainment and these applied games can be designed for education, training, and more. The therapeutic potential of mental health video games is a developing field of study where research suggests they are an inexpensive, accessible, and stigma-free adjunct to therapy. By studying the intersection of mental health education with video games, the visual novel “Telepathic Bearista” was designed to implement cognitive behavioural therapy techniques into a game.

Faculty Mentor: Robert Andruchow

Designing for the Future: A Window into Augmented Reality

By Benjamin Kraemer & Danielle McDow-York

This project was completed for DESN444: Interaction Design II at MacEwan University in the Fall 2022 term. Our team was tasked to research and design a solution for well-being that leveraged the emerging field of augmented reality technology. Our project investigated how we might incorporate augmented reality into a window to improve the cognitive well-being of

someone experiencing Seasonal Affective Disorder. Research topics included the psychology of Seasonal Affective Disorder, the effect of the environment on cognitive well-being, and the technological advancements that allow for augmented reality to be perceived from a static device. Our solution leverages the findings from this research to create a digital prototype of the augmented reality window and its features.

Faculty Mentor: Dr. Isabelle Sperano

Designing User Experience in Crossover Zones; Where ETS intersects with the world; A Case Study

By Benjamin Kraemer, Ekaterina Vasilyeva, & Marco Tse

The work that we conducted in DESN 445 primarily looked at Non-Places following a data collection phase in which we identified key issues in the Edmonton Transit Service (ETS) when it came to ridership amongst youth (12-24). Non-Places can be described generally as those in which people remain anonymous and in which people would not want to dwell, lacking any significance, utility, or anthropological connections. We explored solutions in these crossover zones to make the riders feel more connected with their environment based on the research gathered in the class. We ultimately concluded on constructing a case study that identified key points that could be translated to other areas of the city where ETS is present.

Faculty Mentor: Dr. Isabelle Sperano

Digital Exploration of Human Anatomy and Fashion

By Long Ly

The goal of this project is to explore human anatomy and fashion through the medium of digital illustration. Because society moves at such a rapid pace, the pacing of people's life also moves quickly. Individuals are less likely to take time to appreciate the people or the world around them, so they may be quick to judge based on their first impression. As a result, one's fashion becomes a vital determining factor in people's perception of each other. The purpose is to look at how fashion changes a person’s first impression based on their clothing styles. A person's appearance could feel different based on the ratio, colour combinations, and texture of their clothes regarding their body shape.

The core learning of this project comes from the Advance Fundamental Class by TB Choi, a character concept artist, through the support of Student Undergraduate Research Funding. With the guided exercises about three-dimensional form and poses, clothes wrinkles, face and hair, the class heavily emphasizes the attention to line weight's expression. By describing the subject clearly through lines, it speeds up the coloring and rendering process by solving the form and space questions before tackling the hue, brightness, and saturation of the subject.

The progress of this project is shown through the artist's class exercise while it also reflects through different projects that occur during the time, which included human anatomy speed

sketches, Charles Bargue's sculpture drawing study, tote bag contribution, and storytelling through images.

Faculty Mentor: Alma Visscher

A Story told through Recipes

By Jennifer Onwudinjo

The package design for herbal remedy flashcards. The design is centered on the relationship that exists between rumors and truth. The box is designed with a witch concept and leads users to believe what is inside has something to do with being a witch, but the user discovers that this is far from the truth and all the box contains are recipes for how to cure illnesses. In the same way, Katharina was only trying to help but was accused of being a witch. Rumors may say one thing, but the truth can be something entirely different.

The box has a cut-out design that lets the user see the card's image. This image changes depending on which box the user buys. Like rumors, there are so many versions of the same story, and they can change at any moment depending on what is most favorably accepted.

Every design detail calls back to the rumors and accusations Katharina had to face. However, the packaging also shows that those accusations were not true. The design at the back of each recipe card represents the accusations brought forward against Katharina. From the accusation of her digging up her father's skull as a weapon of sorcery or causing a storm to even making animals ill.

The recipe cards also hold their little truth. As the user reads further into the card, they realize the directions given are extracts from the book of when misleading evidence was brought up about Katharina being a witch. It shows how much a rumor can seem like the truth but is not.

Faculty Mentor: Constanza Pacher

Competition Submission for the 'Pipe Dreams' Album

By Jennifer Onwudinjo

This is a design for a jazz album by Jim Walker and associates. The concept of this design is the immersion of the viewer. Jazz is a genre that tends to pull its listener in. This is expressed by taking a two-dimensional surface and turning it into a three-dimensional experience. It visually draws the viewer into experiencing the album's spirit and feeling. Creating this illusion of depth is done with the use of layers. These layers represent every stage of Jim's life that built his extraordinary career over the years.

The color scheme of the design is a calm blue tone. Blue is a color that represents freedom and depth, which are words that describe the album's sound. On the jacket, this blue is complimented with a beautiful orange, which creates a focal point on the cover, further pulling viewers into the illusion of depth. The typography used is League Gothic which is a condensed

typeface. It visually represents the life and feeling of performing in a big band; everyone is close together and working in harmony.

The second image in the insert is an abstract representation of a stage with a spotlight. This spotlight shines on Jim's remarkable career and all the people he has impacted over the years. The cover pulls the viewer in; when they open the album up, they are greeted with the stage view. They have arrived where they need to be to experience every part of the album.

Faculty Mentor: Constanza Pacher

Arc Card Campaign: ETS

By Randi Sempala, Molly Boyd, & Diana Haymour

A reimagined Arc Card campaign to help community partner goal of increasing ridership.

Faculty Mentor: Dr. Isabelle Sperano

DUETS: Transposing the Auditory into the Visual

By Liv Smreciu

Duets is a jazz album created by Kevin Dean with accompaniment from Jean Michel Pilc. In 2022, Dean had a medical emergency which shook him to his core. This experience is expressed throughout the album's journey. As Dean puts it, "pulls your ribs open and grabs your heart."

As a whole, the system focuses on two aspects of Duets, the idea of a conversation between the musicians and the vulnerability that entails. The title, which is built off of a blocky sans serif (ITC Avant Garde Gothic Pro), has transparency which prevents the viewer from being able to read the title unless they combine both colours that represent the back and forth of the musicians' conversation. In addition, the industrial nature of the typeface adds to this theme by signifying the mechanical nature of one's body. The primary typeface is accompanied by a friendly and round sans serif that smooths the harsh edges of the rest of the system. The red accent colour was specifically chosen to mimic the raw physical and emotional "insides" of people. Finally, the background image (a photograph provided by Annie Spratt) is used for its texture and to invoke the sentiment seen throughout the package. The texture adds visual interest while keeping the focal point on the foreground elements. The vulnerable sentiment on display is exposed as nothing can be hidden within its stark negative space.

In the end, we cannot participate in the conversation unless we open ourselves up to others.

Faculty Mentor: Constanza Pacher

The Mabinogion: The First Branch, designed and edited by Kaitlyn Tupper

By Kaitlyn Tupper

The Mabinogion is a collection of ancient Welsh myths, folklore, and legends, first translated in entirety by Lady Charlotte Guest between 1838 and 1845. In designing a book edition for the First Branch of the Mabinogion, my goal was to make the translation more accessible to a modern audience through annotations and design.

The body text is set in serif typeface Verdigris Pro Text, preserving the classic literature sensibility of the text without feeling austere. The centred chapter titles and drop caps continue this classic design. The sans serif typeface Roboto is used in the annotations and provides a contemporary contrast to the body serif. Roboto is also compatible with the International Phonetic Alphabet, necessary for the goal of accessibility.

The annotations highlight uncommon words, cultural references, Welsh proper nouns, and passages that may be difficult to follow by modern standards. The annotations are placed next to the text for easy reference. The live area for the body text is closer to the inside border to accommodate this.

The book's illustrations are reminiscent of linocut carving; the unpolished style suggests the handicraft of the ancient people who would have orally passed on these myths. The illustration above each chapter title shows a significant symbol from the branch as well as a plant native of Wales. The cover imagery shows a significant character in a similar linocut style with an inked paper texture. The title is in the typeface Celtic, evoking the locale and era of the ancient Welsh and Celtic legends in the Mabinogion.

Faculty Mentor: Constanza Pacher

Digital Interaction in a Shared Public Setting: An Exploration of West Edmonton Mall Map User Experience

By Ekaterina Vasilyeva & Braden Bierkos

This project is about exploring the West Edmonton Mall Map Kiosk wayfinding system. We designed the shared map interface through a human-centered design thinking approach. We examined how users interact with their surroundings and the currently available tools and identified pain points and needs. We used multiple research methods, such as user testing and heuristic evaluations and observed the shoppers to understand their needs and frustrations. Based on our observations and interviews, shoppers stated that they would like a memorable experience while allowing them to reach their destination effortlessly. This project will provide insight into the design process of the kiosk to help navigate the shared physical space beyond screen-focused experiences.

Faculty Mentor: Alexander Stewart

Kepler's Blooms: 'erbs of the earth

By Susanna Woudstra

The inspiration of the project, “Everyone Knows Your Mother is a Witch” is a novel written about the trial of Katharina Kepler, set in the 17th century. When she is accused of being a witch, she must defend herself through her son, a mathematician and scientist, and her neighbor Simon. The story follows themes such as truth vs lies, and natural vs supernatural. Katharina as a character strives to be rooted in the real world, going against the tales of supernatural deeds, and believes strongly in the power of the natural world which can be seen in her many herbal remedies.

The product is a collection of herbal information cards with recipes included, intended to educate the reader on the many uses of everyday herbs. It is a modern take on the herbs that Katharina uses in many of her remedies, aiming to show the importance and benefits of learning about the natural world around you. They show Katharina’s need to be grounded in reality, her desire to help people as best she can, and how much she treasures this knowledge. Throughout the story, she uses herbs to treat physical ailments, but in such a way that feels as though she is also battling the vile nature of the lies surrounding her trial by finding respite in the truths of nature.

Faculty Mentor: Constanza Pacher

Biological Sciences

Science’s Need For Philosophy

By Benjamin Bekkema

Science and philosophy are often considered to be in conflict. Certain people in the scientific community tend to crudely deride philosophy as a meaningless endeavour. This view is exemplified by mathematician Mike Alder in his Philosophy Now article “Newton’s Flaming Laser Sword”. Alder makes the claim that only propositions with observable consequences should be debated. Since a majority of philosophy makes propositions that do not have observable consequences it fails to provide meaningful truths. As such, Alder wishes to reduce philosophical questions, like ethical ones, to scientific ones. In my argument against Alder’s reductionist view of philosophy, I argue that ethical questions cannot be reduced to only observable propositions. I use the accounts of sophistry in Plato’s Gorgias and Josef Pieper’s Abuse of Language - Abuse of Power as a basis for my argument. I consider the example of a sophistic scientist who acts immorally, akin to the character of Callicles in the Gorgias, but produces scientific breakthroughs nonetheless. There would be no proposition with observable consequences to convince the scientist to act ethically. Yet our intuition is that the scientist’s conduct requires just the debate Alder rejects. I put forward that Alder’s crude account of philosophy and science offers scientists no meaning or reason as to why the scientist has acted immorally. Thus science alone cannot answer why we ought to care about acting ethically.

Faculty Mentor: Dr. Celia Hatherly, Dr. Edvard Lorkovic, & Dr. Susan Mills

Conservation Optimism in MacEwan University Undergraduate Students

By Cora Kaplan

Many studies in other disciplines support the value of optimistic messaging but there is a lack of empirical evidence proving the positive correlation between this form of messaging and an engaged behavioural response in conservation studies. No studies have taken place testing the effects of optimistic messaging in an academic setting so we will be focusing on MacEwan University undergraduate students. The students will provide survey responses that can be used to run a t-test to compare the changes in emotional responses after different forms of messaging; optimistic, pessimistic, and neutral. We acknowledge there may be other variables that influence the emotional response of individuals and consider this in our Principal Components Analysis (PCA). Results that support the most engagement from a specific presentation type will show it may be a more effective presentation method to encourage support for conservation efforts.

Faculty Mentor: Dr. Jessica Haines

Incorporating a single-stranded split DNAzyme design concept for use in aptasensors

By Amanda Kryjak

Aptamers are single-stranded DNA or RNA molecules that have a high specificity for their target molecule. Ligands can range from small molecules to entire cells. Thus, aptamers can be used as biosensors, which is where the term aptasensor stems from. We have proposed to create a novel split-DNAzyme aptasensor for ATP, where two halves of a DNAzyme are separated by a conformation switching aptamer. In our design, when the aptamer is bound to ATP the two halves are separated. When the two halves are together, ATP is not bound and the DNAzyme is functional. DNAzymes are DNA molecules that are capable of catalysis. Our design features the peroxidase mimicking enzyme, which requires the DNAzyme to be rich in guanine residues in order to form a G-quadruplex. The G-quadruplex enables the peroxidase activity which can be detected and quantified through a color change using ABTS. To first characterize the conformational change, we have used DMS Footprinting. We have chosen to first apply our design concept to ATP, since there are readily available aptamer sequences for ATP that undergo a conformational change. However, this design concept can be applied to detect any target molecule in various fields such as microbiology, pharmacy, medicine, forensics, and agriculture.

Faculty Mentor: Dr. Nina Bernstein

Response of Migratory Bird Frequencies to Temperature in Central Alberta

By Loreena Nieuwenhout

Migratory birds are an excellent indicator of the effects of anthropogenic climate change on biota in the Americas. Increased greenhouse gas accumulation in the atmosphere can contribute to an overall warming on air temperature by trapping longwave radiation and

reflecting it back to Earth. As average air temperatures start to increase, more migratory birds are suffering from disturbance to their habitat and potentially changing their migratory behaviours. Using daily estimated bird total data gathered from the Beaverhill Bird Observatory and daily temperature data from the Alberta Climate Information System, this study examined the relationship between the daily frequency of migratory Anseriformes and the daily minimum and maximum temperatures near Tofield, Alberta, Canada, from 2017 to 2021 but did not find sufficient evidence to support a direct response of bird frequencies and air temperature changes. Knowledge gained from this study has potential to help inform further areas of research that may guide conservation practices and resource management strategies in areas in the face of climate change.

Faculty Mentor: John Fedoruk

Identification of Potential Paralysis Proteins in the Tick Dermacentor andersoni

By Caleb Odegard

Ticks are blood-sucking arthropods that can act as disease vectors to humans and other animals, resulting in a threat to public health and economic burden within the agricultural sector. The threat of tick-borne illness is increasing due to the expanding range of many tick species due to Ecosystem and climate changes. Additionally, many species of ticks can induce host paralysis during feeding. *Dermacentor andersoni*, an ixodid tick found throughout western Canada, can induce potentially lethal host paralysis during feeding. Salivary gland (SG) paralysis proteins have been identified and isolated in several tick species, but in *D. andersoni* little is known about these proteins and mechanisms of action. This project attempts to elucidate possible candidate paralysis proteins within the SG of *D. andersoni*. Analysis of the recently published *D. andersoni* genome using genomic and protein data from other tick species has been implemented to detect the expression of potential paralysis protein genes. Preliminarily results are limited. However, a histamine-binding salivary protein from *D. andersoni* shares homology with the SG protein TSGP4 from the tick *Ornithodoros savignyi* which is known to be toxic and implicated with paralysis. Additional research will be conducted to determine whether this gene is more strongly expressed in a paralysis virulent strain of *D. andersoni*, and if so, will be flagged as a potential paralysis protein. Tick SG proteins may have pharmacological value, and the identification of paralysis proteins may lead to novel treatments in preventing paralysis in affected animals.

Faculty Mentors: Dr. Treena Swanston & Dr. Kevin Friesen

Utilization of multilocus DNA barcoding in identifying unknown soft coral species of Anthelia (Octocorallia)

By Mannraj Pataria

There are an estimated 1-9 million species of corals yet to be discovered. Anthelia is a species of soft coral that belongs to the Xeniidae family within Octocorallia. The Xeniidae family of soft corals are of interest due to their ability to rapidly recolonize disturbed reefs, which have become more prevalent with global warming. Octocorallia also contains some of the most

valuable corals used in jewelry. Identifying corals not only contributes to its conservation and our knowledge of its evolution, but also prevents fraudulent coral jewelry and the overharvesting of coral beds. However, morphologically identifying corals is very difficult and is further exacerbated when it is polished and carved into jewelry. Instead, multilocus DNA barcoding can utilize the genetic material of corals to reveal an accurate classification of species. Specifically, genetic loci in the mitochondrial or nuclear genes can be used to tag and classify corals, with referencing done to genetic databases such as GenBank or NCBI.

Faculty Mentors: Dr. Joshua Miller & Dr. Ross Shaw

Cloning and Purification of a Glycerol Specific Alditol Oxidase for Biosensor Construction

By Brady Ryan

Biosensors have been used to detect the presence of carbohydrates in serum and solution. Alditol oxidase (AldO) is a redox enzyme which catalyzes the oxidation of longer-chain polyols but has a low affinity for glycerol, despite the similarity in structure. Glycerol is an undesirable byproduct of wine fermentation, negatively affecting quality. Glycerol is also a product of adipose tissue metabolism during fasting, indicating abnormal blood glucose. In both situations, glycerol concentrations must be closely monitored. Using site-directed mutagenesis, a quadruple mutant of AldO was found to have increased specificity towards glycerol (AldOG). Glycerol oxidases are rare in nature, and the small, monomeric characteristics of AldOG suggest compatibility for biosensor incorporation. Previous research found recombinant AldOG with a GST tag to be insoluble. The synthetic AldOG gene was cloned into E. coli competent cells with an N-terminal hexahistidine tag aiming to improve solubility. Protein isolation and solubilization was attempted using native and denaturing NiNTA affinity chromatography. Functional AldOG optimization procedures will be used in collaboration with Dr. Samuel Mugo for biosensor incorporation. Functional AldOG is also to be used in a 300-level biochemistry laboratory course developed by Dr. Nina Bernstein.

Faculty Mentor: Dr. Nina Bernstein

Optimization of Agar-Overlay Bioautography in Screening Antimicrobial Phytochemicals

By Inder Singh

As multidrug-resistant bacteria increase in prevalence, alternatives to traditional antibiotics are needed to mitigate health and economic burdens. Plants are a possible source of new compounds since they represent chemical libraries containing many effective antimicrobial phytochemicals. However, high cost and time burdens are associated with traditional bioassay-guided isolation of plant phytochemicals, delaying breakthroughs. Bioautography, a highly customizable technique that combines agar diffusion assays with thin-layer chromatography (TLC), significantly reduces shortcomings associated with traditional bioassay-guided isolation. This study investigated the application of bioautography in screening for antimicrobial phytochemicals using essential oil mixtures of Origanum vulgare and Eugenia caryophyllus as

models of phytochemical extracts. Oil mixtures were spotted onto TLC plates, separated using ethyl acetate and hexane solvent systems, and overlayed with Mueller-Hinton (MH) agar inoculated with Escherichia coli. Following incubation, bacterial lawns were examined for zones of inhibition (ZOI), indicating the antimicrobial activity of phytochemicals separated from oil mixtures. TLC solvent systems, the volume of poured MH agar overlay, triphenyl tetrazolium chloride (TTC) application, and oil mixture concentrations were examined to optimize the production of discernible ZOI on agar plates. Conditions were identified that produced optimized ZOI with test samples, and will be validated for use with other plant-derived extracts. Overall, bioautography represents a promising alternative to traditional bioassay-guided isolation, but additional work must be done to optimize this technique for use with other plant-derived extracts and bacterial species.

Faculty Mentors: Dr. Kimberley Harcombe & Dr. Tina Bott

BMP3 Treatment Effects on Differentiated Chondrogenic ATDC5 Cells Signaling Pathways and Protein Expression

By Joe Waller

Three BMP3 variants of interest (c. 1178C>T; p. S393F, c. 1349T>;A; p. F450Y, c. 1408G>C; p.A470P) were identified by researchers studying the genetic basis for ocular coloboma. They concluded that BMP3 plays a role in ocular coloboma based on BMP3 mutant zebrafish. An additional finding was that BMP3-mutant zebrafish exhibited cartilaginous jaw deformities compared to wildtype siblings. BMP3 is an atypical member of the bone morphogenic protein subfamily and has been identified as a negative regulator of bone formation, while its effects on chondrogenesis are poorly understood. We first confirmed and characterized ATDC5 cells as a model for chondrogenic differentiation by culturing in DMEM/F12HAM growth media and differentiating 1% ITS liquid media. Immunoblots of ATDC5 cell lysates showed increased expression of the chondrogenic marker protein, collagen II, in 1% ITS-treated cells compared to untreated controls. Whereas 1% ITS treated cells at 2 weeks had much fainter bands indicating decreased expression of collagen II. Both groups of cells treated with 1% ITS for either 1 week or 2 weeks showed increased expression of the osteogenic marker protein, RunX2, compared to untreated controls. Alcian blue staining of week 1 cells, week 2 cells, and untreated controls gave a positive indication of glycosaminoglycans. Similar positive results were observed for Alizarin red staining. Based on these results, we next treated groups of ATDC5 cells with either 100 ng/mL of BMP2, 100 ng/mL of BMP3, 1% ITS, or an untreated control group and took lysates at time points day 1, 4, 7, and 10 for future immunoblots.

Faculty Mentor: Dr. Lisa Prichard

Child and Youth Care

What does diversity do? Exploring parent-child play engagement with loose parts to bridge the learning gap between home and early learning environments

By Kiana Krueger

In Canada, childcare experiences are becoming increasingly diverse due to ethnically heterogeneous populations. The vitality of having open attitudes towards diversity is a pressing need. Despite current efforts to address diversity in early learning environments, no magic formula exists for educators encountering new, unique, and culturally unique experiences. Effectively bridging the gap between the home and early childhood environments requires the collaboration of diverse learning styles, backgrounds, and traditions. Play with loose parts (a combination of various natural and fabricated materials, predominantly open-ended) can be a powerful tool for bringing diversity into play. In the study, we observed a variety of parent-child dyads and explored how parents with diverse backgrounds influence their play with their children with two sets of toys (loose parts versus percussion instruments). The goal was to explore parents' roles in their children's play and how cultural backgrounds impact engagement and duration of unstructured play. We address the question “How does diversity impact parent engagement and roles during loose parts play?” We evaluated parents’ ratings of their engagement and enjoyment of play. While many parents enjoyed playing with loose parts, some were unaware of what to do with the materials. The presentation will describe unique cultural patterns in loose parts play and incorporate the highlights of children's play experiences with parents reflecting on diverse backgrounds to support educators’ practices.

Faculty Mentor: Dr. Ozlem Cankaya

Exploring the role of language development in young children’s unstructured play narratives

By Courtney Smith

Young children's language skills are crucial in facilitating effective communication during play. Productive language, also known as expressive language, allows children to use language effectively to express themselves verbally. It involves using grammar, vocabulary, and syntax to convey thoughts, ideas, and emotions to others. Developing productive language skills is a critical aspect of cognitive development during childhood. When children engage in play, they often verbalize their ideas and actions, reinforcing their language skills. However, if a child's productive language skills are not as developed, they may need help to express themselves and communicate effectively with their play partners. This can be particularly challenging if the child's primary language is not English. Such difficulties can lead to frustration and disengagement during playtime.

In a recent experimental study, we examined the interactive play sessions of 40 children aged 4 to 5 and investigated the relationship between their language skills, home language, and play narratives. The study involved two sets of toys: a box of loose parts made up of various naturally occurring and manufactured open-ended materials and a set of limited-purpose toys consisting of percussion instruments. Children were involved in two unstructured play sessions. During the play sessions, we recorded the children’s verbalizations during the play sessions and measured their language skills using the Wechsler Preschool and Primary Scale of Intelligence. The research question guiding our study was, “How does a child’s verbal language impact their play?” In this presentation, we will discuss the influence of a child’s language skills; home language may affect their play narratives.

Faculty Mentor: Dr. Ozlem Cankaya

Children's involvement in Science, Technology, Engineering, and Mathematics (STEM) with loose parts

By Keirsten Taylor

Loose Parts Play, which involves engaging with various open-ended materials such as acorns, pipes, and tires, has been identified as one of the most encouraging forms of play for fostering learning in Science, Technology, Engineering, and Mathematics (STEM). Researchers and policymakers alike have endorsed loose parts play for its ability to develop creativity, divergent thinking, and problem-solving skills through hands-on play experiences that involve designing, building, and testing structures.

In a pre-experimental study, we observed 40 children playing with either loose parts or single-purpose toys, and explored how their STEM activities, play types, duration, and engagement were influenced by their gender and key social determinants such as parental education and income. Our initial findings indicated that the frequency with which children engage in STEM during free play varied by the type of play material, and that they often engaged in STEM activities during play without explicit instruction. Our future investigation will explore the influence of gender dyadic composition (i.e., child gender-parent gender) on STEM talk during play, and the impact of child and parental gender on STEM engagement. These further investigations will add to our understanding of how loose parts play can best support the development of STEM skills and attitudes among young children and inform educational practices and policies that aim to promote STEM learning in early childhood.

Faculty Mentor: Dr. Ozlem Cankaya

Communication

Queer Characters Impact on Video Games: Comparing Warzone and Apex Legends

By Remi Baker

The inclusion of LGBTQ+ characters in video games remains a topic of debate among game developers and their audiences. This study will investigate how a video game with queer characters affects players' experiences, particularly the experiences of LGBTQ+ players. Through survey and content analysis methods, this research study will compare two video games: Call of Duty: Warzone, a game with zero LGBTQ+ characters, and Apex Legends, a game with seven LGBTQ+ characters, to determine if there is a visible difference in players' experiences.

Faculty Mentor: Dr. Lucille Mazo

No One is an Island: The Misdirection of the Individual Climate Impact Narrative

By Heather Hutchinson & Elyse Colville

This paper seeks to examine, through secondary, mixed methods research, the ability of the individual to affect positive change regarding the climate crisis through their specific choices. By reading myriad scholarly, scientific, and journalistic sources, we found that though positive changes can be made on a smaller government scale, individuals' ability to reduce environmental harm through their own choices and habits is minimal. Further, corporations and others in positions of power engage in both long- and short-term efforts to actively sabotage efforts of groups working to make societal changes or bring attention to the issues of the climate crisis. The researchers suggest that ecological communications should change direction from scolding the individual to emphasizing systemic change. It is recommended that further study be conducted of cohesion in activist organizations and collectives and the effects of education in rhetoric.

Faculty Mentor: Dr. Lucille Mazo

Computer Science

Analyzing Factors Impacting COVID-19 Vaccination Rates

By Mitchell Driedger, Dongseok Cho, & Sera Han

Since the approval of the COVID-19 vaccine in late 2020, vaccination rates have varied around the globe. Access to a vaccine supply, mandated vaccination policy, and vaccine hesitancy contributes to these rates. This study used COVID-19 vaccination data from Our World in Data and the Multilateral Leaders Task Force on COVID-19 to create two COVID-19 vaccination indices. The first index is the Vaccine Utilization Index (VUI), which measures how effectively each country has utilized its vaccine supply to doubly vaccinate its population. The second index is the Vaccination Acceleration Index (VAI), which evaluates how efficiently each country vaccinated their populations within their first 150 days. Pearson correlations were created between these indices and country indicators obtained from the World Bank. Results of these correlations identify countries with stronger Health indicators such as lower mortality rates, lower age-dependency ratios, and higher rates of immunization to other diseases display higher VUI and VAI scores than countries with lesser values. VAI scores are also positively correlated to Governance and Economic indicators, such as regulatory quality, control of corruption, and GDP per capita. As represented by the VUI, proper utilization of the COVID-19 vaccine supply by country is observed in countries that display excellence in health practices. A country's motivation to accelerate its vaccination rates within the first 150 days of vaccinating, as represented by the VAI, was largely a product of the governing body's effectiveness and economic status, as well as overall excellence in health practices.

Faculty Mentor: Dr. Mohamad El-Hajj & Dr. Mohammed Elmorsy

Exploring Music Generation with Magenta

By Michael Mannerow

Magenta is a research project developed by Google that explores the role of machine learning in creating art and music. Primarily this involves developing new deep learning and reinforcement learning algorithms (Magenta 2020a). In addition, Magenta provides tools for managing and manipulating music/image data. This project will focus on using various Magenta models, specifically RNNs and autoencoders, which take symbolic music data as input to generate new samples. The goal is to give musicians another outlet for creativity, allowing them to create variations on existing MIDI data or generate new data.

Faculty Mentor: Dr. Dana Cobzas

Multicommodity Flow Reliability for Energy Harvesting Wireless Sensor Networks

By John Penaflor

In this paper, we consider energy harvesting wireless sensor networks (EH-WSN) with multiple sinks that supports multiple concurrent applications. Each application is associated with a number of sensor nodes that generate and send traffic to the application associated sink. Each node can relay any application traffic towards the application sink. In addition, each node uses an energy management unit to control the amount of traffic that the node can relay based on its available energy. To model the fluctuations of the nodes' energy levels, we formalize a multicommodity flow reliability problem (denoted MultiFlowRel) that calls for estimating the likelihood that at least certain amount of each application traffic is delivered to the associated application sink. We show that our proposed problem is #P-hard and propose a bounding framework for deriving lower bounds for the exact reliability solutions. Numerical results show the performance of our proposed framework and its use in solving some interesting network design problems (e.g. optimal sink locations and appropriate transmission parameters).

Index Terms—Energy harvesting wireless sensor network, network reliability, energy management, multipurpose wireless sensor networks, iterative methods, probabilistic graphical mod- els

Faculty Mentor: Dr. Mohammed Elmorsy

Comparing Clustering Results of Specialized Functional Models and Standard Models through Comparative Analysis of Traffic Speed Differential Data

By Iain Smith & Dominic Dobosz

Traffic flow and speed differences between cars are important factors that indicate the likelihood and danger of collisions. A vital part of intelligent transportation systems is discovering important locations to monitor and ticket speeding vehicles. To find these locations, we study data from a low-density city. Recent research in clustering includes fitting time series data to a set of basis functions forming functional data. An important step in determining if functional methods can be

applied to real-world problems is comparing results in application. We compare the clustering performance of new methods developed for functional data clustering with robust non-functional methods. Using the original data and factors that may affect traffic that were not used in clustering, weekday, month, and speed limit, we determine that functional methods outperform non-functional methods at providing understandable and relevant clusters.

Faculty Mentor: Dr. Mohamad El-Hajj

English

Modern Rhetoric Through a Classic Lens: An Exploration of Andrew Tate, Cancel Culture, and the Art of the Clip

By Johnathan Bobinac

Emory Andrew Tate III, commonly known as Andrew Tate or the Top G, catapulted himself to the peaks of internet stardom in a fashion previously unmatched through his stylistic rhetoric and strategic implementation of the art of the clip; an artform popularized through Tate to have supposedly proved a paved road to besting cancel culture. In order to effectively analyze the rhetorical art of the clip, this document will provide embedded videos and live links to some of the most viral oratory moments leading up to and following the cancellation of Tate. In addition to the videos, this paper will ensure the integral transmission of the clip is still preserved in a transcribed form, emphasized and contextualized where necessary, protecting the expression lost in translating stylistic discourse into the confines of a research-based analysis. Furthermore, contrasting, reflecting, and comparing Tate's rhetoric to the ancient work of Aristotle's "The Art of Rhetoric" will clear the way for an objective assessment of Tate's stylistic abilities. Ultimately serving as a classical lens with a focalized point to view modern rhetoric in the context of Tate and the pressures of cancel culture on the unbounded art of the clip.

Faculty Mentor: Dr. Robert Einarsson

Affective Adaptations: Stephen King from the page to the Screen

By Symon Buchanan

In an effort to highlight how and why so many adaptations seem to fail utterly, I've been focusing on exploring three adaptations of Stephen King that, I believe, typify three different relationships of affect as pertains to cinematic adaptations of horror novels. King is my case study as one of, if not the most, adapted author in living memory, as well as one of the most widely read.

Faculty Mentors: Dr. Joshua Toth & Dr. Mike Perschon

Identity and the Innovation of the Fair Unknown in Malory's Le Morte d'Arthur

By Justyn Chodzicki

No abstract available.

Faculty Mentor: Dr. Pamela Farvolden

“The Lurking Place of Nameless Terrors”: Queer Alterity within British Normative Subjects in Richard Marsh’s *The Beetle*

By Emilie Glazier Morse

My thesis project will examine the resurgence of gothic literature in the 1890s through the

framework queer theory. As scholars of the literary gothic suggest, the prolific production and consumption of gothic literature reflected anxieties surrounding identity categories in the fin de siècle. The literature represented an extensive range of concerns through its ambiguous monsters and portrayals of male characters who breached the expectations of masculinity (Halberstam, Hutchison, Stuart, Rowlinson). Because of these concerns about identity, there is a focus on gothic literature through the framework of queer studies. I focus on Richard Marsh’s novel The Beetle (1897), which subverts the notions of stable identity categories and locates the threat within the gothic monster and the so-called normative characters. The text exploits fears surrounding scientific discourse, English society's decline, and normative gender roles. In Marsh’s novel, the monstrous beetle invades English customs and bodies yet demonstrates that such otherness exists within normative subjects. Despite the reinstatement of order at the end of the novel, Marsh presents a character that makes readers question the validity, stability and strength of masculine and imperial hegemony.

Faculty Mentors: Dr. Daniel Martin & Dr. David Hollingshead

Jeweled Skulls: Fantasy Meets Horror in Fritz Leiber’s *Swords Against Death*

By Kairo Martens

The sometimes horrifying, sometimes funny, and all-times strange adventures of twentieth-century American speculative fiction author Fritz Leiber's most enduring creations, Fafhrd and the Gray Mouser, have left an enduring influence on fantasy and popular culture from *Dungeons & Dragons* to *Discworld* to *Game of Thrones*. Leiber's Fafhrd and the Gray Mouser stories belong to a critically understudied genre known as sword-and-sorcery: a kind of heroic, swashbuckling, and brooding fantasy pioneered by Robert E. Howard's Conan the Barbarian stories and later named by Leiber. One of Leiber’s most underappreciated achievements is his trailblazing fusion of horror and fantasy via sword-and-sorcery. With fundamentally vulnerable protagonists and a conscious, innovative engagement with contemporary horror tropes, horror becomes the focus of Leiber's early sword-and-sorcery tales, allowing them to touch on profound themes like the inescapability of death, the power of the irrational, and the loss of agency in the face of overwhelming forces beyond comprehension. Analyzing three of Leiber's earliest Fafhrd and the Gray stories collected in *Swords Against Death*, "The Jewels in the Forest," "The Bleak Shore," and "Thieves' House," this article investigates the close relationship between fantasy and horror in Leiber's sword-and-sorcery and proposes that Leiber's early

inclination toward horror marks his work as some of the most mature and fully-realized of its kind.

Faculty Mentor: Dr. Mike Perschon

Shake Down the Sky: Feminist Utopias vs. Lesbian Separatist Fiction in 1970s America

By Madison Pilling

No abstract available.

Faculty Mentors: Dr. David Hollingshead & Dr. Kathryn Holland

Human Services and Early Learning

Examining parent-child play types, duration, and engagement with loose parts: How parental income, educational attainment, and children's age and cognitive functioning shape loose parts play

By Chloe Cattral

Children's access to play materials can significantly account for the social stratification of knowledge and achievement gap among low-, middle- and high-income children. Since disposable income enables purchasing stimulating toys and materials, low-income families often cannot afford these 'non-essentials.' Professionals working with children in impoverished homes typically find few toys available. There are many calls to enrich young children's indoor play, experimentation, and learning through Loose Parts Play. Loose Parts Play is unique, involving open-ended materials (e.g., cardboard, sticks, pipes, beads) generally not intended for play. Many policymakers and professionals explicitly endorse loose parts to facilitate child development and learning. However, despite extensive public and educational recommendations, empirical research on how young children engage in loose parts play is minimal. Our exploratory study investigated 40 parent-child dyads' and how the play material type (loose parts vs. single-purpose toys) influenced young children's play types, duration, and engagement while controlling for parental income and educational attainment, children's cognitive functioning and age at the time of testing. Preliminary results demonstrated the main effects of play material and age in duration and play types with loose parts. Executive function and parental education were predictors of children's play engagement and duration.

Faculty Mentor: Dr. Ozlem Cankaya

Children's Rights: Focusing on How Consent and Inclusion Affect Participation

By Tori Vail & Kiera Leblanc

Inspired by Alberta's focus on children's right to participate for National Child Day 2022, this research examines children's participation, narrowing in on the interplay between participation,

consent, and inclusion. This research started as a group assignment for ECCS 260: Family and Community Issues and was later presented at a province-wide professional conference for early childhood educators. Components of this research have been further celebrated through winning a national essay contest which will lead to publication. The findings highlight the importance of empowering children through the education of their rights and promoting their active participation in society. This research confirms the importance of consent, body autonomy, and boundaries regarding children's right to participate fully in society, while also examining how we can be inclusive with all children, regardless of exceptionalities. When children are consent educated and empowered to recognize that they are genuinely valued, they are better equipped to actively engage in society.

Faculty Mentor: Carolyn Parkes

"I'm Exhausted!" The effects of fatigue on deaf students

By Brooke Wanchulak

The cognitive, visual, auditory, and attention demands within classroom environments are compounded for students who are deaf. The effort needed to focus simultaneously on information presented auditorily and visually across multiple, overlapping speakers for at least six hours a day, five days a week when resources mitigating fatigue are denied, unavailable, or infrequently implemented has a lasting impact on educational, vocational, and quality of life outcomes for students. The likelihood that fatigue has serious consequences to academic, social-emotional, and vocational outcomes for students who are deaf is undeniable. This presentation will discuss what fatigue is, how it affects students who are deaf, and what can be done by teachers/instructors and classroom peers to support students.

Faculty Mentor: Dr. Natalia Rohatyn-Martin

Humanities

Somewhere Over the Rainbow: Imagination's Role in Climate Justice via a Deweyan Analysis

By Amelia Altmiks

This research essay offers suggestions for climate action via a Deweyan characterization of imagination and interest—relating these to the resiliency concept of radical imagination. The goal of this analysis is to show how Dewey's works can be used as a contemporary guide towards social amelioration and climate resilience.

Faculty Mentor: Dr. Alain Beauclair

Challenging the Spartan 'Mirage' by Redefining the Greek Standard for Burials

By Dustin Berndt-Setter

Ancient sources, like Plutarch, have written on the Spartan burial practices by depicting them as 'unique' through the acceptance and practice of intracommunal burials compared to extracommunal burials. Through the portrayal of Spartan burials in ancient sources, such as Herodotus, Plutarch, and Pausanias, Sparta was depicted as being the exception to the Greek standard . However, the ancient sources on Spartan burials are not reliable, thus, resulting in modern scholars relying on material evidence to infer an accurate prediction about past societies . This paper will address the flaws and inconsistencies within the ancient sources' description of Spartan funerary practices and illustrate how Sparta was a part of the Greek 'standard'. This will be accomplished by using recent archaeological evidence showcasing extracommunal and intracommunal burial practices from the Archaic to the Hellenistic period to contradict the existing ancient sources illustration of Sparta's 'unique' burial practices. Furthermore, this paper will compare Sparta with its neighbouring poleis, Corinth and Argos, to show how their archaeological evidence also depicts the mixture of intracommunal and extracommunal practices from the Archaic to Classical period. Thus, I argue that the preconceived 'unique' intracommunal burial practices of Sparta are inaccurate based on the archaeological evidence, which instead supports that the Greek standard utilized a mixture of intracommunal and extracommunal burial practices.

Faculty Mentor: Dr. Jessica Romney

Round table with Empeños/Trials artists

By Amanda Fuenmayor, Ashley Bernal, Mira McElhinney, & Eric Flores Moreno

In this round table, Mexican theatre practitioners will discuss their performance and the student members will discuss the process of translation. Note that this is attached to the presentation of the theatre piece that Dr. Cowling is hosting. Dr. Cowling has been in touch with the research office about the possible timing of this event.

Faculty Mentor: Dr. Erin Cowling

The Heroic Love of Socrates

By Austin Herbert

This reflective essay draws upon mythical heroes in Plato's dialogues to distinguish the role of love in Socrates' philosophical approach to death. By comparing the mythic "labours" of heroes who also risked death, the essay emphasizes that while Socrates shares some interesting parallels, his philosophizing is unique because it arises out of love. In examining Socrates' love, his calmness in facing death springs from his humility in not presuming ultimate proofs or wisdom. In the dialogues, Socrates approaches death with calmness and hope. Like the heroes, the gods bid him to risk death in performing a "labour." Distinct from heroes, however, Socrates sees this labour as philosophy. The essay argues that Socrates' love interplays with the ignorance of ultimate truths. Socrates ignorance and lack of absolute proof of death, truth, and moral goodness allow him to seek wisdom lovingly by caring for everyone. By examining Socrates' uniqueness within the context of mythic themes, the role of love in caring for

everyone's moral well-being is exemplified by Socrates' labour and is central to philosophy. The essay finds that Socrates' example of loving wisdom by caring for others and discussing virtue, yet lacking proof, allows him to embody a calm hope even towards death. In short, Socrates can love wisdom, care for everyone's well-being, and seek moral goodness, as humans lack ultimate goodness. In not assuming proof or wisdom, Socrates can pursue this love by caring for others, rousing them to care for their moral well-being and love truth.

Faculty Mentor: Dr. Cyrus Panjvani

Descartes & Medicine: Healing Teleology

By Joseph La Torre

Descartes demonstrated a serious interest for health preservation, but does his rejection of teleology in natural philosophy preclude a concept of healthy human bodies?

Faculty Mentor: Dr. Susan Mills

Utilitarianism in Sparta

By Justin Norton

A general analysis of Sparta and some of the elements of their society typically viewed as exceptional and how these elements are rooted heavily in utilitarianism.

Faculty Mentor: Dr. Jessica Romney

Worship of Artemis in Ancient Sparta

By Dominique Ross

The Lady of the Willow Whips was a term paper written to explore the relationship between Sparta's youth and the worship of Artemis, specifically regarding the unique relationship. Spartan boys had with her. The infamous "Whipping Ceremony" plays an essential role in the culmination of the boys' learning within the military schools of Sparta (agōgē). This poster summarizes some of that information and shows the archaeological area the ceremony occurred.

Faculty Mentor: Dr. Jessica Romney

International Business, Marketing, Strategy, and Law

National Securities Regulator

By Abhijeet Singh

No abstract available.

Faculty Mentor: Dr. L. Daniel Wilson

Heating Up the Market: A case analysis on Kaiso Hot Sauce

By Ivy Wu & Connor Smith

Kaiso Pepper Sauce is a locally based company that wished to expand their consumer base and market reach. The relationship between consumer attitudes and brand perception was examined to identify potential marketing approaches. Results were gathered through a market questionnaire (n= 136), in order to model consumer profiles and analyze their affect on product perception. The resulting multivariate regression model (CI: 90%) indicated that the difference in receptiveness to Kaiso's branding between the Black/African demographic and the Caucasian demographic was significant. The average Black/African participant perceived the product more negatively than the average Caucasian participant. The same observation applied to South Asian demographics. Perception was positively correlated with an increase in consumption rate across all participant profiles. Notably, the demographics that exhibited a negative perception of Kaiso are associated traditional spicy cuisine, which is a trait correlated with the desire for perceived authenticity over other product attributes.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Mathematics and Statistics

Measuring the Effect of COVID on Alberta Oil Prices

By Sandy Jr Julian

The Oil industry in Alberta has become one of the largest contributors to Canadian oil and equivalent production for decades. Oil sands extraction and refineries alone produced a vast amount of employment opportunities which contributed to Alberta's economic growth. Therefore, studying one of the economic powerhouses of Alberta will examine its role in Alberta's future prosperity. This time series analysis will seek to understand the underlying causes of trends or systemic patterns in Alberta's oil over time and find out the best possible model that can be used to forecast the price fluctuations. Intervention analyses are also done to estimate the effects of Covid-19 in 2020 and the increase in supply of alternatives for Alberta oil in 2014.

Faculty Mentor: Dr. Cristina Anton

Diagonalization of continuous families of matrices over an interval

By Oscar Martinez Luna

We start by reviewing the general case of diagonalizing a single matrix. A necessary and sufficient condition is that the algebraic multiplicity coincides with the geometric multiplicity for each eignenvalue. We then consider the case where the case were we have a continuous family of matrices over an interval. In this presentation, we will study when such a family can be diagonalized. The primary reference of this topic is a result from Grove and Pedersen.

Faculty Mentor: Dr. Cristian Ivanescu

Generating Functions Related to the Fibonacci Substitution

By Aisling Pouti

Properties of generating functions for the one-sided Fibonacci Substitution Tiling are shown to exist, giving a new characterization of the Fibonacci Substitution.

Faculty Mentors: Dr. Christopher Ramsey & Dr. Nicolae Strungaru

Time Series Analysis of USD/CAD Exchange Rate

By Joyce Wu

The exchange rate of Canadian dollars was closely bound up with the US dollars for the past decades. The last time that the Canadian dollar was worth more than the US dollar was in July 2011. It then experienced its fastest decline in modern-day history as commodity prices rapidly deteriorated. We use time series analysis to study the variation of CAD/USD exchange rate since 2010. We fit an ARIMA model and analyze how different economic and social policies in both countries affect the exchange rate.

Faculty Mentor: Dr. Cristina Anton

Music

Quaesitum Emporium - No. 1: A Music Composition and Orchestration Project

By Charise Eryka Delson

Quaesitum Emporium revolves around an original storyline about a mystical emporium that offers one's quaesitum–something one seeks for–in the form of a magic potion. Inspired by the idea that music has the power to affect one's state of mind, this creative project aims to create a series of music compositions to serve as the story characters' means to achieve metanoia or change of heart. Through the lens of the composer, the project approaches this objective by developing and manipulating music elements to express the emotions that are relevant to the story.

As the first in the series of compositions for Quaesitum Emporium, No. 1 focuses on the story of an adolescent boy who has lost his sense of wonder. Dreaming in his sleep, he stumbles upon

the Quaesitum Emporium where he is offered a potion that will help him see things in a new light, eventually granting him a renewed sense of wonder and an appreciative outlook in life.

Faculty Mentor: Dr. Allan Gilliland

Nursing

Impact of Content Reinforcement of Body Tissues on Knowledge Retention in Nursing Students

By Carmen Diaz

The study of human anatomy and physiology is critical in the BScN program to ensure the competency of students within theory and clinical practice. Despite this acquisition and retention of these fundamental concepts within nursing and other health-related programs have shown to be concerningly low. Numerous studies have shown a dramatic decline in retention over time as medical students lose up to 33% of their anatomical knowledge within the first year of acquisition and 50% by the second year. Additionally, many nursing students regard these courses as content-heavy, difficult, and anxiety-inducing, which further provide barriers to acquisition and application. Educational deficits and a lack of knowledge retention in these subjects can have severe consequences including nursing errors, compromised patient care, and poor health-related outcomes for patients. In order to promote the safe and accurate transfer of this core knowledge, this study will investigate how interventional strategies such as content reinforcement and student participation impact retention.

Faculty Mentors: Dr. Raj Narnaware & Melanie Neumeier

BMI and Labour: How does obesity in pregnancy affect intrapartum outcomes for pregnant patients?

By Karissa Goulding, Samantha Walker, & Helena Popiel

A significant number of Canadians are considered obese or overweight; however, there is minimal accessible research which describes the impact that obesity has on labour and delivery. Our group members conducted a thorough literature review to investigate how obesity in pregnancy affects intrapartum outcomes for pregnant patients. Using CINAHL and EBSCO, a boolean search was conducted, using keywords including pregnancy, obesity, C-section, labour, postpartum hemorrhage, respiratory, and similar terms. We limited the search results to those with a publishing date from 2010-2022 and from peer-reviewed journals. Twelve research articles were utilized. Research analysis found that obesity during pregnancy is associated with an increased risk of preterm birth, cesarean sections, intrapartum hypertension, and hypoventilation syndrome. It is concluded that maternal obesity is correlated with an increased risk of adverse health outcomes during the intrapartum period. Because of this high risk for complications, pregnant patients who are obese should be considered high-risk pregnancies. Further research should be conducted to research the effect of gestational weight gain on intrapartum outcomes for pregnant patients.

Faculty Mentor: Hanneke Croxen

Ethical Dilemmas and Considerations for Nurses During the MAID Process: A Literature Review

By Kaitlyn Hoyer

This literature review aims to investigate the ethical dilemmas nurses face following the legalization of Medical Assistance in Dying (MAID) in Canada and identifies recommendations to mitigate moral distress felt within the nursing community. The CINAHL database was used to conduct a search for primary studies inclusive of MAID relating to the ethics within nursing and published since 2018. From the search results, three peer-reviewed articles were used to compare and contrast the ethical dilemmas that have arised from MAID within the nursing community. A vast majority of the moral conflicts presented are rectifiable and have occurred due to misinformation, lack of adequate education, distress caused by misunderstandings and judgment, and a lack of collegial support. To mitigate these moral tensions, it is recommended that education and training on MAID be implemented, as well as opening up conversations about ethics and MAID to help ensure nurses feel supported emotionally and professionally throughout the MAID process.

Faculty Mentor: Dr. Emilene Reisdorfer

Adverse Childhood Experiences (ACEs) as a Predictor of Homelessness in Mothers: A Narrative Review

By Ashley Kohler & Nicole Pylypchuk

Increasingly, research is conducted focusing on mothers and families experiencing homelessness. Mothers experiencing homelessness present as a uniquely vulnerable population. Current research tends to focus on the immediate factors causing homelessness like loss of employment, intimate partner violence, and other economic pressures. The aim of this integrative review was to analyze what research is currently available regarding the lifelong experiences that lead mothers into homelessness. The focus is on the predictability of adverse childhood experiences (ACEs) as a contributing factor of homelessness during adulthood. After the initial search on CINAHL, PsycINFO, and SocINDEX databases, 303 studies were retrieved, and 9 of those studies were included in this project after further screening. These studies were analyzed for repeating patterns, similarities, and differences. The findings lay groundwork for future research in nursing and interdisciplinary health professions. Future directions should consider early nursing intervention in childhood as a preventative measure of family homelessness. Additionally, knowing that ACEs are a predictor of homelessness could assist nurses in tailoring trauma informed treatment when working with homeless families.

Faculty Mentor: Dr. Emilene Reisdorfer

Art Therapy as Self Care

By Lena Nguyen

Art therapy as a psychotherapeutic tool enables individuals to explore and develop an understanding of their emotions, thoughts, and behaviours while utilizing various forms of creative expression. Various art forms, including painting, sculpture, and music, contribute to these creative expressions, which assist people in expressing themselves and addressing emotional and psychological issues. Individuals can use art therapy as a valuable and effective tool to communicate in non-verbal ways that may be difficult to express verbally. Moreover, this tool is effective for various individuals with varying mental health conditions, regardless of their background. Additionally, making art offers an opportunity for individuals to experience a sense of accomplishment, which may boost their self-esteem and encourage new coping mechanisms. As an example, Adrian Hill (a British artist) used art as a form of therapy to cope with his tuberculosis in the 1940s, drawing physical objects that provided him comfort and satisfaction. As a result, Hill expressed that he coped more effectively with his depreciating mental health and negative health conditions. Thus, improving his overall mood and well-being through the form of art. Historically, art therapy has been found to have significant and positive effects on mental health and overall well-being. Overall, I hope that through poster, I can provide a pros & cons associated with art therapy in the context of mental health; this includes but is not limited to anxiety and depression.

Faculty Mentor: Meredith Porter

Physiological Knowledge Retention in Second-Year Bachelor of Science & Psychiatric Nursing Students

By Richa Patel

There is growing concern that nursing, medical and allied health students do not retain enough bioscience knowledge to apply it confidently and successfully in future nursing years and clinical (Doomernik et al., 2017). Numerous evidence now shows that knowledge retention is impacted by many factors, including admission criteria, teaching hours (Narnaware, Y. 2021), age, sex, ethnicity, prior knowledge of science/biology, a gap between high school and university, and health care discipline (Narnaware, Y. 2021). Understanding that discipline choice potentially impacts knowledge retention, this study aimed to determine the overall difference in physiological knowledge retention between second-year BScN and psychiatric nursing program students. The mean score of questions from all organ systems in year one was 81.16 ± 10.6 (SD). Comparing that score to matched test items in year two, there is a significant decrease in the overall mean score from 81.17 + 10.6 (SD) to 57.86 ± 11.8 (SD) ($P<0.01$) in BScN students and 50.00 + 6.06 (SD) ($P<0.001$) in psychiatric nursing students. Compared to year 1, organ-specific knowledge retention levels in the second year varied between BScN and psychiatric nursing students and will be discussed in the poster. Overall, the second-year BScN students had better knowledge retention than psychiatric nursing students. This study will help to target more robust interventional strategies to improve knowledge retention in psychiatric nursing students.

Faculty Mentors: Dr. Raj Narnaware & Melanie Neumeier

Third-Year Nursing Student's Physiological Knowledge Retention

By Prabal Sharma

There is a growing concern that medical, allied health & nursing students struggle to retain & apply physiological knowledge in the subsequent years of their disciplines (Narnaware & Neumeier, 2020). However, physiological knowledge retention has not been studied as extensively as anatomical knowledge retention in healthcare, with very few studies focusing on nursing students (Aari et al., 2004). The present study evaluates physiological knowledge retention in third-year nursing students. Students were quizzed on ten major organ systems using an online platform, Kahoot (Kahoot, Inc. Oslo, Norway). The results show that the mean class average in the first year was 64.9 ± 10.5 (±SD), which significantly ($P<0.05$) decreased to 50.95 ± 9.2 (±SD) in the third year. This equates to a knowledge retention rate of 88.1% or 11.9% knowledge loss within three years. Organ-specific knowledge retention was the highest for inflammation (100%), respiratory physiology (99.10%), and vascular physiology (95.01%), followed by blood (89.16%), digestive physiology (86.28%), endocrinology (83.76%), defences (82.50%) and renal physiology (82.19%). Retention was comparatively lower for fluid and electrolyte balance (79.36%) and reproductive physiology (77.54%). Although organ-specific knowledge retention was found, this study identifies the potential gaps in knowledge retention, which helps develop an effective and robust interventional strategy to improve knowledge retention in nursing students.

Faculty Mentors: Dr. Raj Narnaware & Melanie Neumeier

The influence of social media on the alcohol consumption of mothers of children less than or equal to 18 years of age: a scoping review of the literature

By Inder Singh

Problematic alcohol consumption is common in many countries, where alcohol consumption is commonly interpreted as a fun and leisurely activity for mothers to engage in to cope with with challenges associated with motherhood. However, a significant amount of social media content promotes maternal drinking habits, which is speculated to increase maternal alcohol consumption worldwide. This scoping review investigated social media content aimed towards mothers of children and teenagers younger than eighteen. The databases PsycINFO, CINAHL, SocINDEX, Medline, and Academic Search Complete were analyzed for evidence of social media influencers on motherhood alcohol consumption. Results show that factors related to alcohol consumption in motherhood include community and social support, coping and mental health, motherhood expectations and identity, alcohol consumption, marketing strategies, everyday issues, and social media influence. Thus, the current literature reveals the shared social media content that normalizes maternal drinking behaviors. Future studies should investigate long-term impacts of alcohol consumption during motherhood and sociocultural and health implications related to women's alcohol consumption.

Faculty Mentors: Dr. Emilene Reisdorfer, Dr. Maryam Nesari, Dr. Kari Krell, Sharon Johnston, Randi Ziorio Dunlop, Andrea Chute, & Dr. Fernanda dos Santos Nogueira de Goes

Community Gardens and Urban Agriculture: Healthy Environment, Healthy Citizens

By Ashley Stoltz

Studies are showing that urban community gardening can improve people's psychological and physiological health in myriad ways. Community gardens increase social capital, provide opportunities for altruism, and create accessible and sustainable food sources in urban environments. The purpose of this study was to explore the mental, social, and physical health benefits of participation in an urban community garden in Edmonton, Canada. A focused ethnography was conducted with surveys and semi-structured interviews. Surveys were sent to volunteers and customers of the Green and Gold Garden (GGG). This was followed by focus group interviews with 8 volunteers and 4 customers. The interview format comprised open-ended questions that encouraged participants to share their perceptions of the health and well-being benefits from being at the GGG. Data was coded via inductive coding, and subsequently categorized into themes via an iterative, reflective process. Four health-related themes were generated from thematic analysis: physical health, social health, mental/emotional health, and connection to the global community. Spending time at the GGG improved the respondents' mental health, even during the COVID-19 pandemic, as they reported feelings of altruism, serenity, and connection with nature. Their social health was improved through gathering with other garden members in a sheltered urban green space within the city limits. This study supports the idea that participation in an urban community garden confers health benefits and engenders a greater awareness of, and appreciation for, the local environment and expands one's scope of care to incorporate planetary health.

Faculty Mentor: Dr. Cynthia Zutter

The Impact of Content Reinforcement on Anatomical Knowledge Retention of Cardiovascular and Lymphatic Systems in Nursing Students

By Kiara Ukrainetz

Numerous studies have demonstrated that medical and allied health students experience difficulty transferring the anatomical knowledge they gain in the first year to the subsequent years of their disciplines (Narnaware and Neumeier, 2020, Narnaware, Y. 2021a). However, few studies focus on nursing students (Narnaware and Neumeier, 2019a,b). As an intervention strategy, and an attempt to improve long-term knowledge retention, the present study demonstrates that repeated evaluation of the cardiovascular and lymphatic systems over eight weeks can significantly increase anatomical knowledge retention. The retention measure is compared to the evaluation of the same organ systems in the first week. Statistical significance was set at $P \leq 0.05$, where week three for the lymphatic system (+16.8%) and week four for the cardiovascular system (+22.5%) both saw the most significant increase in retention among nursing students. This increase likely occurred because of the approaching midterm in week four of this study. However, after the midterm, the retention for the cardiovascular system

dropped to (+14.15) while the lymphatic system dropped to (+4.6%). However, despite these fluctuations that occurred, our results which always remained positive throughout the study, show that content reinforcement can be an effective interventional strategy to improve long-term anatomical knowledge retention in nursing students.

Faculty Mentors: Dr. Raj Narnaware & Melanie Neumeier

Youth-engaged research in a pediatric mental health care trial

By Christine Wincentaylo

A pan-Canadian pediatric mental healthcare trial aims to determine if an acute mental healthcare bundle, compared to standard care, improves wellbeing at 30 days post-visit in children/youth seeking Emergency Department (ED) care. Since youth and their families are the ones affected by trial objectives, a youth advisory committee (YAC) (n=6 Advisors) with lived experience was formed. The YAC meets quarterly to collaborate and lead trial-related activities, of which 2 engagement activities are described below.

First, following discussions of ways to improve trial participants' survey completion rates, Advisors ideated creative retention strategies that led to developing a 3-minute video with the message of "why participating in research matters". The video will be embedded at the start of the survey in REDCap, to engage trial participants in a more evocative way. Survey completion rates will be monitored to determine if embedding the video increased completion rates.

Second, the YAC has opportunities to propose seed projects in acute mental healthcare (with mentorship) that aligns with their interests. One Advisor chose to engage with an Elder to determine the gaps in mental healthcare in EDs for Indigenous communities. The Advisor's personal narrative outlining considerations for cultural relevance that arose in conversation with the Elder will inform the seed project proposal for executive research team review.

Engagement experience is evaluated using a validated measure (PPEET©). Baseline evaluation data indicate that most Advisors' are familiar with their role and expectations, and anticipate that more meaningful engagement will occur as the trial progresses.

Faculty Mentor: Jananee Rasiah

Impact of Content Reinforcement of Muscular and Skeletal Systems on Knowledge Retention in Nursing Students

By Amber Zyla

Numerous studies have expressed concern over nursing students' ability to retain the anatomical knowledge they gain in the first year to the subsequent years of nursing (Narnaware, Y. 2021). The present study assesses the impact of content reinforcement on the musculoskeletal systems over eight weeks. Results show that compared to week 1, repeating knowledge of the musculoskeletal systems resulted in organ- and week- specific retention over eight weeks of these systems. The skeletal system was seen to have two dramatic increases in

knowledge retention, week 2 (+20%) and week 6 (+28.5), which can be the result of midterms and quizzes of the skeletal system around these times. The muscular system, however, was seen to have only three weeks of positive knowledge retention, with week 4 having a knowledge retention loss of 20.9%. This may be the result of other exams on varying body systems happening around this time, which leads to students studying other systems over the muscular system. This study demonstrates that content reinforcement should be used as one of the interventional strategies to improve knowledge retention in nursing students.

Faculty Mentors: Dr. Raj Narnaware & Melanie Neumeier

Organizational Behaviour, Human Resources Management, and Management

Investigating Black Women's Work Experiences in Canada: An Undergraduate Student's Perspective

By Ini Amao

Interpersonal mistreatment at the workplace is an issue that is talked about a lot and has caught the attention of many researchers over time. But another issue that often goes unnoticed is the mistreatment of visible minorities, especially Black Women, in the work-place. Even fewer studies explore the connection between mistreatment and its effects on mental health. This project investigates black women's work experiences in Canada with a particular focus on their experiences of interpersonal mistreatment at work. Interpersonal mistreatment at the workplace is an ongoing research area where scholars continue to explore the antecedents and outcomes of mistreatment at work. In this study, I share my experience on conducting research to explore if Black women experience interpersonal mistreatment in Canada. I present my experience in a narrative form, from conducting interviews, literature reviews, contacting participants, to transcribing interviews. I will express my views on the matter as a black woman and an undergraduate student in Canada.

Faculty Mentor: Dr. Theresa Chika-James

Preventative Health Methodology in the Canadian Market

By Joshua Bell

Within Canada, the relevant sectors (body evaluation, nutrition, and exercise) tend to exhibit a disconnect to an extent without a focus on preventive tests and connected prevention strategies due to the segregation of product/service offerings in related industries and cultural normalities associated with Canada's public health care system (i.e. a family doctor may only prescribe further testing such as an ultrasound or gastrointestinal surgery if a patient is perceived to carry characteristics of an appropriate diagnosis).

While this methodology safeguards the Canadian health care system and prevents strain on the system, it is shown to deter the opportunity, both in private and public clinical settings, to carry and optimize preventive testing measures in place for Canadians to reduce unhealthy activities and related dysfunctional behaviours.

With this in mind, Avaliare, a Brazillian clinic based out of the municipality of Margina, in the state of Parana, has a clinical model that implements preventative health methodology through utilizing body evaluation technology in order to build nutrition and exercise strategies for clients and their respective goals.

Within the qualitative research paper that Dr. Evandro Bocatto and I have been writing, the analysis and disruptive capability of implementing such a model in the gym/health/fitness clubs industry; e-health; private health (private clinics), public health, priority populations (eating disorder patient effectiveness), corporate wellness services, and weight loss services within Canada are discussed.

Faculty Mentor: Dr. Evandro Bocatto

Can Geothermal Heat Projects and Systems help stimulate economic development in rural and small-town Alberta?

By Patrick Jean

Small towns and rural communities in Alberta are being “hollowed out” due to the decades-long trend of farm consolidation and decreasing oil and gas demand. This paper examines whether geothermal heat projects and systems can help small towns and rural communities of less than 10,000 people stimulate economic development. Eleven industry advocates, geothermal and geo-exchange service providers, academics, and policy and regulatory experts were interviewed in the fall of 2022 to help understand what opportunities and benefits exist and what obstacles are faced by those who want to capitalize on those opportunities and benefits. The study indicates several opportunities to develop and leverage geothermal heat projects across rural and small-town Alberta. Smaller geo-exchange energy systems have a limited impact on the local economy but can be developed and installed in communities across the province. Although more limited by location, larger geothermal district energy projects have the opportunity to provide a litany of ancillary benefits that can have long-lasting economic impacts on local communities. To leverage these ancillary benefits, communities must shift their mindset from exporting resources to attracting people to live in and visit the community. The findings also suggest that although governments have done some work, more can and should be done to support the industry through policy and financing mechanisms, which are its two most significant obstacles. The research suggests that although Alberta is on the right path to using geothermal heat systems and projects as a tool to help stimulate rural economic development, there is much work to be done by the industry and governments.

Faculty Mentor: Dr. Evandro Bocatto

Physical Sciences

Manufacturing Antimicrobial Silver-Coated Wound Dressings: Chemistry Practicum with Exciton Technologies

By Alyceea Anderson

Antibiotic resistance and the prevalence of superbugs have become a global concern as it is increasing at a rapid rate which threatens our ability to treat common infections and leads to more difficult-to-treat infections1. Exciton Technologies is a manufacturing and research company with a focus on higher oxidative state silver as a cost-effective solution to prevent infection and the spread of disease.

As part of the Chemistry Internship Practicum (CHEM 497), from Jan 2023-April 2023, I interned at Exciton Technologies. My position at Exciton was as a Quality Control analyst. In this presentation, I will highlight my work as a QC analyst, which includes: work in quality control laboratory functions, which involved performing standard analytical laboratory work following standard operating procedures, handling samples and running tests, documenting, reporting, and interpreting results, and maintaining the cleanliness and safety of the lab.

I will also highlight the technical skills that I've acquired, which includes: calibrating and verifying laboratory instruments, techniques to properly use these instruments and troubleshoot these instruments, how to perform a variety of analytical tests and interpret the results from these tests, the mathematics and statistics necessary to complete reports and update control charts, good documentation skills and record keeping, how to make workplace labels, how to properly use spill kits, proper disposal of waste, how to properly store chemicals and solutions.

The professional skills that I've developed include self-management, time management, communication skills (verbal and written), teamworking, planning and organization, and eagerness to learn and improve.

1. World Health Organization https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance (accessed March 6, 2023)

Faculty Mentor: Dr. Samuel Mugo

Characterization of Microplastics in industrial, highway, residential, and natural storm water ponds in Edmonton, Alberta, Canada

By Abby Beka

Microplastics (plastic particles less than 5 mm in size) are among the primary pollutants found in aquatic environments, and their detrimental effects on marine organisms are of increasing environmental concern. Urban and highway stormwater runoff are important pathways for microplastics to migrate from land use to aquatic environments. However, studies characterising microplastic composition within stormwater ponds remain limited, particularly in Canada. This study adds to this knowledge gap by documenting the concentration, polymer composition, and size of microplastics polluting urban and highway stormwater ponds in Edmonton and investigates the relationship between composition and concentration to land use.

Approximately 1000 litres of water were pumped from 9 stormwater sites that were categorised as either industrial, highway, residential or natural. Microplastics were extracted using density separation and wet peroxide oxidation, and analyzed via Raman microspectroscopy. Microplastics were found in all stormwater samples, with highway and industrial sites documenting the highest concentrations. The dominant polymer was polyethylene, and most

microplastics were fibrous and < 200 µm. This study provides evidence that urban runoff is a significant pathway for microplastics to enter aquatic ecosystems and suggests a relationship between landuse and microplastic composition

Faculty Mentor: Dr. Matthew Ross

Synthesis of Diphenyl Hydrogels for Pharmaceutical Applications: Chemistry Practicum with CNRC-NRC

By Benjamin Bekkema

Hydrogels are self-assembling nanofibers with the potential for myriad applications such as; drug-delivery, cell scaffolding, 3-D printing, and many more. As part of the Chemistry Internship Practicum (CHEM 497), from Jan 2023-April 2023, I interned at CNRC-NRC. In my presentation, I will highlight my project at the NRC focused on synthesizing diphenyl hydrogels. Diphenyl hydrogel consists of stimulus-responsive capping groups attached to two phenylalanine amino acids by a linking group. For my project, I focused on synthesizing a variety of hydrogels and linking groups to see if there were differences in characteristics between the gels. I will highlight how in my internship, I was required to refine my skills in organic chemistry to produce accurate and effective results. Additionally, throughout my internship, I learned various professional skills. I had to have good; time management, project planning, creating deadlines, independence, and careful time management.

Faculty Mentor: Dr. Samuel Mugo

MacEwanCYU: Exploring STEM Outreach Opportunities within Community Engaged Research

By Sara Benny & Dawson Laycock

STEM outreach refers to the efforts to promote and encourage engagement in science, technology, engineering, and mathematics (STEM) among students, especially those who are underrepresented in these fields. STEM outreach aims to inspire and motivate young people to pursue careers in STEM fields and to promote the importance of STEM education.

The MacEwanCYU (Children's and Youth University) project is a pilot program that aims to partner STEM outreach opportunities with community engaged research. Many STEM outreach programs that bring science programs into classrooms of students in the K-12 system, however these programs do not address the barriers that students may face when accessing post-secondary education. Through this project we aim to examine barriers that students face when pursuing post-secondary education.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

OER: Providing Students with an Interactive, Engaging Learning Experience

By Evan Bourassa

Open Education Resources (OER) are educational materials that are freely available for use, reuse, and adaptation. They have been shown to improve educational outcomes and reduce disparities (Feldman-Maggor et al., 2016), and can also be used to support teachers in creating effective and engaging learning experiences for their students (Harvey et al., 2022). H5P, a HTML5 package program, was used to digitize key concepts covered in introductory chemistry. By digitizing chemistry materials, educators can provide students with more dynamic and interactive learning experiences, increasing student engagement and understanding of complex chemistry concepts (Feldman-Maggor et al., 2016). Additionally, OER study tools have been developed to help students further their study without the financial burden of purchasing closed-source resources. These interactive modules, created in this project, provide students with study materials that can be accessed remotely, with laptops, cellphones, or tablets. 36 individual modules/tools have been created, including interactive presentations, memory-matching quizzes, question sets, informative hotspot images, etc. These interactive modules provide students with an engaging study process and accompanying each study tool is a question-answer based module, directing students to the areas that require more study. With the increasing costs of closed-source learning materials, the creation and variety of open educational resources continues to become increasingly valuable. The digitization of introductory chemistry courses also aims to exemplify the ease at which these materials can be created, used, and shared among educators and students looking for sustainable learning materials to help further their education or practice.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Development of Dopamine-Coated Quartz Tuning Fork: Chemistry Practicum with Fourien Inc.

By Danielle Dias & Matthew Schiiler

Analytical instruments are used in a variety of fields such as pharmaceutical, and cosmetic industries to maintain and facilitate good manufacturing practices. A common issue with analytics is that some instruments require large amounts of expensive or not easily accessible compounds, such as blood samples or cosmetics that contain high grade ingredients. As a part of my Chemistry Internship Practicum (CHEM 497), from Jan 2023-April 2023, I interned at Fourien Inc. Their nanoscale instruments alleviate this issue and reduce waste. The Quester is an instrument Fourien developed, that is useful for measuring density, concentration, and other properties of liquids through vibrations and computer program that plots resonance frequencies. It allows for testing to be conducted using a droplet on a small sensor or Quartz Tuning Fork (QTF). In the poster presentation, I will showcase my internship work which involved; i) optimizing multiple QTFs by coating them in dopamine alongside my co-intern; ii) conducting research in dip-coating methods, and efficient yet cost-effective ways to prevent oxidation. Through rigorous rounds of the scientific method, we obtained an experimental procedure for coating dopamine on a quartz tuning fork. Our linear results are in the process of being replicated to provide insight for the scientific community. Throughout the internship I have

applied my degree knowledge and practical lab skills to problem solve, communicate, experiment, and summarize data in a professional and self-motivated manner. Ultimately contributing to the field of research and development. These technical and professional skills will be illustrated in the poster presentation.

Faculty Mentor: Dr. Samuel Mugo

Screening of Invasive Plant Extracts for the Inhibition of β-Glucosidase Activity

By Brooklyn Falebrenza

TLC bioautography is a technique commonly used to detect bioactive substances within a compound. More specifically, TLC bioautography can be used to qualitatively detect changes in enzyme activity in response to inhibitors present in different plant extracts. β-glucosidase is an enzyme that cleaves carbohydrates; excess amounts of this enzyme can lead to diseases such as diabetes and cancer. This study aims to find a natural inhibitor of β-glucosidase from plant extracts of invasive weed species. β-glucosidase dissolved in sodium acetate buffer will be sprayed onto the TLC plate, followed by a 1:4 ratio of 2-naphthyl-β-D-glucopyranoside and a solution of Fast Blue B salt. The plant extracts will be separated by performing TLC chromatography, followed by spraying the TLC plate with the enzyme, substrate and Fast Blue B salt mixture. The plate will be incubated for 20 minutes at 37oC with relative humidity. Inhibitor activity will be identified by the presence of white spots on a purple/blue background. Once inhibition spots have been found, the next step is to isolate the compounds in the plant extracts inhibiting the enzyme activity. The significance of this study is to help contribute to potential drug research and find natural alternative sources of potential inhibitors for these common diseases, such as cancer and diabetes.

Faculty Mentor: Dr. Tina Bott

Synthesis and evaluation of molecular hydrogels: Chemistry Practicum with the Nanotechnology research center

By Dylan Fillier

The broad application of hydrogels makes their commercial, pharmaceutical, and industrial markets a multi-billion dollar industry, that with advancements can change our world for the better. The Nanotechnology research center (NRC) is a government-owned and operated institution focusing on many projects one of which is synthesizing and evaluating hydro gelator compounds. As a chemistry internship practicum student (CHEM 497) from Jan 2023-April 2023 I have been working as an Intern at the NRC. I will present my internship work on the synthesis of 5 caping groups and dipeptides which were linked together via elimination reactions to form hydrogelators.

I will also showcase the technical and practical skills I acquired during the internship which will be integral to my career in chemistry. For example, in terms of technical skills, I have refined many foundational techniques needed for successful organic synthesis. Additionally, I have

spent a great deal of time learning to troubleshoot reactions and optimizing procedures which have sharpened my critical thinking skills and chemistry knowledge. Moreover, I have developed many professional skills essential to any prosperous career. Among these skills are networking, professional and scientific communication, and industry-relevant professionalism. Therefore this practicum has been a catalyst for my professional and scientific growth. I will highlight my internship journey in the presentation.

Faculty Mentor: Dr. Samuel Mugo

Investigating Microplastic Ingestion in Ringed Seals (Pusa hispida) from the Eastern Canadian Arctic

By Haylee Hatton

Anthropogenic pollution in the form of microplastics is present across the world's oceans, including the Arctic. Ringed seals (Pusa hispida) play an essential role in Arctic marine food webs as predators for fish and invertebrates and prey for polar bears and humans. Their position in the food web may lead to the ingestion and accumulation of microplastics within their stomach, which poses risks to their overall health. However, limited data exist on the accumulation of microplastic within seal species from the Canadian Arctic. To better understand the extent of microplastic accumulation in ringed seals, thirty-five seal stomachs were collected in collaboration with Inuit hunters and trappers from Arviat and Resolute Bay, Nunavut, Canada. Stomachs were dissected, and contents passed through a series of sieves to fractionate contents based on size (< 53 µm - 1000 µm). The material in each sieve was digested for up to seven days using 20% potassium hydroxide, and anthropogenic particles were isolated using vacuum filtration. Optical microscopy was utilized to count and categorize plastics based on color and morphology, and polymer type was determined by Raman microspectroscopy. Preliminary results (n=6) reveal that ringed seals from both study sites ingest microfibers and micro-fragments less than <1000 µm. Confirmed microplastics were yellow or black and identified as polypropylene, polycarbonate, or polyester. This data will provide baseline information for future plastic pollution monitoring programs in the circumpolar arctic.

Faculty Mentor: Dr. Matthew Ross

Intestinal alkaline phosphatase bioautographic analysis of plant extracts

By Vincent Johnston

Alkaline phosphatases are key enzymes in human physiology; they catalyze dephosphorylation reactions that are important in functions such as development of skeletal structure and metabolism. They are increasingly studied as targets for pharmacologic inhibition and thus molecules that inhibit Intestinal Alkaline Phosphatase (IAP) are becoming increasingly relevant. TLC bioautography is a low cost, relatively fast way of coupling complex mixture separation and qualitative bioassay analysis. Screening of complex mixtures involved applying a target mixture to the TLC plate, separating the mixture into components, and then spraying both enzyme and substrate onto a TLC plate. To initially test reaction conditions, napthyl phosphate with fast blue

b are used as substrates to yield a blue azide product, and inhibition can therefore be qualitatively analyzed by a lack of colour on the TLC plate. A follow up experiment will subsequently measure IAP inhibition in various plant extracts via TLC bioautography. Extract samples displaying inhibition will be subsequently separated via TLC to examine the nature of inhibitors. Further investigation will involve examining the structural nature of these inhibitors.

Faculty Mentor: Dr. Tina Bott

Microplastic Ingestion in Arctic Zooplankton Species

By Brooke Labine & Anne Munezero

Plastic pollution serves a threat to marine ecosystems as it poses a risk for entanglement, causes destruction of natural habitats, and can cause adverse effects when ingested by organisms. Recently the focus has been on microplastic pollutants, which are pieces of plastic debris ranging from 1 µm to 5 mm and not visible to the naked eye. Microplastics are ingested by zooplankton, which represent the base of the arctic food web and therefore serve an important species to monitor microplastic uptake. This project investigates microplastic levels in several species of marine zooplankton collected from various locations within the Canadian Arctic. We predict microplastics such as polyethylene and other synthetic polymers will be present within bulk and five individual species of Arctic zooplankton. The samples were rinsed with filtered water to ensure microplastics on the surface of the specimens were removed in order to accurately examine ingested material. After rinsing, the zooplankton samples were digested using 20% KOH on a heating block with magnetic stirrers for 24- 48 hours to break down tissue and the exoskeleton. Samples were filtered using a vacuum filtration setup and rinsed with ethanol to remove remaining KOH and breakdown lipids. Microplastics will be characterized based on their color, size, and morphology, and will undergo Raman Spectroscopy, which is used for microplastic identification. The importance of identifying ingested microplastics within zooplankton is to determine how prevalent microplastics are within marine habitats and this work will also serve to establish baseline data for further monitoring in the region.

Faculty Mentor: Dr. Matthew Ross

Redefining detection limits of the baker-Nunn telescope

By Avery Lund

The goal of my project is to define the detection limits of the RAO.

Faculty Mentor: Dr. Stefan Cartledge

Synthesis and Evaluation of Switchable Hydrophilicity Solvents

By Zafar Mamadaliev

This work will produce and test a range of chemicals that have potential to be switchable hydrophilicity solvents, and development of novel purification techniques . Produced chemicals will be tested for switchability, those that show SHS properties will be used as catalysts in a variety of chemicals reaction systems as catalysts. Further, through development of a novel SHS catalysts and purification methods it will increase their use both in the laboratory and industrially.

Faculty Mentor: Dr. Roland Lee

Are there microplastics in the stomachs of ringed seals (Pusa hispida) from Arviat, Nunavut?

By Brynne Radford

Microplastics, any plastic <5mm in size, have increased substantially in our water system within the last century. Microplastics have the ability to enter into the food chain from lower trophic level organisms before bioaccumulating to higher trophic level organisms, such as ringed-seals. When ingested in high concentrations, microplastics can have several toxic effects, for example, damage to DNA infertility, and disruption of the nervous system. We investigated the accumulation of microplastics within the stomachs of 10 ringed seals from Arviat, Nunavut to determine if microplastics are accumulating in higher trophic level organisms and traveling to remote Arctic waters. Stomach contents from 40 seals were removed anddigested in 20% KOH for 7 days, followed by vacuum filtration onto filters. Using a stereomicroscope, microplastics were individually removed from the isolated stomach material, characterized by their size and morphological traits, and the polymer type of each microplastic determined using Raman spectroscopy. everal polyethylene particles were identified within the 1000µm and 500µm size fraction of the isolated material, and we predict more polymer types are present within lower sizes. These findings will allow us to determine that microplastics are bioaccumulating across higher trophic level organisms, demonstrating the severity of plastic pollution within the earth's water system. This data will serve as a baseline for future monitoring studies regarding bioaccumulation of microplastics.

Faculty Mentor: Dr. Matthew Ross & Dr. David Locky

Oil spill detection using a handheld fluorometer: Chemistry Practicum with CanmetENERGY

By Cedrick Ramos

A handheld fluorometer is an analytical device that uses a single-wavelength light source that excites a sample, which causes the sample to release a fluorescent signal with a certain wavelength. This type of equipment can be used in the field and has been applied to environmental research. It is cost-effective compared to other types of fluorometers. Specifically for this research, the fluorometer was used as part of the oil spill assessment by quantifying the oil concentration in water via the fluorescence of the aromatic compounds in the oil. This research project is part of my internship at CanmetENERGY as a laboratory assistant from

January to April 2023. CanmetENERGY performs research and development focused on reducing the environmental impacts of natural resource extraction. The main objective for my internship was to optimize the sample preparation method for fluorescence measurements of pure PAH standard, VLSFO, and diesel. I will present my internship work involving testing factors such as shaking time, solvent: seawater ratio, and the type of solvent on the extraction efficiency of dissolved oil from water. We will determine the best extraction method based on our calculated percent recovery (85-115%(100+/-15%)). During my time at the internship, I refined my analytical skills by preparing standard solutions and calibrating the fluorometer by finding the concentration range with linear regression. I will also highlight, the professional skills learned in my internship.

Faculty Mentor: Dr. Samuel Mugo

Laboratory Design: Multi-method Analysis of Metal Adsorption to Diatomite

By Cedrick Ramos

Heavy metal contamination in aquatic systems has been considered an environmental threat to humans and other living organisms. An increasing interest in research and development towards removing these pollutants has led to the development of a cost-effective and high-efficiency method. This study aims to determine the interaction between metals and diatomite surfaces. Cadmium (Cd) and gold (Au) metal in solution was used to investigate how much of these metals were adsorb by diatoms or precipitated in solution through batch adsorption experiment. The experiment was conducted by setting up different concentrations of Au and Cd solutions in pH of 2 to 10. A surface study of diatomite was done through potentiometric titration by determining the point of zero charges (pzc). In addition, potentiometric titration informs at which pH of the diatomite surface is protonated and deprotonated. The amount of Cd and Au removed from solution was quantified by Inductively Couples Plasma Optical Emission Spectroscopy (ICP-OES). Fourier Transform Infrared Spectroscopy (FTIR) provides information about the functional group present in the diatomite and how they interact with metal ions. The structure of diatomite and its elemental composition was analyzed using Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectroscopy (EDS). This research project is designed to be taught to undergraduates in the lab for a series of labs in the course Introduction to Biogeochemistry.

Faculty Mentor: Dr. Janice Kenney

Development of New Ionic Exchange Methods: Chemistry Practicum with Sterling Chemicals Ltd

By Jose Ignacio Ramos de la Torre

Development of new and more efficient methods of Ionic Transfer using DLE (Direct Lithium Extraction), aiming to increase the recovery percentage of lithium from oilfield and geothermal brines. Sterling Chemicals Ltd is a chemical company with a strong focus on production of specialty chemicals for the energy and power industries. Sterling has a Laboratory in Edmonton

at the Nanotechnology Research Center at the University of Alberta. As part of the Chemistry Internship Practicum (CHEM 497), from January 2023 to April 2023, I interned at Sterling Chemicals Ltd.

In this presentation I will highlight my experimental work comprising synthesis of an absorbent to perform the DLE, as well as the treatment of samples to determine the effectiveness of the process. The treatment of the samples involves wet chemistry and is corroborated by titration and pH measurement. The creation of the absorbent has basis on ionic exchange, as well as filtration for its extraction and analysis by spectroscopy and FWA (Full Water Analysis).

In the presentation, I will highlight skill I developed in my work environment, including task delegation, effective communication, and lab movement, application of theory, and practical laboratory skills needed to complete technical tasks, such as correct measuring techniques, organization and cleanliness standards, efficient reporting of results, and many others.

Faculty Mentor: Dr. Samuel Mugo

A Brief View of Mine Tailings Leaching and Geological Hydrogen Storage: A Chemistry Internship with CanmetENERGY

By Jaden Schultz

Unsustainable fuel resources and their use has led to problems in energy sources and environmental health. As an attempt to remediate these issues, hydrogen energy and leaching effects are researched. For the Chemistry Internship Practicum (CHEM 497), I interned at CanmetENERGY, a part of National Resources Canada. Our research group under Dr. Nicholas Utting has been conducting research on both the geological storage of hydrogen and the leaching effect of mine tailings. Both projects aim to solve the aforementioned issues caused by modern energy use.

I will present on our past research on geological hydrogen storage, and our work preparing and running tests on water samples to determine the elemental compositions dissolved in them. Substances such as sulfate, nitrate, nitrite, calcium, sodium, carbon, and others will be highlighted. I will also discuss the technical skills gained from this internship, such as consistency when preparing samples and standards, caution when working with dangerous substances, and competent operation of equipment. The most valuable professional skills I have learned from this experience, such as communication and record keeping, will be mentioned as well.

Faculty Mentor: Dr. Samuel Mugo

Investigating The Fate and Biodegradation of Resin and Asphaltenes in water

By Meisha Scott

Alberta is known for having one of the largest oil and natural gas reserves in Canada, making it a large industry. CanmetENERGY Devon is a federal government research centre that focuses

on innovative solutions to reduce the environmental impacts made by the oil and gas industry. As part of the Chemistry Internship Practicum (CHEM 497), from Jan 2023-April 2023, I interned at CanmetENERGY Devon. In this presentation, I will highlight my internship work on investigating the fate and biodegradation of resin and asphaltenes in water. I will highlight the work done on initial testing and preparation of samples as well as method development. Initial testing includes DNA extractions from soil samples, microbial analysis, and testing water samples for different compounds. Developing methods to carry out these tests involved a lot of repetition which allowed me to gain further experience with GLP and reproducibility. As well as learn how to use new instruments and articulate the methods that were developed and present them. My internship journey will be presented.

Faculty Mentor: Dr. Samuel Mugo

Development of Lactate Biosensor: Chemistry Practicum with NRC company

By Tasmina Sheikh

Wearable sensors are extensively studied due to their low-cost, non-invasive, and real time results nature. National Research Centre (NRC) is a government-based research laboratory which focuses on creation of sensors for multiple purposes including the wearable sensors. As a part of the Chemistry Internship Practicum (CHEM 497), from Jan 2023 to April 2023, I interned at NRC. The scope of my internship was synthesis of a biosensor that can detect lactate in sweat. To create the sensor, we modify the surface of the screen printed carbon electrode (SPCE), then we optimize the parameters and finally we would test for the target. This internship has exposed me to a wide range of skill sets including both professional and technical skills. Some of the technical skills I learned through this internship are the use of instruments and detection methods. In terms of professional skills, I learned how to build connections with people who have a background in electrochemistry. On student research day, I would be presenting my project journey, along with the skills I obtained during my internship.

Faculty Mentor: Dr. Samuel Mugo

The Accumulation of Microplastics in Craig Bay, British Columbia

By Helen Tiet

Microplastics originate from large plastic materials degraded by physical, chemical, or biological means. They are transported to marine environments by wind and water before deposition into sediment. Estuaries are microplastic sinks that can provide information about dominant plastic types and microplastic retention in marine environments. Large, heavy microplastics are expected to be deposited closer to their source than smaller particles. Samples were collected from Craig Bay to determine if depositional environments affect microplastic deposition. To determine grain size distributions and dominant grain size, 12.5g of each sample was sifted through various sieves (4000, 2000, 1000, 500, 250, 125, and 63μm, respectively). The amount of organic matter was determined by combusting 30g of each unsorted sample in a muffle furnace. Another portion (25g) of each unsorted sample was used to extract microplastics by

density floatation and enzyme digestion. Microplastics were isolated onto stainless steel filters and underwent Raman spectroscopy to identify the chemical composition. Microplastics were quantified visually within three strips along each filter, and 10% of identified particles underwent Raman spectroscopy. Particles were classified as fiber, film, or fragment. Samples dominated by silt and clay contained the least amount of microplastics, but the most organic matter. Samples that were dominated by fine sand had the most microplastics, but the least organic matter. Polytetrafluoroethylene was found to be the most abundant microplastic among all the samples. The work is part of a new and emerging research area within sedimentology that focuses on the correlation between sediments and microplastics.

Faculty Mentor: Dr. Matthew Ross

The link between supernovae and star births

By Vy Tran

"May the force be with..." an interstellar cloud, made of gas and dust. The release of the shockwave from a supernova explosion causes this cloud to collapse, due to its immense gravitational force. Then, a star is born. This model is suggested in the Nebular Hypothesis. In this project, we aim to observe a range of supernova remnants (SNRs) to test how efficient the method is, by examining the interaction between the clouds and the aftermath of a supernova. To achieve our goals, we propose to observe the edge of the expanding shockwave of 10 supernova remnants. We can expect to identify a plethora of newborn stars there and infer whether these areas are ideal for the formation of a star. Based on how many supernova remnants contain newborn stars, we can estimate that the Nebular Hypothesis efficiency is: not efficient (below 3), moderately efficient (from 3 to 6), and highly efficient (from 6 to 10).

Faculty Mentor: Dr. Stefan Cartledge

Observational Air Quality Monitoring in the City of Edmonton: Investigating the Patterns and Presence of Emissions in CO2 Domes

By Robyn Woodrow

Outputs of CO2 emissions can concentrate above a city, creating what is known as a CO2 dome. Due to Edmonton’s isolation within Alberta, it is expected that the emission concentration will be highest near the city centre and will diffuse outward as we move away from the city. This study will examine the severity of Edmonton’s CO2 dome. The discussion will primarily answer if the emission pattern is measurable by location or, if not, secondary hypotheses will attempt to identify what conditional factors disrupt, add, or interact to affect the expected CO2 pattern. This study uses observational air quality monitoring to assess seven locations five kilometres apart from the city centre to the southern outlying areas. Variables include but are not limited to time, wind speed/direction, location, vehicular activity, and AQI (air quality index), an indexed measure of various pollutants and their concentrations. Results may help identify the associations among factors in creating higher emission rates within the City of Edmonton and encourage investigating such conditions to improve local air quality.

Faculty Mentor: John Fedoruk

Lignin depolymerization and methylation in batch

By Robyn Woodrow

This work will look at the use of base catalysts for the single step depolymerization and methylation of lignin. The catalysts will be based traditional strong basses used in lignin depolymerization (NaOH and KOH). Through changes in the reaction solvent from water to methanol in situ methylation of lignin monomers will be assessed. Recent work

on lignin depolymerization indicates that the methylation of the produced monomers may reduce the re-polymerization of monomers in sample work up. This is of high interest as it may greatly affect the direction of the research in biomass conversion.

Faculty Mentor: Dr. Roland Lee

Psychology

An Acceptance and Commitment Therapy Approach to Social and Emotional Learning

By Monisola Badiru

Social and emotional learning is a core aspect of a child's development. The goal of social and emotional learning is to support individuals in developing the skills and attitudes necessary to navigate social and emotional challenges and succeed in school, work, and life. This project focuses on investigating social and emotional learning targets that are integrated into classwide educational programs. Many education programs on the market for teachers attempt to teach children to understand and manage their emotions and behaviours. Due to the increasing levels and concerns for mental health, this project summarizes the possible long-term effects of some early childhood school programs that teach and maintain the very processes that underline mental struggles, such as cognitive defusion. A new way of teaching children about emotions and behaviours is proposed using the philosophy, science and perspective that grounds Acceptance and Commitment Therapy.

Faculty Mentors: Miranda Macauley & Dr. Russ Powell

Language Effects on Emotion Recognition in Hearing Children and Deaf Children with Cochlear Implants

By Monisola Badiru

In an increasingly multicultural society, perception and understanding of emotions expressed by talkers across different languages are important for meaningful and effective social communication. The purpose of this study is to examine language effects on listeners' ability to recognize emotions, specifically in individuals who speak English as their first language. Another

goal is to understand how emotion recognition across languages is impacted by hearing loss in deaf children with cochlear implants (CIs). –. Children will listen to sentences spoken in English and Yorùbá and identify whether the talker is happy, sad, angry, or neutral. Tonal languages such as Yorùbá are characterized by more variance in pitch compared to stress-based languages such as English. Therefore, we predict that children with CIs whose first language is English will have more difficulty recognizing emotions in Yorùbá than in English. This is due to the lack of pitch information transmitted by cochlear implants, which would interfere with their ability to perceive emotion. The findings will have implications in expanding our knowledge about the perception of emotions in different language contexts and may have practical implications for improving the rehabilitative outcomes of young CI users.

Faculty Mentor: Dr. Tara Vongpaisal

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.

Faculty Mentor: Dr. David Watson

A Comparison of Student Achievement Across Pedagogical Modalities

By Erica Bown

Recent research provides evidence that students' active participation in course activities creates stronger connections and enables deeper levels of information processing and learning compared to passive teaching and learning methods (Nurbavliyev et al., 2022). The present study investigated the effect of active learning (i.e., class activities) vs passive learning (i.e., lecture) on academic performance, and whether this effect was influenced by student

characteristics. We hypothesized that students in the active learning group would perform better on multiple choice exam questions than students in the passive learning group. We further hypothesized that students with text anxiety would benefit more from active vs passive learning in terms of exam performance.

Participants were students enrolled in hybrid (with activities) or in-person (lecture-based) PSYC 105 courses at MacEwan University. Our sample size for our analyses related to academic performance included 24 participants, 14 from the active group and 10 from the passive group. Our sample size for our correlational analyses included 97 participants. Participants filled out questionnaires assessing personality, self-regulation, procrastination, and test anxiety. They attended their regular Psychology course throughout the semester and completed their course exams. Our results show that students in the active learning condition performed better on standardized multiple choice questions than students in the passive learning condition. We also found a moderately positive relationship between procrastination and test anxiety, and neuroticism and test anxiety. These results illustrate the potential benefits of universities offering more opportunities for active learning to help improve students' academic performance.

Faculty Mentor: Dr. Michele Moscicki

Does a Growth Mindset Intervention Reduce Perfectionism and Procrastination?

By Erica Bown

Research has consistently found a positive relationship between fear of failure (FoF) and both perfectionism and procrastination, which are both positively correlated with stress. Many university students report high levels of perfectionism, procrastination, and stress; thus, interventions to help reduce these characteristics are needed. Individuals who have a growth mindset (GM) are more likely to view challenges and failures as opportunities to learn and grow rather than as obstacles. The present study investigated the effect of a GM intervention on procrastination and negative perfectionism. We hypothesized that students who received the GM intervention would report lower procrastination due to FoF and lower negative perfectionism than students who did not receive the GM intervention. In Part 1, all participants completed questionnaires assessing personality, stress, perfectionism, procrastination, and GM. Participants in the GM intervention group were shown a video and infographic about GM and its benefits and were sent reminder emails about the benefits of GM once a week for four weeks. After four weeks, participants completed all measures again.

Our results show that the GM intervention failed to produce any significant changes in GM, negative perfectionism, and procrastination due to FoF. We further show positive relationships between stress and both procrastination due to FoF and negative perfectionism. Future research will investigate a more effective GM intervention. Our results confirm that university students' stress is highly associated with negative perfectionism and procrastination due to FoF and that students may benefit from stress reduction methods that specifically target perfectionism and FoF.

Faculty Mentor: Dr. Michele Moscicki

Do Cognitive Load and Processing Mode Influence Stereotypical Thinking About Consent?

By Vanessa Brickwood

Judgements can be based on effortful deliberation, or they can be generated quickly and automatically. Whether we are “thinking fast” or “thinking slow” can influence decision-making and the outcome of our judgements. For example, how much of each thinking we recruit when judging others can influence how stereotypical those judgments are (Monteith, Woodcock, & Gulker, 2013). Recognizing and avoiding stereotypical and erroneous beliefs about sex, gender, roles, and responsibilities is an important part of building a culture of consent. This research examines whether more stereotypical responses to stories of consent failures occur when people respond automatically, analytically, or distractedly. Participants read a vignette depicting a sexual encounter, including contextual information to support stereotypical thinking. Presentation of the vignette was either degraded in quality or along with a dual task, compared to the control condition, in order to encourage more thinking slow or reduced monitoring respectively and thereby produce more stereotypical responding. Presentation of the research will discuss whether and where these expectations were supported. Understanding when stereotypical thinking is more likely can help reduce and correct potential errors in sexual consent judgments.

Faculty Mentor: Dr. Aimee Skye

Do narcissists act differently with their romantic partner in public vs. private settings?

By Jenn Crebas

Narcissistic individuals use two strategies to attain and maintain status: those high in admiration seek status through self-enhancement, whereas those high in rivalry defend one’s own superiority through the devaluation of others. In our study, we are investigating the strategies individuals high (vs. low) in narcissistic admiration and rivalry use to acquire status within their romantic relationships and whether these strategies differ depending on whether they are engaging with their partner in a public versus private setting. To do so, 298 participants completed a measure of their narcissistic admiration and rivalry. Participants also reported the extent to which they use dominance (e.g., using aggressive tactics and derogation) and prestige (e.g., sharing their partner's achievements with others) strategies with their partner in public and in private. We predict that those who score higher (vs. lower) in narcissistic admiration will use more prestige-based strategies to gain status with their partner particularly in public (vs. private). In private, where there is less of a need to impress others, we predict they will use more dominance-based strategies to preserve their self-views and maintain the hierarchy within their relationship. We also predict that those who score higher (vs. lower) in narcissistic rivalry will engage in more dominance-based strategies to gain status with their partner in both public and private settings.

Faculty Mentor: Dr. Miranda Giacomin

Childhood Pet Ownership and The Strength of Sibling Relationships

By Dj Crossland

The human-animal bond and its potential positive effects are a relatively new area of study. We decided we wanted to do an exploratory study to investigate the relationship between childhood pet ownership and the strength of sibling bonds and how this relationship might be mediated by empathy. Based on the lack of literature we found pertaining to this specific topic, we are hoping to contribute and expand on the positive effects that pet ownership has. Previous studies found that owning a pet within a family unit contributed to an increase in family cohesion. Another study found that owning a pet increased empathy in romantic relationships, and this contributed to increased strength in the overall relationship. Finally, within the literature, we found that affective empathy contributed to stronger familial relationships with siblings, increased life satisfaction, and a reduction in stress later in life. Our study will be conducted online through SONA using a university student population, there will be five measures administered; a demographics survey, Pet Attachment Questionnaire (PAQ), Adult Sibling Relationship Questionnaire (ASRQ), The Family Adaptability and Cohesion Scale (FACES IV), and Interpersonal Reactivity Index (IRI). We hypothesize that childhood pet ownership will increase the strength of sibling relationships, and this relationship will be mediated through empathy.

Faculty Mentor: Dr. Eric Legge

Wake up Sheeple!: Personality traits and belief in pseudoscience

By Dj Crossland

Differentiating between truth and falsehoods can be challenging due to the prevalence of false information widely spread through social media and various technological platforms.

Understanding who is most susceptible to belief in false information may play an important role in devising strategies to help people become better consumers of information. The objective of this study is to investigate the correlation between personality traits and the propensity to adopt pseudoscientific beliefs. Previous research suggests that conscientious individuals are better at detecting online misinformation, while dark triad traits are associated with selfishness and conspiracy ideation. Our research further explores the relationship between personality traits and susceptibility to misinformation, with a focus on belief in different types of pseudoscience. We hypothesize that different categories of pseudoscientific beliefs may have a connection with self-interest, which could be moderated by dark or light triad personality traits. The results of this study will be used as the basis for future research to formulate successful tactics to counteract the dissemination of false information.

Faculty Mentor: Dr. Rodney Schmaltz

Examining how different sensory inputs impact motor learning

By Emily Czobor

During prism adaptation, a participant reaches to a target while wearing glasses that shift their vision horizontally (e.g., to the right). During the first few reaches, the participant misses in the direction of the prism shift. However, after many trials, the participant adapts to the prism shift by reaching further leftward to compensate for the rightward shift in vision. Recent work in our lab has shown that participants demonstrate a “congruency effect” such that they show larger adaptation aftereffects when the hand used and the direction of prism shift are “congruent” (e.g., right hand adapting to rightward shifting prisms), compared to incongruent (e.g., left hand adapting to rightward shifting prisms). In the current study, we investigated what sensory feedback signals might be important for eliciting the congruency effect by manipulating whether participants could see their hand (i.e., concurrent feedback), or could not see their hand (i.e., terminal feedback), under either congruent or incongruent adaptation conditions. Following prism exposure, we measured aftereffects for proprioceptive changes in both sensed arm position, using straight-ahead pointing and target directed pointing, and sensed eye position, using visual straight-ahead. We observed a significant congruency effect for target directed pointing following prism adaptation, independent of the visual feedback condition. In addition, although, we observed significant aftereffects in the visual straight-ahead task following adaptation, we did not observe a congruency effect. These results suggest that the congruency effect is primarily related to proprioceptive changes in limb position, but not eye position.

Faculty Mentor: Dr. Christopher Striemer

I "Woof" You: How Pet Pictures Influence Online Dating Selection

By Maron Demecillo

Pets, notably dogs, can act as a “social lubricant” by facilitating social interactions between people. This effect has been observed in traditional (i.e., in-person) heterosexual dating behaviour. However, it is unclear whether such effects will extend to people’s dating behaviour in modern contexts (e.g., dating apps) or in 2SLGBTQ+ daters. The present study experimentally evaluated how the presence of a dog in a dating profile will impact partner selection as a function of respondents’ sexual orientation. Participants were recruited (N = 300) and engaged in a mock dating app where they could choose who they were most interested in. They also completed surveys assessing their dating app use, mental health, and attitudes toward dogs. Preliminary analyses reveal that the presence of dogs in heterosexual dating profile pictures significantly increased the chances of the profile being selected for a match, regardless of the dater’s gender. Due to limited samples for 2SLGBTQ+ participants, data collection/analysis is ongoing and will be completed by January 2023. Our results to date indicate that, in a modern dating context, the presence of animals in dating profile pictures enhances the likelihood of the profile owner being selected. This empirically supports the dating trend of “dog-fishing”, or posing with a dog to attract dates, in online dating apps.

Faculty Mentor: Dr. Eric Legge

A procrastination solution for students

By Mady Gillett

Procrastination can be a serious problem among students and can cause stress and anxiety. As such, it is important to investigate the mechanisms of habit formation so that we can find ways to help people develop good health habits. In this study, we are focused on progressive muscle relaxation as it has many benefits. A commonly recommended strategy to overcome procrastination is the “Just Get Started” tactic, the idea being to set and complete a very small goal, which many people find makes it easier to then carry on with the rest of the task. However, the efficacy of the “Just Get Started” tactic has not yet been scientifically validated. The present study will first assess traits of self-control, conscientiousness, self-promises and procrastination. Next, we will test the commonly recommended notion that initially setting a very small goal for the behaviour of progressive muscle relaxation, e.g., tensing and relaxing one hand, whenever one is tempted not to do progressive muscle relaxation, will help students use progressive muscle relaxation more consistently. We hypothesize that students who use this tactic will initiate progressive muscle relaxation more often and will form a stronger habit of it.

Faculty Mentors: Dr. Rodney Schmaltz & Dr. Russ Powell

From Hurting to Helping?: Psychopathic Traits, Primes, and Costly Helping

By Shelby Grahn

Psychopathy is characterized by traits such as callousness, egoism, and a lack of empathy. Research suggests that those high in psychopathic traits are incapable of altruism, yet recent studies have demonstrated that psychopaths may engage in heroic helping and that some helping can be mediated by prosocial priming. The present study sought 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 charity locality (on-campus, local, national, international). Participants (N = 290) completed measures of psychopathic traits and empathy, followed by random assignment into one of the helping prime conditions. Participants then played a standardized game measuring costly helping (i.e., the Altruism/Antisocial Game; AlAn’s Game; Sakai et al., 2012). Throughout the game, participants distributed $20 between themselves and the charity. After the game, participants were asked to make a real-time choice regarding how they wanted their participation funds distributed (i.e., do you want to donate all or some of the money to the charity or keep it for yourself?). Overall, participants demonstrated self-oriented decision making, with no effect of charity locality or priming on donation decisions. Those high in psychopathic traits allotted twice as much money to themselves than to charity in real-life contexts versus in-game contexts. This research suggests that psychopaths may appear to be helpful on the surface, but their everyday giving when it counts relates to their own instrumental gain.

Keywords: psychopathic traits, priming, costly helping, empathy

Faculty Mentor: Dr. Kristine Peace

The Myths and the Memories: Perceptions of Traumatic Memory and Victim Credibility

By Janet Guenter

Studies have demonstrated that the quality and characteristics of memories of traumatic victimization can play a major role in how sexual violence allegations are treated in the criminal justice system. Research also confirms that singular versus repeated trauma is retained differently in memory. However, little is known about how assumptions about traumatic memory retention impact decision-making in criminal justice contexts. The present study was designed to evaluate perceptions of traumatic memories of intimate partner violence (IPV), and how memory characteristics for singular versus repeated incidents are associated with victim credibility. This study will also compare expectations about memory held by those with and without criminal justice backgrounds/specialized knowledge. Participants will read a vignette that depicts a victim's disclosure of sexual violence to police that occurred once, a few times, or many times (5+). The victim's memory will be described as complete (specific/detailed) or incomplete (vague/fragmented). Participants will complete measures of memory and IPV myth endorsement, as well as ratings of victim credibility, allegation veracity, judgment confidence, and recommended criminal justice responses. We anticipate that laypersons (i.e., those with no specialized knowledge) will be more likely to assign greater credibility to victim memories that are vague and fragmented, in accordance with popular beliefs about memory. Those with some specialized training should be more likely to hold opposing beliefs that associate memory specificity with credibility. This study has important implications for how victim memory is viewed by criminal justice professionals and how their perceptions inform their beliefs and actions.

Faculty Mentor: Dr. Kristine Peace

Hooked on a terpene: investigating the presence of withdrawal in zebrafish (Danio rerio) following cessation of repeated exposure to ß-caryophyllene

By Matthew Harper

Many psychological and physical conditions have the potential to be treated by terpenes, a class of phytochemicals produced by various plants. The ongoing legalization of medicinal cannabis has prompted further inquiry into both the beneficial and undesirable effects of terpene exposure. In previous research, the terpene ß-caryophyllene was shown to possess an acute sedative effect in zebrafish at a 4% dose and has been shown to possess therapeutic promise in the treatment of anxiety in mice models. However, there is currently minimal research on the capacity for ß-caryophyllene to inadvertently cause anxiety-like behavior when withdrawn. This study will assess anxiety-like and locomotive variables in zebrafish 48-hours post repeated ß-caryophyllene exposure using the open field exploration and novel object approach tests. ß-caryophyllene will be administered as a 4% dose solution. Doses of ß-caryophyllene will be administered for ten minutes over a seven-day period. 48-hours will lapse prior to the onset of behavioral testing. Data will be collected by March 26th, 2023. We expect the zebrafish to display heightened anxiety-like parameters. These parameters will include increased time spent in the thigmotaxis (outer) zone of the tank, greater total distance travelled, and increased velocity relative to control groups. The results of this research could demonstrate the need for caution if one is utilizing ß-caryophyllene for the long-term treatment of anxiety.

Faculty Mentor: Dr. Trevor Hamilton

Does Online Biofeedback Increase the Use of Stress Coping in Undergraduate Students?

By Oana Hossu

Students are under a lot of stress in their daily lives and often do not use effective coping strategies to mitigate this stress. Common coping barriers students report are lack of knowledge, lack of time, forgetting, and lack of motivation. People with a fixed anxiety mindset believe they cannot change their level of anxiety, which may relate to lack of motivation to cope. As such, in this experiment, we investigate different interventions and personal characteristics to determine which factors increase the likelihood that students will start to use effective coping strategies more throughout the semester. To address time barriers, we chose two quick coping strategies (i.e., deep breathing and cognitive reappraisal). To address lack of knowledge, we used an education intervention (i.e., videos). To address forgetting, we used a biofeedback intervention (i.e., heart rate). All participants answered questionnaires about stress, personality, and mindset. All intervention groups underwent two stress tasks and were instructed to use the coping technique they learned during the stress tasks. We hypothesized that participants in the biofeedback groups would use the coping techniques more often than participants in the education groups, who would use the coping techniques more often than participants in the control group. We further hypothesized that participants with higher growth mindset about anxiety would use the coping techniques more in the future. Our results showed that the use of deep breathing decreased between Part 1 and 2 but more people used cognitive reappraisal regardless of intervention group.

Faculty Mentor: Dr. Michele Moscicki

The cannabis terpene bisabolol increased locomotion but had no affect on anxiety-like behaviour in zebrafish

By James Hudson

Terpenes are fragrant compounds found in many animals and plants, giving them their pigment, smell and taste. They are also the main components of essential oils. Bisabolol is one terpene commonly found in certain strains of cannabis, sage, and chamomile that has been shown to have potential anxiolytic effects. This study investigated the effect of different concentrations of bisabolol (0.001%, 0.0015%, 0.002%) on anxiety-like behaviour and locomotion in zebrafish using the open field and novel object approach tests. Bisabolol increased zebrafish locomotion at the highest concentration of bisabolol (0.002%) but did not significantly affect anxiety-like behaviour at any concentration. In conclusion, this study shows that bisabolol increases locomotion at the highest concentration used here (0.002%) but does not affect anxiety-like behaviour in zebrafish.

Faculty Mentor: Dr. Trevor Hamilton

Examining the anxiolytic potential of Cannabis terpenes: The differential effects of alpha-pinene enantiomers on zebrafish anxiety-like behaviour and locomotion

By Andréa Johnson

Research into the effects of terpenes has been on the rise as a result of the recent Cannabis legalization in Canada. Cannabis terpenes have been shown to possess a wide range of medicinal properties and may be promising therapeutics for a variety of pathological conditions. This study investigated the acute effects of α-pinene on zebrafish locomotion and anxiety-like behaviour using the open field exploration test. α-pinene was administered in 0.01%, 0.02%, and 0.1% doses. As α-pinene is a racemic compound, we also tested its (+) and (−) enantiomers to observe any differential effects. α-pinene demonstrated differential dose-dependent effects on anxiety-like and motor variables. Specifically, (+)-α-pinene and (−)-α-pinene had significant effects on anxiety measures at different doses in the open field test (time spent in the thigmotaxis and center zone), as well as locomotor variables (swimming velocity and immobility). (+ /−)-α-pinene showed only a small effect on the open field test on immobility at the 0.1% dose. This study demonstrates that α-pinene can have a sedative or anxiolytic effect in zebrafish and may have different medicinal properties when isolated into its (+) or (−) enantiomers.

Faculty Mentor: Dr. Trevor Hamilton

The behavioural effects of beta-caryophyllene in zebrafish are mediated by CB2 receptor activity

By Andréa Johnson

Research into the effects of terpenes has been on the rise as a result of the recent Cannabis legalization in Canada. Cannabis terpenes have shown a diverse array of therapeutic benefits and have potential as treatments for numerous pathological conditions. Recent research has examined the mechanisms of action of terpenes most commonly found in North American cannabis strains. Other cannabis constituents with medicinal properties, such as THC and CBD, have undergone extensive study and are believed to work in the brain through various mechanisms, most notably CB1 and CB2 endocannabinoid receptors. Terpene compounds selectively binding to CB1 and CB2 receptors may have important implications for medicinal and therapeutic applications. For instance, the endocannabinoid system has been shown to potently modulate anxiety in humans, rodents, and zebrafish. The cannabis terpene, Beta-caryophyllene (BCP), has been of particular interest due to its robust anxiolytic and anti-depressant effects in studies with mice and its potential action at CB2 endocannabinoid receptor sites. The present study utilized the open field exploration test to examine the effects of BCP on zebrafish anxiety-like behaviours, as well as its potential action at cannabinoid receptor sites using CB1 and CB2 receptor antagonists rimonabant and AM630, respectively. This study found BCP to have an anxiolytic effect on zebrafish anxiety-like behaviour, whereby, after BCP administration zebrafish spent less time hugging the outer walls of the arena and more time exploring the center zone. When cannabinoid receptor antagonists rimonabant and AM630 were administered prior to BCP exposure, these effects were eliminated by AM630 and not rimonabant. These findings suggest

the behavioural effects of BCP on zebrafish anxiety-like behaviour are mediated by its selective preference for CB2 receptor sites.

Faculty Mentor: Dr. Trevor Hamilton

Eyes bridge the gap: how eye gaze-induced arousal biases distance perception

By Nickki Kamprath

Previous research has found that distance perception is influenced by nervous system arousal (e.g., spiders increase arousal and are perceived as closer). The purpose of this study is to examine whether eye contact-induced arousal can influence distance perception using stimuli of real people viewed in virtual reality. Participants will view two pictures of a model at either the same or different distance and asked whether the model in the second picture is closer or farther compared to the first picture. To determine whether eye gaze influences distance, the models will be either making direct eye gaze, averted gaze, or no gaze (i.e., looking down). Participants will also have their nervous system arousal recorded. We expect that arousal levels will increase when the participant views the model with direct eye gaze which will consequently bias participants to perceive the model as closer in proximity. This research will be the first to explore the relationship between eye contact, arousal, and distance perception.

Faculty Mentor: Dr. Michelle Jarick

Recognizing Risk Factors for the Perpetration of Campus Sexual Violence

By Madison Karpiak, Dana Haugen, Dakota Wilkin, & Katerina Rubachuk

In past surveys of post-secondary men, several factors such as negative peer influences (Humphrey & Kahn, 2000), rape supportive attitudes (Zinzow & Thompson, 2015), as well as excessive alcohol and substance use (Cleveland et al., 2019), have been found to be associated with increased risk of sexual violence perpetration including. Survivors of campus sexual violence rarely choose to report their assault to authorities and instead disclose to close friends or family members. As other students are the main receivers of sexual violence disclosures, it is important examine what influences their perceptions, as this could whether they see the respondent as a risk to others on campus and their level of concern for those who have experienced sexual violence.

The present study aimed to experimentally examine the perceptions of students regarding what would constitute a risk factor for campus sexual violence. Three empirically supported factors were examined: frequent substance usage; attitudes supportive of rape; and negative peer influence. Participants were presented with a vignette depicting an on-campus sexual violence scenario, where the presence of the three risk factors was varied. Participants were then asked to rate the likelihood that the respondent/perpetrator will commit another sexual or violent crime, how safe they would feel around the respondent, the likelihood that the respondent will engage in future sexual violence, and the severity of behaviour. Although data collection has not been

completed at the time of writing, it will be complete prior to Student Research Day and preliminary results will be presented.

Faculty Mentor: Dr. Sandy Jung

Does perpetrator intoxication during a campus sexual assault influence perceptions of risk and sanction recommendations?

By Madison Karpiak

Past studies show that alcohol-intoxicated perpetrators are seen as less blameworthy for their actions (Stormo et al., 1997) and that drug consumption does not diminish perceptions of blame to the same extent as alcohol consumption (Angelone et al., 2007). The present study examines whether the intoxication of perpetrators of campus sexual assault influences the perceptions of the campus community in terms of the perpetrator's risk to reoffend and what would be deemed appropriate sanctions. It was hypothesized that perpetrators under the influence of alcohol or ecstasy would be perceived as less likely to reoffend and assigned less severe sanctions than those who are sober. In this study, members of the university community (i.e., students, staff, faculty) were recruited as participants and were presented with one of three vignettes of a campus sexual assault (respondent was either sober, drunk/alcohol, or high/ecstasy). Participants rated the perpetrator's likelihood to commit another offense and the appropriateness of assigning specific sanctions to the perpetrator. It was found that, contrary to the first hypothesis, perpetrator intoxication did not influence perceptions of risk. The second hypothesis was only partially supported, as significant differences were only found for three of the eight sanctions: restorative justice, all on-campus activity restriction, and expulsion. The oral presentation will discuss and interpret these findings.

Faculty Mentor: Dr. Sandy Jung

What Does it Mean to be an Ally to the LGBTQ+ Community? Comparing Definitions of LGBTQ+ and non-LGBTQ+ Individuals

By Noelle Kilbreath

Allyship has gained popularity in response to prominent social justice movements. Allyship to the LGBTQ+ community can create inclusive environments and challenge oppressive systems, but it can also be problematic and harmful. Post-secondary institutions are generally perceived as inclusionary places for LGBTQ+ individuals. However, LGBTQ+ students still face disproportionately high rates of victimization, poor mental health, suicidal thoughts, and other struggles which negatively impact academic performance and quality of life. Allyship can limit the compounding effects of oppression. While actions such as donating or protesting are viewed as effective allyship behaviour, genuine and effective allyship requires self-examination and education with truly affirming attitudes and beliefs. In this context, we see the importance of understanding the nuances of allyship beliefs and actions. This project will compare definitions and perspectives of ally definitions, attitudes, and beliefs between LGBTQ+ and non-LGBTQ+ students. MacEwan University students will respond to self-report measures in a post-

secondary context. Ideally, differences will also be examined between lesbian, gay, bisexual, and transgender people to account for unique intersectional experiences, but this will depend on the sample size. This study aims to 1) determine if a difference exists in how non-LGBTQ+ individuals and LGBTQ+ individuals define what it means to be an ally and 2) determine whether there is a relationship between definitions of allyship and the presence of affirming behaviours. This project will inform us of the current climate of allyship on campus for potential allyship training and professional development initiatives in the future.

Faculty Mentor: Dr. Laura Offrey

Combating Internalized Homophobia: Protective Factors and Their Effectiveness

By Jared Kostiuk

Internalized homophobia is an adverse consequence that emerges in societies characterized by heteronormativity. Individuals – both sexual minorities and heterosexuals – who are exposed to heterosexual norms as well as unfavourable portrayals of sexual minorities may internalize, or take in, these negative depictions. Deviations from the heterosexual norm may be perceived as 'unnatural,' 'unacceptable,' or 'repugnant' by sexual minorities and heterosexuals alike, and some of these views may be completely unconscious. Sexual minorities are at heightened risk of experiencing various psychological, behavioural, and social distress due to internalized homophobia, whether it is directed at the self or others. Therefore, it is crucial to uncover various factors that protect against internalizing deleterious views of sexual minorities. To this end, the present study investigated four plausible protective factors: self-esteem, social network quality, education level, and degree of exposure to positive portrayals of sexual minorities. The participants included MacEwan University students, as well as recruited sexual minority participants in an attempt to obtain a representative sample. Each participant's level of internalized homophobia was assessed, and the results were compared to each of the four variables to determine whether any of them had a beneficial impact on preventing the development of internalized homophobia. The current study's primary objectives are to identify factors that could help those suffering from the adverse effects of internalized homophobia and thereby improve the overall well-being of sexual minorities.

Faculty Mentor: Dr. Laura Offrey

How different magnitudes of visual shift affect motor learning in prism adaptation

By Claire Kryska

If a participant reaches to a target while wearing rightward shifting prism glasses, they will initially miss to the right. However, the participant eventually adjusts their reaches leftward to counteract the rightward prism shift. After the glasses are removed, aftereffects are observed where the participant's reaches now miss in the opposite direction (i.e., left). In this experiment, we examined whether the size of the reach error induced during prism adaptation had any influence on the "congruency effect" in which aftereffects tend to be larger when the hand used during adaptation and the direction of prism shift are congruent (e.g., right hand, right prism

shift), compared to incongruent (e.g., left hand, right prism shift). To investigate this, we manipulated the hand used (left vs. right), direction of prism shift (left vs. right), and the size of the reach error induced during adaptation by using two different magnitudes of prism shift (8.5° vs. 17°). Although we did not find any evidence of a congruency effect when measuring prism aftereffects, we did observe a significant hand x prism shift x magnitude interaction for pointing error reduction during prism adaptation. Specifically, participants in the 17° group (but not the 8.5° group) were better at reducing their pointing errors during prism adaptation when the hand used matched the direction of prism/visual shift. Thus, the congruency effect might be related to the increased difficulty associated with adjusting for larger reach errors (i.e., 17°), compared to smaller reach errors (i.e., 8.5°).

Faculty Mentor: Dr. Christopher Striemer

Hiding and Searching Behaviours in a 2D environment

By Karanvir Kundan

There are many times in our lives when we have to hide something to try and prevent others from finding it (e.g., presents) or search for something another person has hidden (e.g., special treats). While both tasks depend heavily on spatial memory, each engages unique cognitive processes and strategies. Past research has shown that environmental features, such as distance from an entryway, or proximity to a window, influence hiding and searching behaviour. However, it is unknown how social factors, such as whether the hider/searcher is a friend or a foe, might influence such behaviours. This study aims to address this question by presenting participants with different vignette scenarios that position participants to be hiding/searching for objects in a friend-based (vs. a foe-based) relationship. Furthermore, looking at how personality can play a role in hiding/searching behaviours (e.g., participants higher in extroversion vs. those lower). Also, the amount of prior video game experience can influence hiding and searching behaviour in a 2D virtual task. More research must be done on how humans hide and search for objects. This research will be necessary for understanding individuals hiding and searching patterns in these varying factors and to help in day-to-day tasks that involve searching/hiding objects.

Faculty Mentor: Dr. Eric Legge

Calculating Risk: Sexual Behaviour as a Consequence of Personality, mating orientation, and alcohol consumption

By Brielle Lamash

Sexual Strategies Theory suggests people fall on a continuum between having short-term mating orientation (STMO) and long-term mating orientation. One way STMO individuals signal mating goals is via risky drinking. The current study I will be replicating therefore aims to investigate drinks per week (DPW) as a mediator between STMO and risky sexual behavior (RSB), with gender as a moderator between STMO and DPW.

Faculty Mentor: Dr. Lynne Honey

Using Complex Video Games to Improve Executive Function

By Samuel Larocque

Executive Function (EF) is a set of cognitive processes that regulate thoughts/actions/behaviours in order to achieve goals; it consists of three cognitive components: working memory, inhibition, and task switching. EF can be improved with training and life experience. However, current training programs are expensive and highly specialized; it is unclear whether existing commercial products, such as video games, can be used to improve EF in a more cost-effective manner. As such, this study investigates whether playing commercially available video games can improve EF. To this end, participants with limited video game experience will be recruited and divided into two groups. Group 1 will play a game that primarily relies on a single component of EF (working memory), while Group 2 will play a game that engages all three components of EF. Both groups will play the designated game for at least 10-hours over a few weeks and complete an assessment of EF before and after training. We predict games that significantly engage EF will lead to pervasive improvements in EF. We also predict that the two types of games will lead to different levels of improvement in the working memory component of EF. This study will significantly contribute to the literature on EF training and clarify whether focused (vs. distributed) EF training leads to greater EF enhancement in a particular EF component. It will also have important implications for the use of video games as an accessible and cost-effective therapeutic tool for individuals with EF impairments, such as those with ADHD.

Faculty Mentor: Dr. Eric Legge

OCD Correlates and Photographs as a Checking OCD Coping Mechanism

By Katherine Luzanac

Obsessive-Compulsive disorder is a long-lasting and debilitating diagnosis for many individuals, but the different facets of OCD symptoms can be found at varying levels across vast populations. This research involves an exploratory study evaluating whether different severities of OCD symptoms are related to higher and lower levels of characteristics like self-discipline, procrastination, and academic achievement. The follow-up study will investigate if taking photographs of checking triggers like appliances impacts the severity of checking symptomology. The predicted results for our exploration of OCD correlates is that more severe levels of obsessive-compulsive symptoms will correspond to higher levels of procrastination and lower levels of self-discipline and academic achievement, with moderate symptoms resulting in the opposite outcome. This research will attempt to fill a gap in the literature regarding OCD correlates for students in undergraduate settings and determine if more moderate levels of OCD can be beneficial in academic situations. Our anticipated outcome for the following portion is that taking photographs of checking triggers will decrease the frequency of checking behaviour due to the pictures functioning as “proof” that the appliance is turned off. This investigation will provide an important focus on photographs as a coping mechanism for checking, considering

that the “picture strategy” is already being used by individuals with OCD. With no previous research on this method’s efficacy, this inquiry will provide much-needed information on this coping mechanism.

Faculty Mentor: Dr. Russ Powell

Singing the Stress Away: Karaoke As a Coping Tool

By Maria Luzardo Rubinstein

While highly entertaining, music can also serve as a coping mechanism. For instance, group singing can reduce anxiety and improve social relations. However, research on individual singing is scarce. Although individual singing in front of others has been used in the past to induce stress, it is unclear whether it can also decrease stress in other contexts (e.g., alone without social pressure). In the current study, participants’ perceived stress, mood, and blood pressure were taken before and after a stress-inducing arithmetic task. Next, they were placed in one of five conditions: singing or listening to liked or disliked songs alone, or sitting in silence, and stress, mood, and blood pressure were assessed a final time. Finally, participants completed demographics, musical sophistication, and personality questionnaires. Based on a previous study in our lab, we expect that stress will decrease after singing or listening to music, with singing showing the largest effects. Moreover, it is expected that those singing to preferred songs will show the greatest decrease in stress. These findings would suggest that singing could serve as a particularly easy and effective coping tool for stress. This would be beneficial to individuals who experience recurrent anxiety, or anyone looking for a quick way to reduce stress.

Faculty Mentor: Dr. Kathleen Corrigall

Motivations in Political Conversations

By Shannon Majeau

An important part of being a participating citizen in a democracy is to share alternative perspectives. However, political conversation can be polarizing, and ensuing conflict can damage relationships. Therefore, it is valuable to understand why conflict may 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 they disagree with. Specifically, the motivations to educate self and influence others. We also explored the way that the relationship with the other person can impact motivations and the perception of those motivations in others.

MacEwan students were asked to recall a disagreement conversation with either a strong-tie, such as a close friend or family member, or a weak-tie, such as a casual acquaintance or co-worker. They were asked to indicate their perceptions of the other person. The results indicate that people were motivated to express opinions and learn about others, and perceived the other

person to be motivated to express opinions and influence others. However, there were not significant interactions between motivations and relationship type.

In follow-up exploratory analyses, we found that participants reported the experience to be more positive when they perceived the other person to be motivated to learn about them and build relationships. They also reported that the other person could have been more open-minded and listened more than they themselves could have, perhaps indicating that people tend to believe other people, and not themselves, are the cause of problems in conversations.

Faculty Mentor: Dr. Craig Blatz

Comparing Public Perceptions of Narcissism and Anxiety

By Dezerae Martens

Narcissistic Personality Disorder (NPD) exhibits a relatively enduring character pathology of grandiosity, lack of empathy, and need for admiration, whereas General Anxiety Disorder (GAD) is marked by excessive worry, restlessness, fear of the future, and irritability (Graspas et al. 2020; Skodol & Bender, 2013; Dugas et al. 2022). People stigmatize individuals with anxiety disorders; that is, they perceive them as being weak-not-sick (Curcio & Curboy, 2020). Individuals with personality disorders are stigmatized as being unpredictable and dangerous, though research on the stigmas surrounding individuals with Narcissistic Personality Disorder is limited (Sheehan et al., 2016). Here, we compared the public stigma of narcissism and anxiety. We hypothesized that narcissism would be perceived more negatively than anxiety because narcissism is associated with aggressive and extroverted behaviors while anxious behaviors are more covert. To examine this, 297 participants completed measures of narcissism and generalized anxiety. We also measured participants' stigma towards individuals with NPD and GAD. Last, participants read a vignette about a person who is narcissistic and a person who is anxious and rated their perceptions of each individual. Our results indicated that individuals high in narcissism perceived NPD and GAD, as a sign of personal weakness and a disorder that they could snap out of, if they wanted to, but not as a medical illness. They also reported preferring a relationship with someone who is narcissistic but not with someone who is anxious. Those high (vs. low) in anxiety feel personally stigmatized by others; in addition, they do not perceive NPD as a sign of personal weakness, laziness, and dangerousness, but think others view narcissism in this way. They would also welcome a relationship with another anxious individual but not with someone who is narcissistic.

Faculty Mentor: Dr. Miranda Giacomin

A psychophysiological examination of the automatic arousal response caused by being watched

By Abbigale Massam

Previous research has shown that when we make eye contact with another person, there is a significant enhancement in the skin conductance response (SCR). Mounting evidence suggests

that soon after eye contact is made, many mentalizing and self-awareness processes begin. For instance, we think about the person like who they are, how we know them and any feelings associated with them. Our thoughts also might turn towards ourselves as we become aware of the fact that we are being watched. We process things like why are they looking at me? How should I act? Our hypothesis is that the part of the physiological response that occurs during direct eye gaze is from the belief that we are being watched, even if we can't see the eyes of the person watching us. By using a one-way mirror and SCR monitoring equipment, two participants will sit on each side of a one-way mirror where one participant cannot see the other one but knows they are being watched. They will be instructed to direct their gaze towards each other (eye contact) and away/averted from each other. We expect that SCR will significantly increase in the direct eye gaze condition where the participant cannot see the other person's eyes but knows the other person is looking at them. This research could provide further evidence that psychophysiological response to eye gaze are attributed to being watched rather than just seeing the eyes of another person.

Faculty Mentor: Dr. Michelle Jarick

Book to the Basics: Systematically Teaching Children to Read Well

By Jacey Mitchell

As the rates of reading difficulties in school children increase, so does the need for effective interventions. Direct Instruction (DI) is an evidence-based approach that uses applied behaviour analysis principles to teach a variety of different educational 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 in teaching reading. The current study included three participants, aged 5 through 7, all of which were considered to be underperforming compared to their same-grade peers. The DI program was implemented once a week, in a 1:1 session, for 12 weeks. Participants were also assessed every session on their sound and word fluency (correct responses per minute). Throughout the intervention, each participant's scores showed a continuous increasing trend in fluent accurate responses, and all participants more than tripled their fluency scores for reading words in just 12 weeks when compared to their baseline scores. Results from this study show the successful effects for these three participants, suggesting the Maloney Method as an effective DI program for children falling behind in reading, and adds to the current literature supporting the use of DI programs in teaching academics.

Faculty Mentors: Miranda Macauley & Dr. Russ Powell

Do Personality Traits, Ageist Beliefs, and Knowledge of Dementia Influence Canadian Undergraduates Stigmatizing Attitudes Towards People With Dementia?

By Logan Moon

Dementia is a neuropsychological condition causing progressive deficits in cognitive functioning. Alzheimer's dementia is the most common form of dementia. A particular challenge faced by

persons with dementia (PwD) is the level of stigma they encounter on a daily basis. Considerable research has shown that stigmatization of PwD leads to poor mental and physical health outcomes. Stigma is regarded by many as the biggest obstacle PwD face when accessing care. Programs aimed at the reduction of stigma have largely focused on education and creating opportunities for contact with a PwD, showing positive outcomes. However, we know little about who is most likely to have stigmatizing beliefs towards PwD and which behaviours exhibited by PwD are more likely to be stigmatized. We plan to administer a series of questionnaires to undergraduate students at MacEwan University. Information on participant demographics, ageist beliefs, personality factors, experience with and knowledge of dementia will be collected. Participants will then be given a hypothetical vignette of a PwD. The vignette has six behavioural descriptions. Stigma towards each behaviour will be assessed by asking participants to rank on a scale of 1-10, how distressing the behaviour is. We hypothesize that lower levels of ageism, higher levels of familiarity, and greater knowledge of dementia will predict lower levels of stigma in this Canadian undergraduate population. As well, political affiliation, and personality are expected to influence stigma but the direction is unclear.

Faculty Mentors: Dr. Lori Harper & Dr. Russ Powell

Worth the Risk: Narcissism and Risky Health Behaviour

By Melissa Nielsen

Grandiose narcissists (i.e., individuals who are self-focused, egotistical, and vain) are more likely to eat healthily and exercise due to their concerns with physical appearance. However, they also make riskier health decisions (e.g., binge drinking). In two studies, we examine whether those high (vs. low) in narcissism are more willing to risk their long-term health for short-term appearance enhancements.

In Study 1 (N = 286) and Study 2 (N = 277), we measured participants' 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 side effects. Participants indicated their willingness to use these products to be admired by others, improve their health, and be more competitive. In Study 1, men (but not women) who were 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 (vs. present). Study 2 did not replicate these results. Findings suggest that those high in narcissism may not be more interested in appearance-enhancing products. However, knowing potential side effects could help them make better health decisions if they are.

Faculty Mentor: Dr. Miranda Giacomin

Language and Voice Effects on the Perception of Mixed Emotions in Children

By Tulsa Oddy

Mixed emotions comprise opposing basic emotions, such as happiness and sadness, experienced simultaneously. Previous research examining children's perception of mixed-happy and sad emotions revealed that young children have difficulty understanding that more than one emotion can be experienced at the same time but that this understanding increases with age. The current project extends this work by examining happy and disgusted mixed emotions conveyed in spoken sentences' content and vocal expression. The present thesis examines the age-related change in the perception of mixed emotions in children ages 3-6 years and adults. Children listened to spoken sentences comprising of mixed emotions created by pairing incongruent sentence content and vocal expressions. In one condition, children rated the spoken sentences along a continuum of happy and sad emoticons on a Likert-type scale. In another condition, they rated sentences on happy and disgusted emotions. Three and four-year-old children showed difficulty distinguishing between emotions across sentence content and vocal expression combinations. However, similar to adult listeners, 5 and 6-year-olds demonstrate an increasing emphasis on vocal expression over sentence content in judging the emotion of the talker. The findings will help shed light on the cues that contribute to understanding emotions that enable children to succeed in social communication and relationships with others.

Faculty Mentor: Dr. Tara Vongpaisal

Individual Differences in Inhibitory Control: The Associations Between the "Automatic Pilot," Executive Function, and Executive Attention

By Branden Otte

Previous research has demonstrated that the visuomotor system can rapidly correct ongoing movements following abrupt changes in a target's location. These "online corrections" can precede conscious awareness, and can occur even when participants are instructed not to correct. This "automatic pilot" is controlled by the dorsal visual stream, which plays a critical role in visually guided actions. These inadvertent corrections commonly occur during the Automatic Pilot Task – a procedure sensitive to errors in movement inhibition. Response inhibition is a component of executive function, which is governed, in part, by the right inferior frontal cortex, and a series of fronto-basal-ganglia networks. Response inhibition, however, is not a unitary construct, and has various facets. It is currently unclear whether the mechanisms that inhibit automatic movement corrections in the dorsal stream share common cognitive and neural substrates with other aspects of executive attention or executive function. Therefore, this study will investigate whether unintended corrections in the Automatic Pilot Task are related to other measures of executive attention, such as the Sustained Attention to Response Task (SART) and the Cognitive Failures Questionnaire (CFQ), as well as measures of executive function such as the Adult ADHD Self-Report Scale (ASRS), and the Behaviour Rating Inventory of Executive Function for Adults (BRIEF-A). If the mechanisms that inhibit the "automatic pilot" share common substrates with executive attention and executive control, then increases in unintended corrections in the Automatic Pilot Task should be associated with increased errors on the SART, and poorer scores on the ASRS, CFQ, and BRIEF-A.

Faculty Mentor: Dr. Christopher Striemer

Pluralistic Mating Strategies: Examining sexual orientation with CNM, jealousy, sex drive, and sociosexuality

By Crystal Pavlis

Is sexual orientation correlated with sociosexuality, sex drive, or preferences for non-monogamy? Can orientation predict one's perceptions of jealousy toward emotional or sexual infidelity? Evolutionary theory in psychology has traditionally examined mating strategies, sociosexuality, and sex drive from a heterosexual and monogamous perspective, focusing on reproductive advantages. However, sexual orientation, mating strategies, and relationship preferences do not exist in such a strict dichotomy. Previous sociosexuality research suggests that heterosexual and homosexual individuals of the same gender respond similarly to measures of sex difference. Bisexuality may play a significant role in gender differences presented, though researchers often exclude bisexual populations from studies. In particular, bisexual women tend to exhibit more permissive sociosexual attitudes and behaviour. Research also suggests that individuals who identify as either monogamous or consensually non-monogamous differ significantly in their sociosexuality, mating strategies, and mate-retention behaviours. Sexual and relationship orientations may affect how someone perceives jealousy toward sexual or emotional infidelity. Studies show consistent sex differences in jealousy toward infidelity, though how bisexuality or consensual non-monogamy affects these relationships remains to be explored. The current study will examine how sexual orientation correlates with sociosexuality, sex drive, and preferences for consensual non-monogamy. This research will also explore how orientation predicts jealousy toward sexual and emotional infidelity. The study aims to replicate and extend previous research findings into a more diverse pool of participants and improve minority representation within research. This research will investigate the potential evolutionary advantages of pluralistic sexual orientation and mating strategies.

Faculty Mentor: Dr. Lynne Honey

Puzzling Perceptions: Attraction, sociosexuality, and rivalry evaluations among women

By Crystal Pavlis, Amy Petersen, Brandon Dare, Brandy Thiessen, Brielle Lamash, Jada Tomlinson, Jay McLeod, Karanvir Kundan, Madison Wesenberg, Michael Kramer, & Trina Miksic

Can we identify others as potential mates or rivals based on their appearance and behaviours? Do specific mannerisms or aspects of appearance provide information about sexual attraction or openness to sexual behaviour? A study by Stillman and Maner (2009) explored appraisals using videotaped interactions of two people solving a Rubik's Cube puzzle together. In the study, a female participant and a male confederate attempted to solve a puzzle without speaking to each other, and each using only one hand. Other participants viewed short video clips of these interactions and were asked to rate the female participant's attraction to the male confederate, her level of sexual inhibition, and several personality variables. Participants also counted or rated several behaviours that are known to be associated with flirtation or interest. In the original study, participants' ratings of the videos were found to be reasonably accurate when evaluating sexual inhibition. The study also found several reliable behavioural cues, such as eyebrow

flashes and glancing at the puzzle partner. In our replication and extension project, we aimed to determine whether the basic effect would replicate and whether additional variables (including sexual orientation) would affect results. We are also collaborating with a researcher at Stetson University in Florida so that videos will be rated by participants who cannot know the people in the videos.

Faculty Mentor: Dr. Lynne Honey

The Impact of Positive Animal Stimuli on Stress and Well-being

By Ronak Rai

Interacting with animals, particularly dogs, has been shown to reduce stress and improve mood in humans. The current research aimed to test whether this phenomenon extends to an online program where positive animal stimuli are displayed to participants. Specifically, participants (N = 171) were recruited and completed a stressful task online, which significantly increased participants' stress relative to baseline. Following this, participants were randomly assigned to one of three intervention conditions: viewing positive animal stimuli (images of puppies), positive non-animal stimuli (images of desserts), or neutral stimuli (images of school supplies). Participants completed pre- and post-intervention measures assessing state stress, anxiety, and positive and negative affect. Repeated-measures ANOVAs were conducted to determine whether the intervention conditions differed in impacting participants' scores on measures of well-being from pre- to post-intervention. Preliminary results revealed that the positive animal stimuli group had significantly larger reductions in negative affect post-intervention compared to the positive non-animal or neutral stimuli groups. Data collection and more comprehensive analyses are underway. These findings provide evidence of the efficacy of an accessible online animal-based intervention in helping improve state well-being in participants.

Faculty Mentor: Dr. Eric Legge

The Visual Categorization of Handwritten Letters

By Adia Redekopp

Handwriting is a ubiquitous form of visual communication. Most research into the perception of handwriting has investigated the role of motor production on the perception of handwritten stimuli. For example, previous research has found that motor production of straight letters (e.g. j, k, w) interferes with the visual perception of straight letters but not curvy letters, suggesting that these two classes of letters are categorically different. However, very little research has investigated the perception of handwriting from a purely visual perspective. For our research, we will measure visual thresholds for identifying male or female handwriting using a two-alternative force choice interval (2AFC) procedure. In order to determine if straight letters are perceived differently from curvy letters, we will measure thresholds separately for a stimuli composed mostly of curvy letters (e.g. obscured) vs stimuli composed mostly of straight-line letters (e.g. twilight). Furthermore, to investigate if local or global visual information contributes to thresholds, we will measure thresholds when stimuli are presented in both upright and

inverted conditions. We will evaluate thresholds for all conditions in four to five participants. This study will help inform our understanding of how we perceive handwritten information as well as determine whether different forms of handwritten letters are classified separately.

Faculty Mentor: Dr. Nicole Anderson

Social anxiety response to acute nerolidol exposure in Zebrafish

By Brayden Ritter

The impacts of cannabis and its constituents on mental health symptoms such as anxiety remain understudied. Of the cannabis compounds, the most well-studied are delta-9-tetrahydrocannabinol (THC), associated with the psychoactive effect of cannabis, and cannabidiol (CBD). However, the cannabis plant contains nearly 400 chemical compounds spanning various classes (Levinthal & Hamilton, 2021). One of these classes is terpenes: the compounds responsible for the scents associated with cannabis and all other plants (Cox-Georgian et al., 2019).

Zebrafish (Danio rerio) represent an ideal model organism to investigate the impacts of these compounds as they share an evolutionarily conserved endocannabinoid system (ECS) and nearly 80% gene homology with humans (Horzmann & Freeman, 2016). Furthermore, they are able to be tested with high throughput efficiency. The current study investigates the impacts of nerolidol on anxiety-like behaviours in Zebrafish through the use of a well-validated measure of zebrafish behaviour, the shoaling test (In press in Scientific Reports). Fish were tested in groups of four and either received a low dose (375ug/L), high dose (750 ug/L), or no dose for the trial condition. Results indicate that nerolidol does not significantly impact zebrafish motility or anxiety-like behaviours.

Faculty Mentor: Dr. Melike Schalomon

A methodological exploration of drug dosage time in Zebrafish behavioural pharmacology research

By Brayden Ritter

A lack of standardization, and proper reporting, has led to methodological concerns in neuropsychological and neuropharmacological zebrafish research. Of these concerns, those with actionable and relatively easy solutions are the administered drug dose and the dosing time (the time the fish spends in a drug solution) for a given drug. The current study aims to systematically investigate these concerns in an attempt to standardize research methods related to zebrafish drug administration in the future. The current study used a well-validated measure of zebrafish behaviour, the open field test (In press in Scientific Reports). A well-validated anxiolytic substance was also used to ensure robust study results; lysergic acid diethylamide (LSD) was thus used (Grossman et al., 2010; Kyzar, Collins, Gaikwad, et al., 2012). A three-by-three dose (50ug, 100ug, 250ug) and dosing time matrix (10, 20, and 30 minutes) was implemented to determine the interactive effects of the two variables. Results from

the study indicate a significant difference in swimming velocity ($F= 4.039$, $p<0.001$), distance moved ($F= 3.414$, $p=0.003$), and cumulative time spent in the thigmotaxic zone ($F= 2.543$, $p=0.021$) across the matrix. These results indicate the necessity to include detailed accounts of these variables in all studies and not to assume that two studies are identical if these values are not identical.

Faculty Mentor: Dr. Melike Schalomon

The Unsolved Mysteries of Applied Behaviour Analysis

By Nick Robinson

Knowledge and awareness of Behaviourism and the practice of Applied Behaviour Analysis vary across students and academics. Despite the introduction of certification and an ethical code for behaviour analysts and the advocacy of several groups, a consensus in the representation of Behaviour Analysis remains elusive. Textbooks and instruction at all levels of education can wildly differ in the presentation of Behaviour Analysis and Behaviourism. Inaccurate information can be dangerous and could mislead those who could benefit from Behaviour Analytic interventions from receiving effective treatment. Behaviour Analysis has long been recognized as the gold standard of treatment in patients with autism spectrum disorder and harm can be placed upon clients who are led to believe in the myths surrounding ABA. In the current study, we will analyze various textbooks and surveys filled out by undergraduate students and faculty to ascertain their knowledge of Behaviourism and ABA and attempt to analyze the variance in the knowledge and representation of ABA and Behaviourism. It is expected that the results will replicate the results denoted in past studies will exist within students and facility alike as well as the textbooks. The aim of this study is to increase the accurate representation of the theory of behaviourism and practice of ABA to ensure clients and consumers of science alike are exposed to accurate information to make choices in academic pursuits, employment and treatment options.

Faculty Mentor: Miranda Macauley

Does This Look Like STALKING to You? Factors Associated with Identification of Stalking Behaviours

By Natasha Robinson

Perceptions of stalking are highly variable, dependent upon personal definitions and experiences. For example, recent surveys have found that young persons view social media stalking as acceptable and not distressing. Similarly, popular media often depicts stalking variably as misguided romance to psychotic deviance. In Canada, legal definitions of stalking (criminal harassment) are predicated on the victim feeling fear for their personal safety. Given that stalking is a victim-defined crime, understanding the circumstances under which stalking is identified and reported is critical for awareness, support, and prevention efforts. The present study aims to evaluate stalking identification in relation to lived experience, beliefs/myth endorsement, and characteristics of the stalking incidents themselves (such as form, intensity,

and escalation). Participants (N = 500+) will be provided vignettes that vary in accordance with our variables of interest. They will be asked to assess the scenarios and identify specific points at which they would identify the behaviours as stalking, fear-inducing, and when they would seek police intervention. We anticipate that participants who have not been stalked will fail to recognize harassing behaviours and may only view stalking as such when it involves frequent, intense, and physical episodes. That said, those with lived experience related to stalking may vary more, with the possibility of lowered recognition of stalking cues (as depictions may differ from personal experience) or greater sensitivity to stalking cues and earlier identification. Empirical studies on how stalking is perceived remain limited, despite widespread implications for victims, support, and criminal justice.

Faculty Mentor: Dr. Kristine Peace

Profiles of Perpetrators of Intimate Partner Sexual Violence, Their Sentencing Outcomes, and Risks in Recidivism

By Chella Mae Robles

Historically, intimate partner sexual violence (IPSV) is characterized by more physical violence and coercive behaviours and is often categorized as either intimate partner violence (IPV) or sexual violence (SV; Thomas et al., 2022). Thus, when IPSV cases are enveloped with other sexual assaults perpetrated by non-partners, they are often treated less seriously (Lynch et al., 2019). Even if the case leads to possibly prosecuting the perpetrator, there are many legal challenges (e.g., absence of witnesses, perceived credibility of the victim; Lynch et al., 2019), and the sentencing outcome is often considerably less harsh than seen in cases not involving intimate partners or SV (Bielen et al., 2022). As such, the current study aims to examine whether 1) there are differences in the characteristics of the index offence and perpetrator, sentencing features (i.e., aggravating and mitigating circumstances), sentencing outcomes, and level of risk in reoffending of SV, IPV, and IPSV perpetrators; and 2) whether some of these factors are associated with the severity of sentencing decisions more than the other factors. It is hypothesized that IPSV perpetrators will have committed more severe/violent offences, have more aggravating circumstances (e.g., no remorse), and are more likely to reoffend than SV and IPV perpetrators. The findings of this study will add to the growing body of literature investigating IPSV. Given that previous research suggests that IPSV cases tend to receive lighter sentences, we hope to identify and uncover any factors that may bias the judge's sentencing decisions and, therefore, address or mitigate such bias.

Faculty Mentor: Dr. Sandy Jung

Using ACT to Increase Class Engagement in University Students

By Joel Roy

The transition from high school to university can be difficult for students. In the face of academic failures, students may develop thoughts of self-doubt that interfere with engagement in future opportunities for academic success. Acceptance and Commitment Therapy (ACT) is a process-

based therapy that aims to increase psychological flexibility skills and decrease psychological inflexibility skills. ACT is derived from Relational Frame Theory (RFT), which states that arbitrary stimuli can be put into relation with each other, and the function of one stimulus can transfer to the other stimuli within the relational frame. In the present study, we will use ACT-based exercise to teach psychological flexibility skills to university students to increase class engagement behaviours (attending class, starting assignments early, studying, etc.). Using a non-concurrent multiple baseline across participants design, we will examine the changes in class engagement behaviours across time as psychological flexibility skills are taught. We predict that as psychological flexibility skills are learned, psychological inflexibility and procrastination behaviours will decrease, and class engagement behaviours will increase. Such findings will suggest that psychological flexibility skills are useful in helping students achieve their academic goals.

Faculty Mentor: Miranda Macauley

Does Feeling Heard Improve Emotional Responses to Worldview Conflict?

By Kamille Sandberg

We commonly encounter conflicting attitudes and opinions. Past research finds that encountering worldview conflict elicits temporarily lowered mood and psychological well-being (Brandt et al., 2019). Understanding how to mitigate these negative emotional consequences of worldview conflict may help improve people's everyday experiences. Research has found that in close relationships feeling heard in a conflict can increase well-being (Gordon et al., 2013; Reis et al., 2017). We extended these findings to the study of worldview conflict. Participants completed series of open-ended and closed-ended questions to recall and describe a recent political discussion, focusing on the following: how the discussion went, to what extent they felt a range of specified emotions immediately after the discussion, how they perceived the other, and whether they felt heard by the other. We hypothesized that higher scores on the feeling heard scale would be associated with lower scores on negative emotions (particularly other condemning emotions) and higher scores on positive emotions (particularly happiness) following the discussion. Results supported our hypotheses. Higher scores on the feeling heard scale were associated with lower reported negative emotions, especially other-condemning emotions, as well as increased reported positive emotions. For some conversation topics (i.e., abortion), feeling heard seemed to have a bigger impact on mitigating negative and fostering positive emotions, while for other topics (i.e., COVID) feeling heard was not as strong a predictor of emotional reaction. This study may help guide future research on the topic of how to improve people's experiences of worldview conflict.

Faculty Mentor: Dr. Craig Blatz

We're Queer and We've Always Been Here: The Impact of Learning About Queer History on Young Adults in Alberta

By Japkaran Saroya

A large population of the public lacks knowledge of 2SLGBTQ+ history. The present study aimed to investigate the impact of an educative 2SLGBTQ+ history video within a population of young adults in Alberta. Participation was incentivized through a raffle for a $50 gift card. Prior to the queer history video intervention, baseline levels of (1) self-esteem and internalized homophobia were obtained from 2SLGBTQ+ participants; (2) homophobic attitudes were obtained from cisgender, heterosexual participants; and (3) ratings of connection to the queer community were obtained from both participant groups. These variables were assessed again after watching the video and at an optional follow-up. Open-ended questions were asked after watching the video to gain a qualitative understanding of how the video impacted participants. Key findings include a significant negative correlation between connection to community and internalized homophobia, significant positive correlations between less severe homophobic attitudes and connection to the community, and increased connection to the community throughout the study. Implications and future directions are discussed.

Faculty Mentors: Dr. Eric Legge & Dr. Laura Offrey; Irfan Chaudhry

The Aversive Effects of Infrasound on Zebrafish in an Open Field Test

By Kale Scatterty

The ability to detect infrasound (sub-20 Hz frequencies) has been found in aquatic species, and as such, infrasound may be a source of human-made pollution that could have negative environmental consequences for fish. Human infrastructures can generate infrasound at peak acoustic frequencies that may go unrecognized, the presence of which may be of detriment to the environmental wellbeing of aquatic laboratory animals that are often in proximity to such sources. In this study, wild-type zebrafish (Danio rerio) were exposed to short periods of infrasound at either 5, 10, 15, or 20 Hz and compared to a 0 Hz control group. Motion-tracking software was used to quantify zebrafish movement in an open field test, evaluating variables of arena place preference and locomotion (distance moved & immobility). A significant effect was found at 15 Hz, causing zebrafish to spend more time avoiding the infrasound source. The 20 Hz group also spent significantly less time near the infrasound source, but showed a less distinct aversive response. No differences were found for distance moved or immobility across all groups. These findings show that 15 Hz infrasound frequencies have aversive effects on zebrafish and elicit avoidance of the generating source. Identifying and mitigating sources of infrasound pollution should be undertaken to enrich the environment and wellbeing of laboratory animals.

Faculty Mentors: Dr. Trevor Hamilton & Dr. Rodney Schmaltz

Evaluating the Effects of Infrasound Frequencies on Human Stress and Anxiety Behaviours

By Kale Scatterty

As technology develops, anthropogenic infrasound – Sub-20 Hz frequencies created by, but undetectable by humans – has become an area of interest in behavioural research. Previous

studies have implicated infrasound in behavioural changes such as increased arousal, stress, fear, anxiety, and aversion in aquatic and terrestrial species, including humans. Developing infrastructure has been found to generate acoustic frequencies that peak in the infrasonic range, which raises concerns about what effects they may have on humans as they become more prevalent – particularly in urban areas. This study aims to evaluate this concern by exposing human participants to brief but safe periods of infrasound while listening to happy or scary music. The study will consist of two groups (one listening to happy music and the other to scary music) in which infrasound will be present during listening, and another two groups in identical conditions with no infrasound present. Salivary cortisol – an established biomarker of stress levels – as well as self reports will be collected throughout the study to obtain subjective and objective measures of emotional and behavioural change. Should infrasound be found to increase feelings of fear, anxiety, or stress in the scary music group and no inverse effect be found in the happy music group, this finding would support ongoing research suggesting that infrasound is anxiogenic. If infrasound increases negative as well as positive changes in both the scary music group and happy music group, respectively, then it may be more likely that infrasound elicits general arousal rather than anxiety.

Faculty Mentors: Dr. Rodney Schmaltz & Dr. Trevor Hamilton

Investigating the Anxiety-Increasing Potential of β-Carboline (FG-7142) in Zebrafish

By Kale Scatterty

β-Carboline (FG-7142) is a partial inverse agonist of the benzodiazepine allosteric site at the GABA-A receptor. It has been shown to yield anxiety-increasing (anxiogenic), proconvulsant, and appetite-reducing effects among various aquatic and mammalian species, including humans. It is found naturally in succulents, hallucinogenic plants, as well as tobacco leaves, and may be made endogenously. While previous literature has focused on seizure-inducing effects, interest is growing in the anxiogenic effects it has on terrestrial and aquatic species to model high-anxiety states. This study aimed to (1) establish a dose response curve for anxiety-like behaviour in zebrafish and (2) evaluate FG-7142 in a conditioned fear paradigm. An open field test and novel object approach test were used to generate a dose response curve of FG-7142 on anxiety-like behaviours. A U-shaped distribution curve was found with peak responses in increased immobility, lowered velocity, and lowered distance travelled at 10.0 μM. These findings suggest that FG-7142 has a significant effect on some behavioural markers of increased anxiety. Currently, this effective dose of 10.0 μM is being used to evaluate fear and anxiety conditioning in zebrafish using a 3-day repeated exposure and subsequent submerged plus maze paradigm based on red-green colour preference. Should FG-7142 have a mediating effect in the formation of conditioned fear and anxiety responses, it is expected that zebrafish in this test should avoid locations in the plus maze associated with the colour that was present during their respective repeated exposures.

Faculty Mentor: Dr. Trevor Hamilton

Sexpectations: Coercive Control Experiences in Sexual Minorities

By Aly Shurvell

Previous research has demonstrated that sexual minorities (gay, lesbian, or bisexual) experience disproportionate rates of sexual violence relative to their heterosexual counterparts. While sexual violence is a broad construct, recent studies have focused on the use of coercive tactics to obtain sex and whether these tactics influence perceptions of consent. Limited research exists that has assessed sexual coercion in the context of sexual minorities, and how perceptions may differ as a function of a victim's sexual orientation. The present study uses a 2-part design to evaluate relationships between sexual minorities and sexual coercion. Part 1 will address experiences of sexual coercion across various sexual identities in relation to both victimization and perpetration. Part 2 will examine whether sexual orientation influences perceptions of sexual coercion and consent. Participants will be presented with vignettes that vary according to sexual orientation (heterosexual/gay/lesbian/bisexual), level of sexual coercion (low/high), and relationship context (stranger, acquaintance, dating, established relationship). Participants will provide ratings of levels of coercive control, sexual consent, and the degree to which victims are viewed as 'responsible' for their experience. In general, we predict that sexual minorities will report more instances of perpetration and victimization in relation to coercive control. Further, we predict that coercive experiences within sexual minority orientations will be minimized and more victim blaming will occur. This study has implications for how the experiences of sexual minorities are interpreted and evaluates whether minority sexuality presents further barriers to reporting sexual violence.

Faculty Mentor: Dr. Kristine Peace

Lateralization of facial emotion recognition in the human cerebellum: A transcranial direct current stimulation (tDCS Study)

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 (e.g., fear, anger, sadness). 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. To examine this, we delivered transcranial direct current stimulation (tDCS) over the left cerebellum of 67 healthy participants, randomly assigned to a tDCS condition (anodal, cathodal, or sham), and had them complete a facial emotion recognition task pre-tDCS, during-tDCS, and post-tDCS. Anodal and cathodal cerebellar tDCS did not significantly alter participant reaction time and accuracy. Participants did get faster, less variable, and more accurate over time, especially for positive emotions (happy), compared to negative emotions (angry and sad). However, due to relatively

limited research examining the role of the cerebellum in emotion processes, and the limitations of the current study, we cannot say for certain why there were no effects of tDCS.

Keywords: cerebellum, cerebellar lateralization, cerebellum and cognition, facial emotion recognition, transcranial direct current stimulation (tDCS)

Faculty Mentor: Dr. Christopher Striemer

The Terpene (-)-α-pinene can Alter Locomotion in Zebrafish (Danio rerio)

By Alycia Stewart

Canada has recently legalized cannabis, and this has resulted in an increased focus on genetic strains and chemical compounds in cannabis. Terpenes are aromatic compounds found in cannabis and other plants that could have medicinal value. A terpene found in cannabis and other products is α-pinene. This study used (-)-α-pinene to examine locomotion, anxiety-like behaviour, and boldness in zebrafish (Danio rerio) using a motion-tracking software system. The four experimental groups included a control, and (-)-α-pinene groups at 0.01%, 0.02% and 0.1% (~n=15 each) and each fish was exposed for 10 minutes prior to being placed in the open field test and then the novel object approach test. The time in virtual zones in the arena, distance moved, velocity, meandering, high mobility and immobility of the fish were quantified. There was a significant difference observed between the control and 0.1% group in distance moved, velocity and high mobility in both tests. A significant difference was also found between the control and 0.1% group in time spent between virtual zones in the open field test. No significant differences were found in the other parameters and groups. Our results suggest that certain concentrations of (-)-α-pinene may reduce anxiety-like behaviours in zebrafish and impact their locomotion. This research will be used to supplement previous findings as well as inform future research regarding the impacts of different terpenes.

Faculty Mentor: Dr. Trevor Hamilton

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

By Pamela Stuart

My research will explore the communication system of American Pika (Ochotona princeps) with a specific focus on the individual identity cues in their short calls. American pika 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 pika in the Highwood region of Kananaskis, Alberta. Calls were measured and compared to determine if any call variation exists between individuals using discriminant function analysis. 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.

Faculty Mentor: Dr. Shannon Digweed

Examining Anxiety Sensitivity, Metacognitions, and Anxiety Symptoms

By Kevin Styba-Nelson

Generalized anxiety disorder (GAD) is defined by chronic, distressing worry regarding multiple areas of a person's life. One thought pattern that is known to contribute to GAD symptoms is anxiety sensitivity (AS). AS can be thought of as the fear of anxiety and its consequences. Two other thought patterns that contribute to GAD are positive beliefs about worry (PBW) and negative beliefs about worry (NBW). PBW refers to beliefs that worry is a positive tool for things like problem solving. NBW refers to beliefs that worrying is harmful or uncontrollable. While both PBW and NBW are related to GAD, NBW's relationship is much stronger. In Fall 2022, I conducted a study that examined how PBW and NBW interact with AS to contribute to GAD. Given NBW's much stronger relationship with GAD than PBW, I predicted that only NBW would interact with AS to contribute to GAD symptoms. Data from 573 student self-reports showed that AS, NBW, and PBW all independently related to GAD without relying on one another. However, these findings may have been affected by an abnormally anxious student sample. Given this, a second running of this study with a non-student sample is planned, which will additionally examine how fears of uncertain future events, as well as tendencies to experience negative emotions, are associated with GAD. While these preliminary findings were unexpected, they provide a valuable foundation for future research, and may be relevant to understanding how different thought patterns can contribute to the same disorder.

Faculty Mentor: Dr. Alexander Penney

Stressed and Stuck: How Can We Motivate Students to Use Effective Coping Strategies?

By Darby Tarrant

University students face high levels of stress and are not using adaptive coping strategies. We conducted a pilot study with 28 MacEwan University students to investigate student barriers to coping and what coping strategies they use. Almost half of our sample reported that they only sometimes try to cope with stress and many were not engaging in adaptive and effective coping techniques. The main barriers to coping that students reported were that they often forget to use coping strategies in the moment, are unaware they exist, they have not worked in the past, they have not been taught how to use them effectively, and they lack motivation and time to use them. Our study is designed to address these barriers by educating students about two fast and effective coping techniques (i.e., deep breathing and cognitive reappraisal) and using biofeedback to show the effectiveness of the techniques and increase their salience to make them memorable. Participants in the education groups performed a stress induction task before learning one of the two coping methods. Participants in the biofeedback groups also had their heart rate and blood pressure measured before and after engaging in the coping technique they

learned. Pilot results indicate that the stress task was not effective at inducing stress. Preliminary evidence suggests that both deep breathing and cognitive reappraisal effectively reduce biofeedback markers. In the future, we will investigate whether a growth mindset, education, and biofeedback lead to increased use of the learned coping technique in the future.

Faculty Mentor: Dr. Michele Moscicki

Falling Through the Cracks: The Gaps in our Healthcare System Integration of Applied Behavioural Analysis in Pediatric Primary Care

By Darby Tarrant

When parents come into an emergency room asking for help in managing their children's behavioural problems, there is no referral system in place for hospital staff to help families find or obtain effective behavioural intervention services. Parents are instead told to seek out respite provider resources or are given a referral to a psychiatrist to get or manage medication, which are "band-aid solutions". The healthcare system is inefficient at ensuring we are getting to the root of the challenging problems and addressing the needs of children. Families are burning out and children with behavioural concerns are falling through the cracks. Our study discusses a potential plan to create a new referral system for an out-patient behavioural assessment protocol that can be used in the hospitals for families dealing with their children's challenging behaviours. The documents developed could be then given to the hospital decision-makers regarding an alternative option in dealing with emergency room referrals involving families seeking help with their children's behavioural problems.

Faculty Mentor: Miranda Macauley

He Said, She Said, They Said: Gender Identity, Displayed Emotion, and Perceptions of Sexual Assault

By Alex Tiller

Studies demonstrate that gender minorities experience heightened victimization rates relative to cisgender persons. However, little is known regarding how prospective jurors perceive these victims. The present study utilized a between-subject multivariate design evaluating perceptions relating to the crime, victim, perpetrator, and criminal justice responses. Participants (N = 243) read a trial transcript that depicted victims in an ambiguous sexual assault trial as either cisgender men, cisgender women, transgender men, transgender women, or nonbinary persons and as exhibiting either high or low levels of emotionality. After reviewing the trial transcript, the participants completed a judgment questionnaire and two measures of bias in relation to gender and sexual identity. Our data yielded several interesting findings within an applied sample, particularly concerning emotional displays for nonbinary or transgender victims. In particular, participants viewed nonbinary victims (relative to transgender and cisgender victims) as least credible (i.e., subject to victim blaming) when they displayed high levels of emotion and as most credible when they displayed low levels of emotion. However, the opposite effect appeared for transgender persons (i.e., least credible in the low emotion condition). This effect was most

prominent for transgender women, whom participants viewed as the least credible overall. The results of this study suggest that we have varying expectations regarding gender minority victims, particularly concerning their displayed emotion levels. These findings have important implications for the criminal justice system, including mitigating victim biases against gender minorities.

Faculty Mentor: Dr. Kristine Peace

Canadian Undergraduate Perspectives on Medical Assistance in Dying (MAiD) for Mental Illness: Does Psychiatric Illness Type and/or Age Influence Acceptance of MAiD?

By Christina A. Tomaras

In 2024, Canadians whose only medical condition is an untreatable mental illness and who otherwise meet all eligibility criteria will be able to request Medical Assistance in Dying (MAiD). This study investigates the attitudes and beliefs of undergraduates towards widening the scope of MAiD. We were interested in understanding if age and type of mental illness influenced undergraduates' acceptance or rejection of MAiD. To our knowledge, no studies have investigated the perspectives of Canadian undergraduates regarding this controversial legislation, including the factors that may predict acceptance or rejection of MAiD for mental illness.

413 undergraduate students participated in this study which examined the factors that correlate with the acceptance or rejection of MAiD for untreatable mental illness. Four scenarios were presented in which age (older or younger) and illness type (depression or schizophrenia) were manipulated. Demographic questions and measures assessing personality, religion, depression, anxiety, stress, attitudes towards euthanasia (including a revised version for mental illness), fear and acceptance of dying and death, and stigma towards schizophrenia and depression were administered. Questions assessing participants' general understanding of MAiD and their life experiences with death and suicide were also asked.

Most of the participants accepted MAiD for both depression and schizophrenia. As hypothesized, support for MAiD was higher for patients with schizophrenia than for depression. Additionally, as predicted, support was higher for older individuals suffering from each mental disorder when compared to younger individuals. Variables such as religion, personality and political affiliation were also associated with acceptance or rejection of MAiD.

Faculty Mentors: Dr. Lori Harper & Dr. Russ Powell

Discrimination and Picking up Political Cues

By Arshdeep Vaid

Sometimes people's personalities and beliefs cause them to give off cues that indicate to others what their beliefs or personalities are (Motyl, 2016). Ideological ambient cues dictate desired social groups, work and school environment (Motyl, 2016). (Research finds that encountering ambient cues which indicate differences in ideology in school and work environments can lead

to feelings of exclusion. For instance, women exposed to highly masculinized computer science labs feel felt excluded from the environment and expressed less willingness to join computer science programs (Cheryan et al., 2009; Oyserman et al., 2006). In this project, we hope to extend the findings from the previous literature to analyze how ambient cues affect individuals who have faced higher levels of discrimination. Specifically, we propose that those who have experienced discrimination more in the past are going to be more aware of what cues indicate someone's political or ideological stance because they have learned through experience to pay attention to this. We will present participants with ambient cues which indicate that individuals within that environment hold different views than the self. We will then measure how likely people were to notice those cues within that environment and then measure their emotional response to those cues. We hypothesize that those who have experienced discrimination will be more likely to notice that the cues existed, and to show a stronger emotional reaction when they do notice them. These findings could indicate the importance of creating an environment that leads to greater levels of inclusion.

Faculty Mentor: Dr. Craig Blatz

Neuropharmalogical Effects of Acute Terpinolene Administration on Zebrafish Behaviour

By Ryan Verbitsky

Anxiety disorders are prevalent worldwide and have worsened with the COVID-19 pandemic. There are numerous treatments for anxiety that range from behavioural therapies to pharmacological ones. Still, there is no gold standard that works for everyone, and therefore a need to examine non-traditional treatments. Previous studies have used animal models to test the effect of terpenes on anxiety-like behaviour in rodents and zebrafish. Acute limonene exposure was found to regulate anxiety-like behaviour in mice and zebrafish. Terpinolene is a similar terpene with therapeutic properties previously established to produce antinociceptive and anti-inflammatory effects from action on the serotonergic pathways in the central nervous system. This study examined whether terpinolene could alter anxiety-like behaviour and locomotion in zebrafish. To answer this question, we measured behaviour relating to general locomotor activity levels, anxiety, and willingness to explore a new environment in an open field test and novel object approach test after exposure to terpinolene at 0.01%, 0.05%, and 0.1% concentrations. Terpinolene had significant effects on anxiety-like measures in the open field test, such as time spent in the thigmotaxis (outer) or center zone, as well as locomotor variables, swimming velocity and immobility at the 0.1% dose. However, when a novel object was introduced to the arena, there were no significant increases in boldness to that object. This study demonstrates that terpinolene can have a sedative or anxiolytic effect in zebrafish and may have potentially valuable medicinal properties.

Faculty Mentor: Dr. Trevor Hamilton

Finding comfort in a world of uncertainty: Exploring Ecological grief and anxiety through support circles

By Celina Vipond & Haylee Hatton

The exponential effects of climate change have increased fear and uncertainty of youths' and young adults' futures, negatively impacting psychological well-being. Hickman et al. 2021, found that 60% of youth (aged 16-25) feel "very" or "extremely" worried about climate change, and 45% of participants say that climate anxiety affects their everyday life. MacEwan's Wellness and Psychological Services (WPS) are seeing an increased prevalence of ecological grief and anxiety expressed by students, specifically those studying environmental science; however, there is very little support for these individuals. Grief circles have been used to address grief and loss in various ways in psychology. When facilitated well, group discussions and grief circles remain among the most effective ways to process eco-grief, eco-anxiety, and climate trauma. With this in mind, we decided to bring an eco-grief peer support group to MacEwan campus. This project brings together WPS, Eco-SAMU, and student groups to support participants as they process their experiences of eco-grief and eco-anxiety. This includes the creation of resources and the implementation of a facilitation training program for peer supporters to build skills and confidence to facilitate the volunteer-led eco-grief peer support circles. Ultimately, our initiative seeks to build the capacity of students, staff, faculty, and the wider community to empower action and environmental justice initiatives in a healthy, sustainable, and inclusive way. We envision this project becoming a staple Eco-SAMU program with the support of students and staff so that support circles can be held on a regular basis.

Faculty Mentors: Helena Dayal & Sydney Bennel

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

By Alana Walker

The present study partially replicated a study by Boutain et al. (2020) by delivering a telehealth graduated guidance intervention to two mother-son dyads to increase the independence of the autistic sons' toothbrushing behaviours. This intervention involved remote, synchronous behavioural skills training (BST) for the mothers who implemented the intervention, starting with oral and video modelling quizzes and finishing with eight weeks of live parent coaching toothbrushing sessions. While only one mother-son dyad completed this intervention, both mothers achieved high levels of procedural fidelity, and the son who completed the intervention achieved high, stable toothbrushing independence. Meanwhile, the preliminary data of the other son showed promise. Both mothers expressed near-perfect satisfaction with the intervention.

Faculty Mentors: Miranda Macauley & Dr. Russ Powell

Parasocial Relationships and Materialism in the Media: The Moderating Role of Motivation

By Emily Woods

The literature has identified a positive relationship between materialism and social media intensity, as well as between materialism and celebrity worship. However, the literature on the relationship between materialism and parasocial relationships needs to be more thorough.

Parasocial relationships are characterized by the one-sided online relationship audience members experience with media influencers, and materialism is when individuals hold values that prioritize image, popularity, making a lot of money, and having a lot of possessions. Previous studies have identified how materialism is related to the processes engaged in during extensive media consumption, as well as the attitudes involved in the increase in materialism as a function of celebrity worship, particularly envy. This study is aimed at expanding on a recently developed social comparison framework and determining whether the differing attitudes consumers hold regarding the fortunes-of-influencers (FOI) and their differing motivations behind media usage (process and social) are related to parasocial relationship intensity (PSI) and resulting materialistic outcomes. We will employ a correlational analysis using a sample of MacEwan first year students, the majority of which aged 18-24, who report frequent activity on social media, assessing the relationship between social comparison engagement, social media processes, FOI, PSI, and materialistic outcomes. The results and conclusion will be reported at a later date once the data has been collected.

Faculty Mentor: Dr. David Watson

Music Entertainment Effects on Attention in Children with Autism Spectrum Disorders

By Man Wai (Krystal) Yik

Autism spectrum disorder (ASD) is a developmental disorder characterized by difficulties with social interaction, communication, and attention (American Psychiatric Association, 2013). Previous research has shown that music can enhance the attention of children with ASD and promote active social interaction. To extend these findings, music from singing bowls will be explored as a method to improve the attentional abilities of children with ASD. The acoustic properties of singing bowls have been widely used in Eastern traditions to induce relaxation, which can benefit focused attention. The research goal of this study is to determine whether exposure to singing bowl music during a structured play task can enhance ASD children's performance in a subsequent visual attention task. It is predicted that exposure to the calming acoustic features of singing bowl music, in comparison to a no music condition, will enhance performance as shown by increased accuracy and decreased latency in the search for a visual target among distractor items. In addition, the benefit will be greater for children with ASD than for neurotypical children. The findings can be used to inform the development of accessible therapeutic techniques to improve children with ADS's attention, which will enhance their cognitive and socio-emotional outcomes.

Faculty Mentor: Dr. Tara Vongpaisal

Social Work

Falling Through the Cracks: Case Management of Clients Accessing Services in A Settlement Agency, Edmonton, Alberta

By Courtney Drayton & Carmen Pedersen

Immigrants and refugees need access to a wide range of services upon arrival to Canada and during settlement. This paper presents a study utilizing case study methodology to explore a settlement agency's care coordination process for clients who are accessing services for complex issues in Alberta. The aim of the study is to develop a case management framework to meet the needs of the agency's clients. Data was collected from three focus group with 20 frontline staff and three in-depth individual interviews with team supervisors. Barriers hindering the coordination of client care within and outside the agency, as well as strategies and interventions for addressing these barriers will be discussed. Findings from this study will inform the agency's policies and practices to strengthen care coordination for immigrants and refugees

Keywords: case management, care coordination, settlement agency, immigrants, refugees

Faculty Mentor: Dr. Hellen Gateri

Afrocentric Knowledge Within the Context of Social Work Education and Practice

By Nafisa Moallim & Precious Osadjere

Our poster examines the results of a scoping literature review and seminal works search related to the existing knowledge on the inclusion of Afrocentric paradigms within Social Work and African/Black studies disciplines. It presents the firsthand findings about identity development and Africanness related to knowledge gathered through an ongoing research project on Afrocentricity and Social Work. Our poster's purpose is to highlight the necessity to implement the recommendation of the United Nations People of African Descent decade which is a concrete inclusion of Afrocentric education within Social Work discipline in particular, and in higher education. It uplifts People of African descent' contributions to sciences and community well-being over centuries of a true world history. As two first-generation African Canadian graduate students, this study allowed us to explore the spaces we occupy within graduate studies focused on Eurocentric frameworks. Our poster, therefore, discusses the intersecting identities that have shaped our lives, by allowing us to dissect the theories and empirical evidence surrounding Afrocentricity and Social Work.

Faculty Mentor: Dr. Somnoma Valerie Ouedraogo

From Global Practices to Global Mindedness: Utilizing Reflexivity and Cultural Relevance Towards a Global Indigenization of International Social Work

By Eva Ociepka-Mengel & Samantha Heuft

The importance of the decolonization of social work curriculum around the world has increased in the past 10 years. Due to its strong colonial legacy, Social work education, practice, and research are called to break free from Eurocentric western value based theories and methods of practices in the social work profession. Our poster focuses on the concept of global mindedness and reflexivity as the results of a scoping literature review about the development of concepts and related culturally grounded practices in the field of International Social Work in Germany and Canada. Our poster presents the nature and scope of International Social Work in both

countries in the context of internationalization, glocalisation, and indigenization. The purpose of our poster is to explore Indigenous Beading as an example to articulate mindedness-reflexivity as locally and culturally relevant practices to Indigenization in the context of International Social Work. Our poster will discuss how practices around the world and existence of global indigeneity that is not essentialized but rather contextualized to be relevant on a micro and macro level of practices can enhance the decolonization of International Social Work practice.

Faculty Mentor: Dr. Somnoma Valerie Ouedraogo

Three years of individual and community-based research in Indigenous worldview and housing

By Celina Vipond & Cheyenne Greyeyes

This presentation will follow researchers Cheyenne Greyeyes and Celina Vipond's journey for the past three years working in Indigenous research. For Celina, that journey started with a summer research assistant position with the MacEwan Office of Research Services which connected her to their research supervisor, Cynthia Puddu from the Faculty of Health and Community Studies on the project 'Indigenous Youth Coming Out Of Care', which involved an Indigenous Community-Based Participatory Research approach with an Indigenous community partner. Cheyenne was hired on to the same project, which sparked years of collaboration including a publication with Radical Housing Journal titled 'What is home? Wisdom from nêhiyawêwin", podcasts, blog posts, workshops, and conference presentations two years in a row at the Canadian Alliance to End Homelessness. This work led to opportunities in youth work and counselling at Indigenous organizations, and much insight gained in research ethics, community engagement, and Indigenous knowledge keeping. We have had to learn how to negotiate wearing different hats and working in a space that not only draws on academic knowledge, but also oral teachings, ceremony, and Indigenous knowledge, as in the concept of Two-Eyed Seeing. Through this we show how students can find their career paths through diverse roles in research and collaboration, and that Indigenous knowledge has a legitimate

Faculty Mentor: Dr. Cynthia Puddu

BIPOC Community Contributions in Volunteerism and Civic Engagement

By Cheryl Williams & Vicki Shaughnessy (Volunteer Alberta)

The purpose of this project is to challenge the lack of representation and acknowledgement in the nonprofit sector, related to helping from the BIPOC community. Dominant discourse and ideology through a neoliberal, western cultural lens highlights deficit-based constructs when it comes to community engagement with BIPOC folks. Through Photovoice and storytelling, we can challenge this deficit-based perspective with positive examples of BIPOC people contributing to community through volunteerism and civic engagement.

Volunteer Alberta posted a call for Photovoice submissions through social media and Volunteer Connector, an online volunteer hub. We requested photos from BIPOC community members

representing what it means to them to gift their time and energy to helping community either through formal or informal activities. We then asked participants to describe what the photo is depicting, and what is important to them about the image they submitted. Interviews were conducted with 3 participants. Interviews were transcribed and coded for common themes that appeared amongst the participants in relation to their experiences of helping community. Findings demonstrated BIPOC folks are in fact very engaged civically and socially. This suggests more can be done in the nonprofit sector to acknowledge and represent the valuable contributions of BIPOC community members.

Faculty Mentor: Dr. Somnoma Valerie Ouedraogo

Sociology

Workplace Inequality

By Abe Aboughauche, Anna Kuzmyk*, Anastasiya Levytska*, Bohdan Popovych*, Cailin Senger, Yuliia Tkachuk*, & Yelyzaveta Viktoryenkova*

Our research project aims to investigate inequalities in the workplace. Being a complex and multi-faceted issue, it affects millions of workers worldwide. We will focus mainly on gender discrimination, the impact of immigration and minorities, and ageism - the most prevalent forms of inequality seen in the workplace. This paper will explore these different types of workplace inequality and the consequences they have on individuals and society as a whole. In addition, we will explore the potential solutions for promoting and creating a more equitable work environment that will benefit every person.

Faculty Mentor: Dr. Michael Gulayets

*Students from the Ukrainian Catholic University.

Displacement of Ukraine

By Alex Alphonse, Anastasiia Kunychak*, Preeya Lall, Oleksandra Onystiuk*, Viktoriia Polshyna*, Solomiya Smolynets*, & Anastasiya Tovstanovska*

This paper delves into the experiences of both internally and externally displaced Ukrainians as a result of the Russo-Ukraine war. The article presents a comprehensive analysis of the different consequences of displacement on mental health and settlement, exploring three levels of analysis: societal, institutional, and individual. At the societal level, the article examines policies in place to support displaced individuals in Ukraine. Meanwhile, at the institutional level, the article focuses on social forces like family, employment, and housing that affect displaced individuals' access to resources. At the individual level, the paper considers the psychological effects of displacement, including language barriers, social isolation, discrimination, and trauma. Through a literature review, the article highlights the impact of war on the mental health of displaced individuals and the need for individualized resources like psychotherapy. Successful initiatives for psychological and pedagogical support for IDPs are also discussed. Additionally, the review underscores the impact of the war on family and social networks, particularly for

children, and the need for preventative, curative, and remedial care. By understanding these experiences, the paper argues that effective policies and support systems can be developed for displaced individuals. The paper concludes with suggestions for addressing the challenges of displacement for Ukrainians, highlighting the importance of individualized care, community support, and inclusive policies.

Faculty Mentor: Dr. Michael Gulayets

*Students from the Ukrainian Catholic University.

The Effect of Russian Colonialism on Ukrainian cultural identity

By Yuliana Boychuk*, Rory Dumelier, Yevheniya Fau*, Khrystyna Mysiv*, Anastasiya Sereda*, Alison Toews, & Courage White

Since 2014, Russian aggression in Ukraine has exponentially increased, culminating in a war between the two nations. As Russian influences and colonial practices continue to dominate Ukraine, Ukrainian identity has come into question. As a nation, Ukraine, now more than ever, has been fighting to show its own cultural identity separate from Russia. However, one cannot downplay the impact Russian colonialist practices have had on Ukrainian identity and how influences it. We can better understand how this has affected Ukrainian identity by examining Russian-rooted corruption, food perception, and propaganda directed at Ukraine. This research aims to answer how Russian colonialist practices such as corruption, food control/perception, and propaganda have shaped Ukrainian cultural identity.

Faculty Mentor: Dr. Michael Gulayets

*Students from the Ukrainian Catholic University.

Gendered Representations of Crime in the Media

By Danylo Chavaha*, Mackenzie Darby, Maksym Kohutiak, Lorena Rafal, Oleksandra Shelikhevych*, Valeriya Zadorozhna*, & Yaryna Zaviyska*

Mass media is the most popular form of getting information; as such, it holds a lot of power in creating and maintaining social norms. This presentation will take a deeper look at how the media represented crime and gender, creating gender stereotypes around criminals and victims. To accomplish this, the researchers have looked at studies on how media controls how society sees social issues, how media constructs gender norms, and how media assigns specific gender standards regarding crime. This presentation will discuss how media representation reflects and reinforces stereotypes about gender in crime, such as victim blaming and male representation in crime by the media.

Faculty Mentor: Dr. Michael Gulayets

*Students from the Ukrainian Catholic University.

Effects on emergency department wait times due to Covid-19

By Riya Dhunna

A qualitative study is being altered to a poster presentation format. This qualitative study explored the extent to which the Covid-19 pandemic has impacted Canadian hospitals and emergency department (ED) wait times. A purposive sampling procedure was used for this study to conduct a content analysis on a sample of 50 of the most recent and relevant comments that included reactions, personal experiences, and possible solutions towards ED wait times from a CBC News article. A coding procedure examined any frequent themes and subcategories in the comments. Results showed six consistently present categorical themes: Wait Times, Shortage of Workers, Underfunded Healthcare System, Unrelated Covid-19 Symptoms, Avoidance and Solutions. Furthermore, additional subcategories were determined from the themes. This study analyzes the intense backlogs of surgical cases and waiting rooms, resulting in adverse patient outcomes. Additionally, this study explores the underfunded and understaffed healthcare system, the stresses healthcare workers face daily, and possible solutions to mend this broken healthcare system.

Faculty Mentor: Dr. Diane Symbaluk

The Normalization of Weight-Cutting in Combat Sports: A Sociological Analysis

By Alexandra Gagnon

This qualitative study examined weight-cutting in combat sports through a sociological lens. Semi-structured interviews with six nationally ranked Canadian Judo athletes were used to learn more about athletes' attitudes and experiences with weight-cutting. Results revealed a process by which athletes come to normalize weight-cutting and internalize it as a necessary practice intertwined with their athletic success and identity. Over their career, athletes are introduced to weight loss methods and taught definitions favourable to weight-cutting practices by coaches and other athletes. Once athletes start engaging in this practice and achieve success in that weight division, it becomes their master status which defines not only their athletic identity but their views on the sport. Results from this study are significant as they provide insight into high-performance athletes' attitudes towards and experiences with weight-cutting and they suggest ways in which the sport can be modified to create a safer environment.

Faculty Mentor: Dr. Diane Symbaluk

Representation of Multiculturalism Within the 2021 Federal Election

By Aaron Glenn

How does descriptive representation, linked fate, and elite discourses impact the views of legitimacy of a government? In this study, we examine how politicizing race, ethnicity, and religion can lead to voters to be swayed to vote for one party over another. It was found that although descriptive representation was commonly thought to impact views, it was elite

discourses focusing on the devaluation of minority groups that were more impactful on impacting the perception of constituents.

Faculty Mentor: Dr. Kalyani Thurairajah

Medical Racism in Canada: A literature Review

By Shahad Hassan

This presentation will focus on providing you with a deeper and broadened sociological understanding of how BIPOC individuals are harmed and disadvantaged by our healthcare system. Moreover, the presented material will be based on a wide range of literature that views healthcare and medical schools as a racialized institutions that inherently supports and perpetuates the current system of oppression. Over all, attending this presentation will equip you a stronger understanding of how race and racism are embedded in our healthcare system.

Faculty Mentor: Dr. Alissa Overend

A Woman's Role in a Mans World: Understanding Gender in Corrections

By Samantha Hermary

Compared to other organizations within the criminal justice system, the world of corrections is hidden from public view, therefore, quickly forgotten. But, like many of these males dominated organizations, there are significant issues regarding gender and women's roles in the job. With the considerable lack of research regarding correctional officers within Canada and the relatively small percentage of women in the correctional workforce, it is vital to expand this topic to understand the complication of a gendered role. Research has shown issues regarding defeminization, over-sexualization, harassment and emotional labour among female correctional officers and the lack of the support they may receive. With all these persistent issues, we ask ourselves, why do women continue on a career path that appears to be working against them? More specifically, how does gender influence women's experience in long-term careers in corrections? To answer this, we conducted in-depth qualitative interviews with women who maintained long-term roles in Correctional Service Canada. This presentation will discuss these women's gendered experiences working within a masculine organization, how their gender affected their relationships and job expectations, and whether the culture has changed throughout their careers.

Faculty Mentor: Dr. Amanda Nelund

Investigation into the Implementation of Rehabilitation in the Penal System

By Ashu Kito, Kateryna Kuzmuk, Sofiia Maksymovych*, Yaryna Predzymyrska*, Ethan Simmons, & Kirpal Thind

The question of how criminals must be treated has always been in the interest of society. Modern research suggests that the punitive approach to imprisonment, which was used for hundreds of years, exacerbates the issue of imprisonment rates. Demand for reform and rehabilitative processes has also arisen due to a societal shift in perception. The rehabilitative approach, which modern prisons are in charge of, aims to reduce crime and foster public safety, treating offenders as patients needing therapeutic care. But do prisons rehabilitate prisoners as they should? So, in our research paper, we will explore the effectiveness of prison rehabilitation. Moreover, to make our research more accurate, we consider factors such as age, race, and gender which may influence the effectiveness.

Faculty Mentor: Dr. Michael Gulayets

*Students from the Ukrainian Catholic University.

Inefficacies of the ICC: A historical and socio-legal analysis

By Natalie Mamo

No abstract available.

Faculty Mentor: Dr. Daniel Alati & Dr. Amanda Nelund

Citywide Youth ID Access: Youth Empowerment and Support Services

By Samantha Mullin, Camila Balboa, Neha Sharma, & Natalie Mamo

The purpose of this project was to collect data regarding the barriers faced by marginalized and oppressed at-risk youth in the Edmonton community in accessing government issued personal identification to improve the accessibility of support services for marginalized populations. The study involved in-depth interviews and focus groups with youth aged 15-24 connected with Youth Empowerment and Support Services (YESS). YESS is a non-profit organization that provides immediate and low-barrier 24/7 shelter, a drop-in resource center, temporary supportive housing, and support for young people aged 15–24. The unique experiences, barriers, needs, and perspectives surrounding personal ID were the main focus of this project. From this research we have identified key barriers to accessing ID such as long wait times, high costs, lack of available/easily accessible information, small number of support services available to support youth, and not having the required documentation due to the unsafe/unstable situation these youth are experiencing. Some key solutions identified were the need for consistent and clear information on how to get/replace ID, reduced costs, reduced wait times, more funding and staff support at non-profit youth support services, higher quality materials for ID, and safe boxes for ID to be kept in when it is not needed.

Faculty Mentor: Dr. Emily Milne

Perceptions of Dairy Farms on the Environment: A Content Analysis of TikTok Comments

By Sarah Ostapovich

This study examined the public perceptions of dairy farms on the environment by viewing comments to a TikTok video, which presented a claim that the dairy industry has had a decrease in its environmental impact. A content analysis was conducted with initial and secondary evaluations, finding 5 broad categories which included positive and negative perceptions of the dairy industry, as well as a further 6 themes including informative, clarification, blaming humans, veganism, critical, and education. The most common theme was informative, encompassing 38% of the relevant comments. The findings indicated proficient use of scientific research, critical considerations of the video, and reflected the biases and influences found in social media and popular culture.

Faculty Mentor: Dr. Diane Symbaluk

Towards Indigenous Food Sovereignty

By Ronak Rai

Food insecurity refers to an individual's lack of access to sufficient, safe, and nutritious food which would enable them to lead a healthy life. Today, urban Indigenous communities in Canada face wide-scale food insecurity due to historical injustices of the past. Colonialism has displaced Indigenous peoples from their lands, destroying their culture and assimilating them through extreme measures. The forced eradication of the buffalo, the Indian Act, the Residential School System, and a series of highly restrictive food programs represent some of the most destructive influences on increasing food insecurity among Indigenous communities. As such, there is an ongoing need to support efforts in revitalizing Indigenous ways of life, which includes addressing the issues surrounding Indigenous food systems. Indigenous Food Sovereignty (IFS) involves activities that consider the sociocultural meanings, acquisition, and processing techniques of Indigenous food, which recognizes the sacred, participatory relationship between Indigenous peoples and their foods. For instance, IFS efforts include but are not limited to supporting hunting, fishing, trapping, foraging, gardening, and preservation projects. IFS provides opportunities for restoring cultural practices and can help develop a sense of healing, connection, and empowerment. Reciprocity (i.e., a broader appreciation of the connection between food and land) through IFS efforts allows for past and future generations to become part of the connection to food. As such, food systems in Indigenous communities go beyond the need for sustenance and instead entail a variety of efforts to reintroduce reasonable and adaptive efforts of rebuilding Indigenous food systems and ways of life.

Faculty Mentor: Dr. Alissa Overend

City Wide ID Project : C5

By Randi Sempala, Yaseen El-Hakim, & Emma Parker

Looking into barriers to accessing ID for Edmonton Youth: C5 Hub

Faculty Mentor: Dr. Emily Milne

Sharenting and Exploitation: A Content Analysis of Public Reactions to the Wren Eleanor Situation

By Alyssa Stratman

This study analyzed responses to the viral sharenting case of Wren Eleanor to understand how people react to sharenting and related allegations of child exploitation. A sample of 50 comments was created by retrieving the first 25 comments displayed on two TikTok videos. The sample consisted of an equal number of positive reactions (i.e., those supportive of Wren's mother and her sharenting) and negative reactions (i.e., those critical of Wren's mother and her sharenting). The positive responses had five themes: Victim, Opposition, Encouragement, Emotional Attachment and Involvement, and Advice. The negative responses had four themes: Perpetrator, Exploitation, Fear, and Action. This study demonstrated that parasocial relationships and interactions potentially play a key role in how people react to sharenting and allegations of child exploitation.

Faculty Mentor: Dr. Diane Symbaluk

Student Experience and Reactions to Online Learning on Facebook: A Content Analysis of Remote Learning Issues during COVID-19

By Kasandra Vallee

This study examines the complications of remote learning processes during the COVID-19 pandemic in regard to Grant MacEwan University students. Through a qualitative approach, this content analysis examined 125 comments to a Facebook post, identifying key themes within students' feedback on online learning: work overload, professor issues, disorganized system, burnout, feeds, and others. The most prevalent categories discovered were work overload (35.20% of comments) and professor issues (28.00% of comments). Although this study emphasized student experience with remote learning, sub-categories of the main findings further discovered the ways in which students experienced these obstacles. This study contributes to at-home learning complications, providing knowledge on how to fix issues surrounding Universities' remote learning practices.

Faculty Mentor: Dr. Diane Symbaluk

Masked Reactions: Public Reactions to a Masking Update by the Premier of Alberta

By Naomi Wall

This qualitative study was conducted to explore attitudes and reactions towards a tweet released by Danielle Smith on October 29th, 2022. The data was collected by creating a sample of the 100 most recent comments on the post. From there, the comments were coded to identify common themes and messages. Two sides emerged; those in support of Smith and those

opposed. For those in support, four main subcategories emerged. For those opposed, six categories were developed. This study demonstrated that individuals were generally displeased with this announcement and the mismanagement of the COVID-19 pandemic by Alberta's UCP government.

Faculty Mentor: Dr. Diane Symbaluk

Studio Arts

naspasinahikew

By Elena Mercuri

The project took place on December 2nd, 2022 at the university's Kihew Waciston center, where myself and six of my INTA 210 classmates organized a guided art session. I plan to present on all of our behalfs. The session was intended to move away from the common occurrence that is trauma-based programming, and instead replace that framework with an event that celebrated Indigenous joy and creativity instead.

Faculty Mentor: Dr. Heather Fitzsimmons-Frey

Research of Baroque and Renaissance painting for the purpose of creating a painting of contemporary student life

By Maya Pereira

For Student Research Day, I would like to present an acrylic painting on canvas, and a project display which would be a board to display my research references and artist statement. I am also open to doing an oral presentation. This project started as a research presentation where students proposed an idea for a painting that considers the concept of time using research to make reference to historical events and culture. For this painting I chose to approach this theme through lived experience, art imitating life, the inherent closeness of the human experience, and how this is in contrast with historical depictions of human connection. The reference for this painting is 11 Studio Arts students gathered at a long table in a classroom. The reference was not arranged; it was taken to capture the natural state of a chosen seating arrangement. I found that this composition unintentionally mimics the Last Supper by Leonardo Da Vinci and wanted to explore how a contemporary setting can be communicated through its historical reference. My presentation will show the contrast between aspects of the institutional setting and religion, continuity of human connection, difference in materials and value placed upon them, and the overall interest of reflecting on the effects of historical art through a contemporary setting.

Faculty Mentor: Collin Johanson

Chismosa: The gossiper and the act of self-portraiture

By Alethea Recla

I paint and bleed ancient narratives long forgotten through time. Through scorched Earth and raging waves, I grieve constantly the things that I have lost. The people that I have lost. The language and heritage that I have lost.

Therefore, my art are visual eulogies.

What are statues and other accolades if they cannot withstand the inevitable passage of time? Only crumbling to dust and debris as eons pass–what lies they tell you. Stone and marble, granite and bronze. Permanent things, immovable things, cold and inhuman.

I am what I have lost. Those that came before me, those that loved me, those that believed in me. I am made out of their memories, thoughts and actions.

I am the living celebration of them.

I've always been interested in exploring the pre-colonial aspect of my roots as an attempt at healing from intergenerational and religious trauma. Self-portraits to me are milestones, celebrating and comparing what I have learned and how much still I need to improve on. This painting will serve as a playful reminder of everything that encompasses my identity: my family, our heritage and history, my self-doubt, hesitations, regrets and passions all tied in together in the daily commute to where my creativity is constantly being challenged and where it is made to flourish.

Faculty Mentor: Collin Johanson