Student Research Day Book of Abstracts and Artist Statements 2024

USRI
Undergraduate Student Research Initiative

STUDENT RESEARCH DAY

Abstracts and Artist Statements Guide

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Alexis Bureau	Please Don't Attack Me, I'm Just An Archaeogamer: Surveying Assassin's Creed Valhalla	Poster Presentation
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Matthew Clark	Change in Midwestern Canada: An Analysis of Land in Edmonton	Oral Presentation
Dheepika Dheenadayalan Mekala	The Role of Property in Gender Diversity among Indigenous Societies in North America	Oral Presentation
Jordan Halabi	Solution to post-war environmental degradation: international post-conflict environmental reconstruction fund	Oral Presentation
Avalon Heemskerk	A week or so in Traffic Court: A look at Power	Oral Presentation
Eva Hollas	The Promise of Socratic Irony: A Medium for Understanding (Noesis) in Platonic Dialogues	Oral Presentation
Samuel Hutton	Lessons from the Afterlife: an analysis of Dante's crisis	Oral Presentation
Brittany Littlefair	Truth through Story: Plato's use of poetry in the Symposium	Oral Presentation
Alexander MacLeod	Attacking The Ancient: Transdisciplinary Ethics in Archaeogaming	Oral Presentation
Alexander MacLeod	Actionable Archaeological Ethics in Digital Spaces	Oral Presentation
Tianna Nickle	Abortion and Misogyny: A critical discursive analysis of anti-abortion discourse in North America	Oral Presentation
Sierra Roth	Rights, Freedoms, and the Online Streaming Act	Poster Presentation
Paige Russell	The Legacy of Game Cartridges: The Fairchild Channel F & The Gaming Industry	Poster Presentation
Jaden Secrist	Mass Education and the Disordered Soul: A Platonic Criticism of Democracy.	Oral Presentation
Amber Shergill	Punjabi Boliyaan among the diaspora of Western Canada	Oral Presentation
Amber Shergill	Ethnographic Research Mentor	Oral Presentation
Emma Steele	"Never Ignore a Dying Bird:" Urban Canadian and Inuit Perceptions of Climate Change	Oral Presentation
Alana Whitson	The Triforce of Archaeogaming: The Intersection of Videogames, Queerness and Archaeology	Oral Presentation
Alana Whitson & Elise Harold	Useless Degrees?: Undergraduate Experiences of Course-based, Work-integrated learning.	Oral Presentation

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Vik Chu	Mind the Service Gap: Improving UNISON for Public Safety Workers	Poster Presentation
Ingrid Felfly	UX and Sustainability	Poster Presentation
Keighly Gibson	From The Closet: An Exploration of LGBTQ+ identities and fashion.	Poster Presentation
Carolina Gonzalez-Escamilla	Wildflowers of the North Saskatchewan River Valley	Creative Installation
Ian Hanson	Dextra/Sinistra	Creative Installation
Angie Karch, Maria Sison & Vy Do	Inside Out: Navigating Edmonton Recreation Centres	Oral Presentation
Johannah Ko	Design for Pedagogy in Anthropology	Oral Presentation
Danielle McDow-York	UX & Sustainability: Communicating the physical impact of digital activities	Poster Presentation
Jennifer Onwudinjo	A Designer's Guide to Internationalization and Localization of Design	Project Display
Sutharot Plia	Research of Mental Health and OOO theory is presented through video art and Sock Threading Installation called Invisible Stitch	Creative Installation
Paige Prins	Investigating Collaboration as Design Students	Poster Presentation
[redacted]	Monsters in the Closet: Exploring Perceptions of Queercrip Monstrosity through Costuming	Oral Presentation
Nawaal Ramadan Basha	Elevating Adventure: Interactive Action Camera Packaging	Project Display
Angeline Santos	Ux And Sustainability: Applying Toolkits and Checklists During the Design Process	Poster Presentation
Ekaterina Vasilyeva	Social Creatures: Haptic and Tactile Integration in Digital User Experience Design for Meaningful Interactions	Poster Presentation
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Adrienne Bailey	Mountain pine beetle host expansion: interactive effects of temperature and host defences on ophiostomatoid fungi growth in jack pine	Oral Presentation
Madelaine Britt	Inducing Beta-Cell Transdifferentiation Using CRISPR-on Technology in Type 1 Diabetes	Oral Presentation
Zoe Carlyle	Nature's wrestlers: the traits of a successful fighter — Cyphoderris monstrosa	Oral Presentation
Sam Dancey	Creation of Controls for the Identification of the Nuclear Localization Sequence of Flowering Locus C in Arabidopsis thaliana	Oral Presentation
Sam Dancey	Breaking Barriers: Universal Design for Learning in the Biology Laboratory	Poster Presentation

Jack Elliott & Zoe Carlyle	Vocal Cues for Individual Identification in American Pikas (Ochotona princeps): Insights into Territorial Maintenance, Predator Avoidance, and Ecological Resilience in High-Elevation Environments	Oral Presentation
Muhammad Faizan	Reshaping the past: Exploring the complexities of Ancient DNA methodology	Poster Presentation
Alexandra Liber	Condition Dependence of Courtship Song in Field Crickets	Oral Presentation
Zayden Medina Muñoz	Optimistic and Pessimistic Framing while Teaching Conservation Biology to Different Majors	Oral Presentation
Linda Moebes	It's all in the Feather. A deep dive into the genetic diversity of breeding ostriches	Oral Presentation
Anne Promesse Munezero	The identification of Dracula and Masdevallia species using DNA barcoding	Oral Presentation
Michelle Nelms	Deadly Roads for Frogs and Toads: A Spatial Study of Amphibian Road Mortalities and Culvert Locations in Elk Island National Park	Poster Presentation
Rebecca Pacholuk	Simply Complex: The Behavioural Role of the Protonema in Gametophyte Placement in Bryophytes	Oral Presentation
Magnus Selma	Microsatellite evaluation in Cypripedium passerinum (Sparrow's-egg Lady's-Slipper)	Oral Presentation
Inder Singh, Farah Assaf & Caleb Odegard	Crossing the Border: Viral Tactics at the Blood-Brain Barrier	Poster Presentation
Mimi Vignjevic	Using Synchrotron Radiation to Identify Trace Element Patterns in Bones	Oral Presentation
Robyn Woodrow	Feeding Dynamics in Soft-Bodied Corals: Investigating Consumption and Localizing Microplastics Particles in Ricordea florida	Oral Presentation
Malina Younathan	Screening invasive weed phytochemical extracts for potential to act as biofilm eradication agents	Oral Presentation
Child and Youth Care		
Iris Baguinon	Exploring Educators' Practices of Belonging	Poster Presentation
Jeanjo Galandy	Trauma Informed Care through an Indigenous Lens	Oral Presentation
Jennika Kuruliak & Karalyn Mouly	Expanding and Diversifying Trauma Care Starts with Enabling Students to Embrace Their Unique Journeys	Oral Presentation
Jasmine La	Falling Down the Rabbit Hole: An Introspective Self-Portrait	Project Display
Jessalyn LeBlanc	StoryWalk	Oral Presentation
Karalyn Mouly & Jennika Kuruliak	Expanding and Diversifying Trauma Care Starts with Enabling Students to Embrace Their Unique Journeys	Oral Presentation
Angela Schroeder, Kendal Fetter & Toya Richards	How Child and Youth Care Students Understand and Communicate to Others the Meaning of Relational-Centered CYC Practice	Poster Presentation
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Heather Hutchinson &	The Siren Song Stays the Same: Cult Recruitment Tactics and Rhetoric	Oral Presentation

Emily Homeniuk		
Ashley Platz	Radical Third Spaces: How Independent Bookstores Contribute to Culture	Oral Presentation
Joanna Dawyd	The New Robert Burns: How the Preservation and Promotion of the Scots Language Continues on Social Media	Poster Presentation
Computer Science		
Jehdi Aizon, Joseph Latina & Josh Coss	Procedural Generation in Game Development	Oral Presentation
Simon Gordon & Eric Cheung	Preventative Health Mobile Application: Bridging Machine Learning with Wearable Health Sensors.	Poster Presentation
Ian LeBlanc	Use of Pose Estimation Techniques In Harm Reduction	Poster Presentation
Malcolm Nielsen	TFunHDDC - Implementing a Clustering Method for Functional Data with Outliers in Python	Oral Presentation
Balkirat Padda & Matthew Craner	Exploring Hippocampal Shape With Deep Learning And Statistics	Poster Presentation
Nhi Phan, Jesse Emery & Isra Jime	Predict human stimuli with electroencephalogram (EEG) data with machine learning	Poster Presentation
Max Schafer	Exploring learning through games	Project Display
Arshdeep Singh	Reliability Aware Energy Management System for Multi-purpose Energy Harvesting Wireless Sensor Networks based on Deep Q-learning	Oral Presentation
Maria Sison, Nancy Dinh, Daniel Donovan & Katherine Cholowski	Spotify Data Visualization Web Application	Oral Presentation
Decision Sciences		
Curtis Dunford	Canadian Market Analysis for the Feasibility of Application of Supply Chain Theories	Oral Presentation
Matthew Kraus	Supply Chain Risk Analysis using Transport Canada Rail Data	Poster Presentation
Briana McWhirter	Insights into Industry Demand Forecasting: Machine Learning Approach Based Analysis of Qualitative Data	Poster Presentation
English		
Brittany Ade	Engendering Agency in a Selection of Marie de France's Lais.	Oral Presentation
Payden Bialowas	The Discourse of the Pep Talk: Professional Sports Oration	Oral Presentation
Navreet Gill	The Evolution of the Sapphic Vampire	Oral Presentation
Jessalyn LeBlanc	"Son of Terah": Prairie Fiction of the Depression	Oral Presentation
Crystal Webber	Resurgence and Indigenous Futurism in Indigenous Literature	Oral Presentation
Human Services and Early Learning		
Mckenzie Croken	How to Identify and Respond to Racism: An Environmental Scan of Existing Resources	Poster Presentation

Klebshiela Raven Dante	Imagining Educators' Roles through the Culture of Reflective Practice: A Collaborative Approach	Poster Presentation
Courtney Smith, Keirsten Taylor & Iris Baguinon	Beyond the Research: Skills for Life	Oral Presentation
Humanities		
Amanda Fuenmayor	Mirror Theory	Poster Presentation
Javier Gonzalez Latorre	Bullfighting in Spain	Poster Presentation
Cadence Mutch	A Fatal Pretext: The Spiral of Redemptive Violence and the Thermidorian Reaction within the French Revolution	Oral Presentation
Emma Mydlak	Coalbed Methane Ownership: The History of Surface and Subsurface Land Ownership in Alberta and it's Impact on Land Ownership Today	Poster Presentation
Shyla Omeasoo-Rain	Indigenous Ceremonial Understandings of the Numbered Treaties	Oral Presentation
Caitlin Reader	Can a video game serve as an effective Introduction to a particular time period?	Oral Presentation
Paige Reed	Is Homer's "The Iliad" a Reliable Source on Ancient Warfare?	Oral Presentation
Jake Ristic-Petrovic	Transitional Justice During the French Directorate	Oral Presentation
Georgina Rivero Alvarado	Overcoming Tradition: Female Agency in Desengaños amorosos	Poster Presentation
Samuel Wild	A Myth Greater than Zeus: Popular Perceptions and Scholarly Realities about the French Revolutionary Levée en Masse	Oral Presentation
International Business, Marketing, Strategy, and Law		
Jayden Burgardt, Sam Carlyle & Brandon Dahl	The Honors Program: Who Knows About It?	Oral Presentation
Sarah de Kock, Emily Andrews, Darrien Crane, Ashley Jonas-Letain & Mason Toussaint	Choosing Opportunities: Why Enrolment in the International Business Co-op Program is Low	Oral Presentation
McKenna Down, Mercedes Lam, Ashley Reid & Denise Berry	Increasing Enrollment in MacEwan University's Co-op Program for Marketing Majors	Oral Presentation
Macheala (Kayla) Friesen	Social Marketing Messaging: Investigating the Perceived Danger of Differing Appeal Methods	Oral Presentation
McKenna Giese, Ali Tamimi, Ransford Toe & Erika Teveniuk	Enhancing Engagement, Research Exploration on How to Increase Participation in the International Business Honours Program	Oral Presentation

Jett Hemmerling, Bryan Jordan, Jeremiah Nisar & Riley Sudo	Macewan Eats: Qualitative Research Report	Oral Presentation
Natalia Hotsaliuk	The Role of Religiosity in Influencing Intrapreneurship	Oral Presentation
Sam McDowell	Mapping Legal Roles: Stakeholders' Perspectives of Paralegal Regulation in Alberta	Poster Presentation
Sam McDowell	Overcoming Legal Barriers: Implementing AI Solutions for Self-Represented Litigants in Criminal Law	Oral Presentation
Ashlyn McCormick	Senior Well-Being and Technology: A look into senior consumers' need fulfillment with smartphone technology.	Oral Presentation
Mindi Nanayakkara, Temi Oyenekan, Sydney Harrison & Alyssa Hayes	MacEwan Eats Ambassador Program: How MacEwan students can influence consumer behaviour on campus	Oral Presentation
Meg Roth	E-Portfolio for Legal Professionals	Poster Presentation
Fatima Shoaib, Jaishwin Singh, Layla Ghasri & Mursal Muheeby	Revitalizing Alberta Avenue	Oral Presentation
Ethan Wutzke, Kennedy Gallibois, Jenna Kelly & Ruban Pattarh	MacEwan Eats marketing research report	Oral Presentation
Tyra Alexein Zaguirre	Pedagogical Approaches to Paralegal Education in Alberta-Flipped Class Method	Oral Presentation
Ali Zahra, Amna Abu Elhassan, Nomin Altankhuyag, Michaela Heighton & Naraya Hidalgo	MacEwan Eats Mystery Shopper	Oral Presentation
Mathematics and Statistics		
Lam Ha	Euler Characteristic	Oral Presentation
Tyler Jaglal	Use of Latex and other software for illustrating mathematical concepts	Oral Presentation
Samantha Malek & Stuart Dovey	Unmet Mental Healthcare Needs in Canada	Oral Presentation
Sarah Marklund	What Differential Equations Can Tell Us About the Future of Human-Coyote Interactions in Edmonton	Oral Presentation
Oscar Martinez Luna	An Introduction to Hopf Algebras	Oral Presentation

Tristan Monahan	I-fts pointing errors analysis	Poster Presentation
Malcolm Nielsen & L.G. Covelli	A Dynamical Model of Predator-Prey Interaction with One-directional Cooperation	Oral Presentation
Brynn O'Connell	Variable selection for clustering and classification of data with missing values	Poster Presentation
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Charise Eryka Delson	Composing Original Music for Student Cabarets at MacEwan University	Oral Presentation
Gillian Spencer	Understanding Scottish-Canadian Music: A Research-Creation Project	Oral Presentation
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Kathleen Diaz Cortes	The Lived Experience of Being a Caregiver for a Family member With a Terminal Illness.	Poster Presentation
Karissa Goulding, Natalie Hansen, Dawson Hartman, Stephen Nasedkin & Camryn Lauer	A Risky Gamble on our National Health: Examining Alberta's Proposed Exit from the CPP	Poster Presentation
Kaelee Irvine, Randeep Brar & Ansh Arora	Sharenting: Social Media Safety for Parents with Young Children	Oral Presentation
Shirley Jay	Exploring the Efficacy of Cognitive Behavior Therapy in adults with Concurrent Disorders	Poster Presentation
Jadyn Jelinski, Jordan Mehling, Asha Nelson, Tori Osborne & Aleena Taylor	What are the maternal and child health impacts of cannabis use during pregnancy?	Poster Presentation
Connor Kapty	Identifying Gaps In Care Between Discharge From Inpatient Psychiatric Settings To Living In The Community	Oral Presentation
Sharlini Purani	How Much Physiology Do Fourth Year Nursing Students Really Remember?	Poster Presentation
Sharlini Purani & Reyna Parikh	Effects of Intimate Partner Violence During Pregnancy on Maternal and Neonatal Health	Poster Presentation
Natalia Saavedra	What supports and barriers do Hispanic women face while breastfeeding.	Project Display
Jose Sacramento, Gloriya Mehriezgi, Aisha Keinan, Dana Rata & Melanie Lamont	How Does Intimate Partner Violence Affect an Individual's Health During Pregnancy?	Poster Presentation

Allyssa Staudinger, Heather Meneses, Branden Leduc, Negegerework Abate, Harmanpreet Kaur & Ajithya Wijeratne	Check Your Bias	Oral Presentation
Kiara Ukrainetz	Are Virtual Labs Replacements of Physical Labs in Anatomy and Physiology?	Poster Presentation
Organizational Behaviour, Human Resources Management, and Management		
Mabel Adesopo	Transformational Leadership and Listening: Do They Listen?	Poster Presentation
Joshua Bell	Addressing Eating Disorders in the Workplace: Policy, Employee, and Leadership Strategies	Oral Presentation
Owen Bennett	Unveiling the Supply Chain Management Skillset Landscape: A Computational Grounded Theory Approach	Poster Presentation
Johnathan Bobinac	Appropriate Integration of Artificial Intelligence Through Human Resource Management	Poster Presentation
Syed Taha Bukhari	Religion And Government	Oral Presentation
Tryston Davies	Teacher's Compensation: A Comparative Study between Merit Pay and Base Pay in Canada	Oral Presentation
Madylin Gillett	Rethinking Cognitive Tests for Gender-Equal Hiring	Poster Presentation
Mark Lopez	Immigrant's religion in the workplace	Oral Presentation
Jade Packard	Did you vote for me? Leadership and HRM in a Developing Country: The Challenges in the Context of Public Administration / Political Organizations	Oral Presentation
Ben Smith & Bani Dang	Examining Workplace Expectations and Skills Gaps of Prospective Employees	Oral Presentation
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Kowsar Abdullahi & Erika Lamen	Development of Quartz Crystal Microbalance Sensor: Chemistry Practicum with Fourien Inc.	Poster Presentation
Cindy Aung Chen	Designing a Code of Exoplanet Detection Utilizing Transit Photometry	Oral Presentation
Erik Bartley	TLC-Bioautography for the Detection of Lipase Inhibitors in Plants Invasive to Alberta, Canada	Oral Presentation
Felicity Bautista	Investigating inner speech in organic chemistry students	Poster Presentation
Sara Benny	Microplastic Extraction, and qualitative analysis using FTIR specctroscopy	Poster Presentation
Thierry Burns & Caleb Odegard	The Synthesis and Evaluation of Indole Glyoxylamide Analogues as Pancreatic Lipase Inhibitors for Future Medicinal Chemistry Lab Work	Oral Presentation
Emily Chatwin	Determining Antimicrobial Activity of Small Antimicrobial Peptides (WLKRLWKKWRKW) through Synthesis, Purification and Structural Characterization	Oral Presentation
Violet Franklin	Development of Antimicrobial alpha helical peptide	Oral Presentation

Olivia Fryk & Robyn Woodrow	Biodegradation of oils in water/sediment and treatment of tailings waste: Chemistry Practicum with CanmetENERGY	Poster Presentation
Sebastian Gomez	Investigation and Analysis of Water Chemistry in Oil Spills and Froth Tailing Treatments	Poster Presentation
Joshua Hardy	Cataclysmic Variable Mass Accretion and Angular Momentum Loss: A Review	Oral Presentation
Joshua Hardy	Geology as it Pertains to the Secondary Education Curriculum	Oral Presentation
Kyle Kuhling	Construction and testing of a radiation detector using plastic organic scintillators and silicon photomultipliers	Oral Presentation
Erika Lamen	Development of a Novel Antimicrobial Peptide	Oral Presentation
Gage Leahey	Activated Carbon CO2 Adsorbents From Waste Petroleum Coke	Poster Presentation
Addy Lennon	Development and Quality Control of Antimicrobial Bandages: Chemistry Practicum with Exciton Technologies Inc.	Poster Presentation
Melody Mahmoodi	Exploring Weed Extracts for Beta-Glucosidase Inhibitors: Screening Secondary Metabolites through Soxhlet Extraction and TLC Bioautography	Poster Presentation
Zafar Mamadaliev	Process Flow Control and Analysis	Poster Presentation
Caleb Odegard	Design, Synthesis, and Evaluation of a Positively Charged Tryptophan Rich Antimicrobial Peptide	Oral Presentation
Cedrick Ramos	Germanium Adsorption to Banded Iron Formation Precursor Minerals	Oral Presentation
Alexia Tran	No title available.	Poster Presentation
Alexia Tran	Techno-Economic Analysis of Biogas Generation: A Research Study for Biodigester	Poster Presentation
Mimi Vignjevic	The Quantification of Microplastics in Industrial and Residential Stormwater Ponds in Edmonton, Alberta.	Oral Presentation
Ethan Walbaum	Effect of Electrodeposition Parameters on Properties and Catalytic Activity of FeCoNiCuCr High-Entropy Alloy for Water Splitting	Poster Presentation
Kim Ye	Flow CMF Production	Poster Presentation
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Jenn Crebas	Do narcissists use different manipulation strategies with their romantic partner in public vs. private settings?	Oral Presentation
DJ Crossland	Unraveling The Mystery: Personality Traits and The Pseudoscience Puzzle	Oral Presentation
Dakota Dickinson	No Pride in Control: Queer Experiences of Coercive Control within Relationships	Poster Presentation
Garth Dyer	Locking Eyes, Unlocking Memory: Exploring how eye contact enhances memory via arousal	Poster Presentation
Mady Gillett	Searching in shadows: The impact of cognitive load	Poster Presentation

Britni Gorman	Assessing Bias: The Ontario Domestic Assault Risk Assessment Tool and Indigenous Offenders	Poster Presentation
Janet Guenter	Assessing Allegations: Victim Credibility and Memories of Intimate Partner Violence	Oral Presentation
Matthew Harper	Driving Fish Crazy? The Behavioural Consequences of 24-Hour 6PPD-quinone Exposure in Adult Zebrafish (Danio rerio)	Oral Presentation
Matthew Harper	Dude, Where's My Tire? Behavioural Effects of 24-Hour 6PPD-quinone Exposure in a Zebrafish Model	Poster Presentation
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Avery Hudson	Examining EEG Measures of Executive Control During a Visuomotor Stop-Signal Task	Poster Presentation
Dana Jones	Effects of Active vs. Passive Cognitive Reappraisal Interventions on Test Anxiety and Exam Grades	Poster Presentation
Nickki Kamprath	Study Guides: Evaluating Student Perceptions and Impacts on Test Anxiety	Poster Presentation
Nickki Kamprath	Eyes bridge the gap: how eye gaze biases distance perception.	Oral Presentation
Noelle Kilbreath	All Rainbows, No Responsibility: What Does it Really Mean to be an Ally to the 2SLGBTQ+ Community?	Oral Presentation
Jared Kostiuk	Cleaning Out the Closet: Protective Factors Mitigating Internalized Homophobia	Oral Presentation
Jared Kostiuk, Marilyn Robbins & Ismaeel El-Hakim	Navigating Diversity: Learning Climate and the Experiences of Sexual and Gender Minorities at MacEwan University	Oral Presentation
Michael Kramer	Questions about Attraction	Oral Presentation
Zach Krukowski	Dirty Deception: Do dark triad traits predict lying about sexual history?	Poster Presentation
Claire Kryska	Mental imagery weakness: Prevalence of aphantasia in an undergraduate population	Poster Presentation
Karanvir Kundan	Hiding and Searching Behaviours in a 2D environment	Oral Presentation
Brielle Lamash	Personality, Mating Orientation, and Substance Use	Oral Presentation
Kaiden Langlois	Qualitative differences arts and sciences course reviews: Using RateMyProfessor.com to understand the differences in psychology course evaluations for arts and sciences.	Poster Presentation
Samuel Larocque	The Relationship Between Visuomotor Control and Working Memory.	Poster Presentation
Samuel Larocque	Exploring the Impact of Logistics Video Games on Executive Function Enhancement: A Comparative Study	Oral Presentation
Katherine Luzanac	Moderate OCD, Academic Achievement, and “Picture-Taking”: An Exploratory Investigation	Oral Presentation
William Matychuk	Special Education Teachers Use of Evidence and Non-Evidence Interventions in a Classroom Setting	Poster Presentation
Will McCarty	Applied Behaviour Analysis Within the Context of Clinical and Counselling Psychology: A Consideration for an Integrative Approach.	Poster Presentation
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Anza Mirza	Parental Playlists: Investigating Preschooler’s Recognition of Parental Singing	Poster Presentation

Logan Moon	Do Personality Traits, Ageist Beliefs, and Knowledge of Dementia Influence Canadian Undergraduates Stigmatizing Attitudes Towards People With Dementia?	Oral Presentation
Marko Muselin	Got self-control? Investigating inhibitory control in North American red squirrels (Tamiasciurus hudsonicus)	Poster Presentation
Adam Nichols	The Effects of Priming Stigma on Retrieval Memory in Canadian Undergraduate Students	Poster Presentation
Khulda Noor	Social Dominance and Security in High, Low, Peacock, and Mouse Materialists	Poster Presentation
Branden Otte	“Automatic” online corrections during a reaching task are associated with individual differences in executive function.	Oral Presentation
Branden Otte	Traversing the darkness of depression: Exploring the spatial cognitive biases present in major depressive disorder.	Poster Presentation
Neerali Panchal	Influence of Lifestyle Factors vs. Study Tactics on Academic performance	Poster Presentation
Crystal Pavlis	Pluralistic Mating Strategies: Examining Sexual Orientation with CNM, Jealousy, Sex Drive, and Sociosexuality	Oral Presentation
Crystal Pavlis & Brielle Lamash	AI and Musical Authenticity	Poster Presentation
Nyala Pittel	Does objectification/empowerment of women affect perceived consent?	Poster Presentation
Adia Redekopp	The Visual Categorization of Handwritten Letters	Oral Presentation
Nadia Reid	Fame and Blame: Celebrity Status and Evidence Directionality in Judgments of Sexual Assault Cases	Poster Presentation
Lucia Rittammer	Collective Narcissism and Reactions to Political Issues	Poster Presentation
Marilyn Robbins	Do Opposites Attract: The Effect of Self-Perceived Masculinity-Femininity on Attraction	Poster Presentation
Natasha Robinson	STOP! That's Stalking! Or Is It? Identification of Stalking Behaviours Based on Type and Intensity	Oral Presentation
Nick Robinson	Unsolved Mysteries of Applied Behaviour Analysis	Oral Presentation
Chella Robles	How Empathy Influences Online Dating Selection	Poster Presentation
Chella Robles	A Comparison of Profiles and Sentencing Outcomes of Three Violent Offending Groups	Oral Presentation
Joel Roy	Examining Derived Relational Frames of Opposition Across Arbitrary Stimuli.	Oral Presentation
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Katerina Rubachuk	Increasing variety food Intake in picky eaters	Poster Presentation
Aly Shurvell	Sexpectations: Interpretations of Coercive Control in Relation to Sexual Identity	Oral Presentation
Aly Shurvell	Inappropriate Sexual Behaviour: Intervention and Education	Poster Presentation
Sophia Slade	Undergraduate Student Opinions Regarding Aging: An Exploratory Study	Poster Presentation
Sophia Slade	Visuomotor Adaptation and the Role of the Cerebellum: Enhanced Aftereffects Due to Hand and Visual Shift Congruency	Poster Presentation
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Adam Szybunka-Ostopowich	Seeing and Feeling the Difference: Developing a Time-Based Measure of Executive Functioning in a Three-Dimensional Object Sorting Task.	Poster Presentation

Darby Tarrant	Just Keep Breathing: Can Biofeedback Promote Use of Deep Breathing as a Stress Coping Strategy in Undergraduate Students?	Oral Presentation
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Arshdeep Vaid	Screening Politics: How Internet Usage Modulates Attentional Biases and Vigilance among Liberals and Conservatives	Oral Presentation
Dawson von Stein	Think Harder: The Perils of Pseudoscientific Beliefs	Poster Presentation
Shannon Walters	Communicating Consent: The Influence of Educational Infographics on Sexual Consent Awareness and Application	Oral Presentation
Emily Woods	Social Media Intensity and Materialism: Can Consumers Avoid Negative Outcomes by Re-Evaluating Their Approach?	Oral Presentation
Krystal Yik	The Effects of Eastern Singing Bowl Music Listening on Visual Attention in Children with Autism Spectrum Disorders	Oral Presentation
Isabella Yip	Pet food for thought: Analyzing the relationship between pet ownership and disordered eating behaviours.	Poster Presentation
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Jojo Boateng	Exploring Social Isolation Among Black Parents Who Have Children with Autism Spectrum Disorder	Oral Presentation
Layla Dekin	Impacts of the Covid-19 Pandemic on Indigenous Mental health.	Poster Presentation
Merranda Felker	"Things Need to Change" - Two Opposing Camps: A Content Analysis of Online News Articles	Oral Presentation
Aaron Glen	Systemic Racism and Hockey: How do the NHL and PWHL Bargaining Agreements Reflect the Hierarchy of Racialization and Privilege?	Oral Presentation
Shahad Hassan	Medical Racism in Canada: Examining the Influence of Medical Curriculum	Oral Presentation
Ashu Kito	Reclaiming Justice: Assessing Canada's efforts to address Indigenous incarceration	Oral Presentation
Natalie Mamo	International Injustice and the International Criminal Court	Oral Presentation
Ezra Richards	"Being Without Restriction": Contemporary Sociological Theory and the Gender Anti-Binary	Poster Presentation
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Nathan Behnke	Audrey II Puppet	Project Display

Allied Health and Human Performance

Knowledge Retention of Physical Education Students

By: Abby Carter

Exercise physiology is a sub-branch of human physiology. Its knowledge is essential to improve health and maximize human physical performance. This is the first project in the scientific literature to explore the knowledge retention of energy systems, a topic in exercise physiology. Energy systems provide ATP (energy) to cardiac and skeletal muscles during exercise. These energy systems can be trained to optimize physical fitness. A higher fitness level is also associated with better health. To improve long-term knowledge in Kinesiology, amongst many interventional strategies (Narnaware, 2021; Narnaware and Neumeier, 2023), the impact of content reinforcement as one of the interventional strategies was evaluated in the present study. Students were quizzed using Kahoot over an eight-week period. For each quiz, students answered 10 knowledge comprehension-level multiple-choice questions. The results demonstrated that even though knowledge of anaerobic and aerobic energy systems was week-specific, it was lowest in the first two weeks. However, it did improve over the next six weeks, indicating that content reinforcement strategies can be used as an interventional tool to enhance long-term knowledge retention in Kinesiology students.

Faculty Mentor: Dr. Paul Chahal

Evaluating the Impacts of Relocation on International Students' Health in Canada: A purposed Survey Study

By: Mehakpreet Singh

"Evaluating the Impacts of Relocation on International Students' Health in Canada: A purposed Survey Study" will investigate the underexplored area of health challenges faced by international students after relocating to Canada, highlighting a significant gap in support and understanding from educational institutions. This mixed-method survey study aims to dissect the intricate effects of relocation on the physical, mental, and social well-being of students at MacEwan University. With an intention to recruit a diverse group of 50-100 participants using purposive sampling, the study will ensure a broad spectrum of insights into the adaptation processes of international students. The subsequent data analysis will be performed using SPSS v29 for quantitative and qualitative analysis. The anticipated findings will be disseminated through peer-reviewed journals and conference presentations. This proposed study is anticipated to ignite discussions on enhancing educational environments for a more inclusive experience and offer a deeper understanding of the specific health impacts associated with post-relocation experiences. This purposed study seeks to contribute valuable insights and evidence-based recommendations to the existing body of knowledge. This endeavour is poised to improve support systems for international students in Canada, facilitating their successful cultural and academic integration and enhancing their overall educational journey. Targeting a diverse cohort of international students across the post-secondary institutions in Canada, the study examines the nuances of adjusting to a new cultural and educational environment, the efficacy of coping strategies for mental health issues, and the role of social support systems in

mitigating these challenges. The anticipated outcomes include a comprehensive insight into the students' lived experiences, identification of gaps in current support systems, and recommendations for enhancing university policies, mental health initiatives, and healthcare education. This research aims to contribute to academic knowledge while emphasizing the need for culturally competent and inclusive educational practices. Expected to span 15 months, the findings will be instrumental for policymakers, university administrators, and healthcare educators in improving the support and success of international students, thereby fostering a more inclusive academic environment.

Faculty Mentor: Dr. Bisi Oyelana

Anthropology, Economics, and Political Science

Two Visions of a Paper

By: Simon Belanger

Within the Dialogues of Plato, the lessons we seek to elicit from the text can and should be applied to how we argue and formulate our approach to academic writing. Within the dialogues, we find eristical and dialectical forms of argument running throughout; these two approaches, aimed at different ends, will lead the writer to different places through their work. To find understanding, a dialectical approach is needed through precise, repetitive work.

Faculty Mentor: Dr. Gaelan Murphy

Please Don't Attack Me, I'm Just An Archaeogamer: Surveying Assassin's Creed Valhalla

By: Alexis Bureau

Assassin’s Creed Valhalla is an open-world story-based video game that balances historical science fiction with accurate Viking culture and history. This balance allows players to experience Viking culture personally as they complete the game. Through Archaeogaming methods, I surveyed the site of Saint Albanes Abbey in Assassin’s Creed Valhalla. During this, I discuss the historical empathetic perspective and how digital surveying is the groundwork for a different perspective on material culture.

Faculty Mentor: Dr. Katie Biittner

China’s One-Child Policy Through the Feminist Lens

By: Jeba Bushra

The one-child family policy was developed and enacted in 1979 to mitigate concerns about social and economic problems from rapid population growth. The policy was more effective in urban areas than rural areas, and the policy witnessed uneven enforcement throughout mainland China. I will examine the historical context and repercussions of the one-

child policy and discuss the main criticism of it (its amplification of discrimination against women, who, as a result of the policy, faced forced sexual procedures, infanticide, abandonment, and a skewed gender ratio) through the perspective of feminism and feminist theory in policy-making and policy analysis. Women bore the burden of following the one-child policy disproportionately to their male counterparts. Thus, feminist theory is a crucial lens in evaluating the one-child policy, considering women (especially rural women who were restricted in their choices of birth control - IUD or sterilisation) were the primary targets because of their ability to bear children. With existing patriarchal traditions and beliefs, the one-child policy caused a surge in violence against women, thereby creating a cycle of inequality. Amongst women, the most targeted demographic was rural, low-income women who could not afford the fines and thus were subject to other brutal punishments. Widespread abandonment and murder of female babies, frequent coerced and sex-selective abortions, and China's continued struggle with the demographic challenges the one-child policy created demonstrate the policy's enduring repercussions. The policy challenged the core beliefs of the feminist theory- equality and autonomy. The government failed to consider their female citizens and ignored feminist beliefs to ensure obedience to the policy, which indicates the government did not see women as first-class citizens who were entitled to autonomy and protection.

Faculty Mentor: Dr. Marielle Papin

Change in Midwestern Canada: An Analysis of Land in Edmonton

By: Matthew Clark

In this inquiry, I analyse the usage and layout of land in Edmonton, its impacts on the city's growth and future, and propose potential solutions to the city's current problems. Outdated zoning laws have hindered Edmonton's climate goals and development in urban areas. Even after recent zoning reform, the public remains concerned about the influence of big-money developers, while also feeling uneasy about a greater tax burden during a time of economic uncertainty. I propose regular 20-year zoning bylaw revisions, alongside the creation of an inventory of unutilized and underutilised public land, and taking steps towards a landlord-free society. Rather than short-sighted supply-side economics, solutions must be considered in pursuit of Edmonton's future, and with the current goals of sustainability and development in mind. For this reason, I also propose the creation of a Land Value Tax as a source of revenue creation for these programs, which would drastically reshape the landscape of land ownership in Edmonton, and Canada on a wider scale if implemented correctly.

Faculty Mentor: Dr. Marielle Papin

The Role of Property in Gender Diversity among Indigenous Societies in North America

By: Dheepika Dheenadayalan Mekala

This study explores the relationship between Indigenous gender diversity, namely Two-Spirit identities, and property ownership and understandings of the land in Indigenous communities in North America, as compared to that of Western colonial ideology. As a society's economic

structure can be understood by studying its mode of production and whether property is seen as private or communal, I consider the influence of economic structures in Indigenous gender diversity: If pre-colonial Indigenous societies were inclusive of all genders, then is the absence of private property ownership in Indigenous societies one of the reasons for their inclusive and equal societies? Along with the harsh socio-cultural changes brought on by colonial assimilationist policies, Indigenous economies and modes of production were also drastically altered under colonization. Accompanying these Western economic influences was a colonial emphasis on patriarchy and cisheteronormativity which negatively impacted Indigenous non-binary gender identities, suppressing Two-Spirit identities. From an anthropological perspective, I explore these economic changes in the mode of production among various Indigenous groups in North America to reveal associated shifts in perspectives on gender diversity and Two-Spirit identities. Through a holistic lens, I discuss the role of colonial economic influences as part of the sociocultural changes to the status of Two-Spirit identities in Indigenous societies in North America.

Faculty Mentor: Dr. Leslie Dawson

Solution to post-war environmental degradation: International post-conflict environmental reconstruction fund

By: Jordan Halabi

As the world enters a new era of global instability, with destabilizing conflicts devasting regions from Eastern Europe, the African Horn to the Middle East, the detrimental impact of warfare on the environment cannot be overstated. Post-conflict, intivates undertaken are often focused on rebuilding critical infrastructure, promoting economic growth, and establishing social cohesion. Environmental restoration is often relegated as a distant secondary issue, despite the fact ecological degradation poses long-term implications for the economic and social development of post-conflict societies. This paper will explore the establishment of a post-conflict environmental reconstruction fund as a global governance mechanism to address this pressing issue that is far too often overlooked. The environmental issue in focus is the degradation and subsequent exploitation of natural resources, loss of biodiversity, and destruction of ecosystem services. These factors are often exacerbated by the unstable and unregulated socioeconomic needs of post-war societies. The analysis will study both the interrelated nature of war-related environmental degradation and other environmental issues as well as the socio. economic disruptions brought by environmental degradation of war. The intervention proposed is a global fund that will consist of the engagement of numerous stakeholders including NGOs, national governments, donors, private enterprises, and local communities, with each playing a critical role in resource mobilization, project implementation, and coordination. By creating a global fund specifically tailored to post-conflict environmental reconstruction, the international community will be better suited to pool the necessary resources, capital, and expertise to facilitate ecological resilience, recovery, and prosperity in post-conflict society, addressing not only ecological degradation but the socio/economic ramifications as well.

Faculty Mentor: Dr. Marielle Papin

A week or so in Traffic Court: A look at Power

By: Avalon Heemskerk

Ever wondered about the complexities involved in challenging a routine traffic violation ticket? Dive into this paper for a nuanced exploration of contesting traffic violations, looking into the intricate dynamics of power structures within the courtroom. Through a critical examination of seemingly straightforward legal proceedings, we investigate the subtle yet impactful influence of power dynamics on the outcome of trials.

Beyond the explicit legal discourse, the paper delves into the subliminal messaging embedded in the courthouse's physical architecture. An analysis of structural elements aims to reveal cues that may influence perceptions, potentially creating a sense of trepidation for the accused. Additionally, the study explores linguistic practices as tools to maintain order and perpetuate existing power dynamics within the legal system.

Acknowledging the legal system's simultaneous reputation for fairness and disparities among individuals of diverse backgrounds, this paper examines the implications of ideologies around ethnicities and socioeconomic standing. While a comprehensive exploration of all variations would require extensive research, this study offers a thoughtful examination of plausible effects stemming from diverse backgrounds, contributing to a broader understanding of the intersectionality of legal experiences.

The methodology combines academic research with on-site ethnography, aiming to provide a comprehensive analysis of power within the seemingly simple walls of a traffic courtroom.

Faculty Mentor: Dr. Jenanne Ferguson

The Promise of Socratic Irony: A Medium for Understanding (Noesis) in Platonic Dialogues

By: Eva Hollas

Inspired by Jacob Klein’s (1965) commentary on Socratic irony, this research project examines Plato’s use of Socratic irony as a medium for understanding (noesis) in the Republic, the Meno, the Gorgias, and the Symposium. Klein asserts that “Everything about Socrates’ irony depends on the presence of other people who are capable of catching the irony, of hearing what is not said” (1965, 6). This remark seems to suggest that the reader can unlock a new form of understanding that is not explicitly mentioned in the text. The task of this research project, therefore, is dedicated to the so-called “noticing” of irony in Platonic dialogues. Guided by a desire to make Plato’s innovative use of Socratic irony intelligible, I explore the form (dialogue and irony), content (dialectics and meaning), and context (space and time) of Platonic dialogues in their varying levels of interaction: the interaction between the interlocutors in the dialogues, the interaction between the dialogues themselves, and the interaction between the dialogues and us (the readers). This research project reveals that Socratic irony doubles as a medium for understanding in the past and in the present, since the activity of “noticing” Socratic irony in Platonic dialogues invites us (the readers) to participate in the “uncovering” of meaning, which in turn, allows us to gain understanding by illuminating how Plato’s philosophy abides in time and space.

Faculty Mentor: Dr. Gaelan Murphy

Lessons from the Afterlife: an analysis of Dante's crisis

By: Samuel Hutton

In this paper, we endeavor to take Dante Alighieri seriously as a thinker and teacher of moral and political philosophy. With this in mind, we will treat Dante's Divine Comedy as a lesson on how to approach the questions of power, justice, and human nature. Dante's approach is, in essence, hermeneutic inquiry. Through our reading of Dante, we shall reveal that Dante lacked an understanding of what it means for a person to be just in an unjust world. With his experience of the afterlife, and questioning the souls found therein, Dante learns the mediating power of discourse as a condition for understanding justice-in-the-world. It is through the discursive practice of hermeneutic inquiry that Dante - and, by extension, we the reader - is brought to a place where justice can be experienced as something situated in the world.

Faculty Mentor: Dr. Gaelan Murphy

Truth through Story: Plato's use of poetry in the Symposium

By: Brittany Littlefair

Plato's Symposium uses drama, poetry, and storytelling to convey its message to its readers, seemingly in contradiction with Plato's criticisms of poetry and memory in his other works. The underlying issue that Plato is always addressing in his work is the failure of convention and poetic tradition within Athenian society at the time, and the argument for philosophy to be its replacement. Through an exegetical reading of the Symposium and other Platonic dialogues, I examine how Plato's use of poetry in the Symposium allows for philosophy to create an account that incorporates and carries forward poetry while being able to answer the questions that poetry cannot. The Symposium is the fulfillment of Plato's civic duty to his fellow Athenians and a work of love, offering them philosophy in a way that is accessible to them.

Faculty Mentor: Dr. Gaelan Murphy

Attacking The Ancient: Transdisciplinary Ethics in Archaeogaming

By: Alexander MacLeod

The act of modding video games and the culture surrounding the modding community present uniquely modern ethical dilemmas for archaeologists regarding ownership. We investigate the dilemmas presented by the chase of Defense of the Ancients, a custom game mode for the game Warcraft III: Reign of Chaos. This popular mod has had a significant influence on video game culture and design. By looking at the contributions to game culture made by modders and the surrounding modding community, we look at how mods contribute to games through accessibility, additional content, entertainment, and cultural interactions. Through DotA, we look at how major archaeological associations' codes of ethics cannot keep up with the expectations and needs of Archaeogaming and cannot accommodate the intricacies of an interdisciplinary field. Ownership claims are challenging to navigate due to legal definitions of authorship,

copyright, and ongoing legal disputes regarding intellectual property and who can be defined as the owner of a game mod. DotA, as a research site, is influenced by these ethical issues without a clear path forward and no previous precedence relevant to the site. To accommodate a clear and progressive path forward, ethical interpretations of the past must be redefined to fit the needs of the future in a culture surrounded by digital media.

Keywords: Archaeogaming, Ethics, Defense of the Ancients, Modding, Digital Media, Ownership

Faculty Mentor: Dr. Katie Biittner

Actionable Archaeological Ethics in Digital Spaces

By: Alexander MacLeod

As archaeology continues to delve deeper into digital technologies and media, it is crucial to ensure that codes of ethics are able to reflect the needs of fields like archaeogaming. This analysis is done with two assumptions: at it's core, archaeogaming is rooted in archaeological theory and archaeology is a facet of anthropology. Through that lens, I will be analysis how codes of ethics are constructed within archaeology as well as highlighting the intricacies and compexilites of applying archaeological ethics to digital spaces. Through categorizing ethical codes and analyzing the roles they fill, I seek to present a case for why archaeogaming needs unique considerations and accommodations to be made for ethical research.

Keywords: Archaeogaming, Ethics, Digital Media

Faculty Mentor: Dr. Katie Biittner

Abortion and Misogyny: A critical discursive analysis of anti-abortion discourse in North America

By: Tianna Nickle

This paper is a critical discursive analysis of how abortion discourse in North America shapes how we think of women, autonomy, and reproduction and how it impacts the cultural and political landscape. Through analysis of online articles, videos, advertisements, and proposed legislation from anti-abortion supporters and organizations, I discuss the different subjects anti-abortion arguments elevate and how the subject is formed and described. In this paper, I highlight the underlying ideologies present in the discourse and take a specific interest in the ways progressive language is utilized to serve anti-progressive means. This is vital as abortion becomes more and more of a debated issue in a post-Roe landscape because it involves a thorough understanding of how speech can reproduce "truths" and ideologies surrounding abortion. As these discourses go from online opinion pieces to news articles to enacted laws it is crucial that this speech be analyzed and that the misogynistic ideologies at play are unearthed.

Faculty Mentor: Dr. Jenanne Ferguson

Rights, Freedoms, and the Online Streaming Act

By: Sierra Roth

Bill C-11, or the Online Streaming Act, received royal assent in April 2023 to amend the 1991 Broadcasting Act, igniting debates about whether CRTC authority over online media hinders Canadian freedom of expression. Historically, the Broadcasting Act safeguarded Canada's cultural, political, and social fabrics by allowing the CRTC authority over CanCon broadcasting. In parliament, Bill C-11 supporters argued that the bill appropriately updated the Broadcasting Act for changing technologies, whereas rejectors argued that the bill hindered free speech. The outcomes of Bill C-11 are unknown as the CRTC is currently engaging in public hearings for policy development, forecasting implementation in late 2024. However, recent Nanos Research and Angus Reid surveys concluded that a majority of Canadians hold favourable views of the protection of Canadian culture through CanCon, including the regulation of online streaming services. However, online content creators and social media companies argued that Bill C-11 will impact creator livelihoods by regulating what is "Canadian enough." Pros of Bill C-11 include the prioritization of Canadian content in an American-dominated industry, thereby solidifying Canadian culture as unique. Cons of Bill C-11 include turning media companies away from Canada and interrupting the absolute freedom of expression. Bill C-11 benefits Canadians instead of infringing on their freedom of expression, as it protects Canadian individuals and companies from being undermined by larger media companies, especially in the digital age. The Charter itself defines its entirety within the recognition and preservation of Canada's multicultural heritage; Bill C-11 suits Canada as a democratic society.

Faculty Mentor: Dr. Brendan Boyd

The Legacy of Game Cartridges: The Fairchild Channel F & The Gaming Industry

By: Paige Russell

Before CDs, DVDs, and digital downloads there was the game cartridge. In the history of video games, the importance of the game cartridge cannot be understated as the medium allowed for a new industry to take off economically and creatively. To explore this importance, this paper takes a look at the Fairchild Channel F, which is regarded as the first video game console to use interchangeable ROM cartridges. The creation, as well as specifications, of the Fairchild Channel F game cartridges are examined and used to showcase the development of the video game industry.

Using the transdisciplinary nature of Archaeogaming, I hope to highlight how the game cartridge influenced, and continues to influence, the video game industry and the growth of technology. As cultural artefacts, game cartridges are also influenced by these same factors of industry and technology. I also argue for the acknowledgement of game cartridges as important artefacts that can be used to start examining cultural and technological change. There is a necessity for acknowledgement as the video game industry moves onto optical disc and digital formats that are viewed as making cartridges obsolete.

Faculty Mentor: Dr. Katie Biittner

Anthropology, Economics, and Political Science

Mass Education and the Disordered Soul: A Platonic Criticism of Democracy.

By: Jaden Secrist

Dr. Murphy has put together a presentation of papers from the Fall 2023 POLS 309 class. There have been some specifically selected papers by Dr. Murphy, which are planned to be presented orally. They surround the Platonic dialogues of the Symposium, the Meno, and the Gorgias. The themes of the papers vary depending on the student.

Faculty Mentor: Dr. Gaelan Murphy

Punjabi Boliyaan among the diaspora of Western Canada

By: Amber Shergill

Traditional Punjabi Boliyaan are couplets sung by Punjabi people on birthdays, weddings, and get-togethers. Boliyaan comprises of various linguistic and paralinguistic aspects such as proxemics and kinesics, vocal quality and pragmatic features that produce a distinctive genre in Punjabi oral culture. Many Canadian Punjabis like me weren't completely aware what a Boli was and its significance to Punjabi culture. Boliyaan are less commonly passed down to Canadian-born Punjabis because priorities have changed due to a shifting focus on Western education, leading to a subconscious loss of touch with learning Punjabi Boliyaan.This research–based on interviews, participant observation, and literature/media review–focuses on documenting Boliyaan in Western Canada to better understand how they are being transmitted in a diasporic context. In this research, I reflect from a linguistic anthropological perspective on the changes that Boliyaan are undergoing as they are learned through Western culture.

Faculty Mentor: Dr. Jenanne Ferguson

Ethnographic Research Mentor

By: Amber Shergill

In January 2024, students from MacEwan's 4 year applied anthropology class entered the final stage of community engaged research with our community partner, the John L. Haar Library. During this course-based research project, my job as a pedagogical Intern was to provide logistical support and mentorship to students with non-anthropology backgrounds. I will discuss the two community reports I wrote on the behalf of the student researchers, creating a transparent filter. By analyzing and interpreting data, I pulled key findings from the student researchers' insight reports. I will end the presentation discussing my reflections as an Ethnographic Research Mentor.

Faculty Mentor: Dr. Jennifer Long

"Never Ignore a Dying Bird:" Urban Canadian and Inuit Perceptions of Climate Change

By: Emma Steele

Weather is memorable, and patterns can generally be predictable as long as there is social memory. Our experiences and perceptions of weather accumulate through generations, creating social memory. This project will examine how urban Canadians and Inuit perceive climate change by studying Canadian wildfires and Arctic eider ducks. This topic was chosen because of my lack of perception of climate change; I didn't think it affected Canadians. I decided to compare urban Canadians and Inuit based on my experience as a second-generation Albertan. Social memory relies on length of time; Canada is a new settler and immigrant-based country, resulting in a lower social memory of weather patterns in the area. In comparison, Inuit have many generations of elders who can pass down their memory of weather patterns. Weather is events occurring during short periods, whereas climate is the average weather occurring over a long period. El Niño–Southern Oscillation (ENSO) is an example of predictable weather events, but urban Canadians' lack of social memory intensifies the unpredictable patterns of climate change. By the end of this project, I hope to inspire discussions as to why social memory is necessary for understanding climate change.

Faculty Mentor: Dr. Cynthia Zutter

The Triforce of Archaeogaming: The Intersection of Videogames, Queerness and Archaeology

By: Alana Whitson

This presentation is situated at the intersection of video games, queerness and archaeology. This intersection of scholarship has already existed for some time, shares a common essence and has scholarly value. Value is what this paper intends to explore: How can theoretical approaches at this intersection be shown to contribute meaningfully to queer lives outside of the game context? My paper argues that theoretical approaches within this three-way intersection can shed light on various hegemonic expectations related to queer lives but that it is these hegemonic expectations that must be challenged in order to define this intersection’s significance in queer terms. The structure of my independent study began with a literature review of the contributing fields such as archaeogaming, archaeology of gender, queer theory and game studies. My findings are divided into two parts to address the triangulation of themes: an intersection segment and a synthesis segment. The first section of themes demonstrates the commonalities and connections between play, space and players. The second section of themes explores hegemonic structures such as progress, win conditions and boundaries. In synthesis, these structures deconstruct and define queerness on its own terms.

Faculty Mentor: Dr. Katie Biittner

Useless Degrees?: Undergraduate Experiences of Course-based, Work-integrated learning.

By: Alana Whitson & Elise Harold

This project centralizes the voices of two Bachelor of Anthropology students in their experience of course-based, work integrated learning. Through a combination of an exploratory literature review, and auto-ethnographic methods, this presentation explores the current (and prospective)

undergraduate student culture around degree value, competence of skills and experiences of degree acquisition. The unique approach of auto-ethnography will synthesize the personal experiences of both presenters in their Anthropology of Immigration course with this holistic survey of undergraduate degree culture. With a special focus on the applied and skill-based coursework used throughout the semester, the findings of this project will provide a highly qualitative account of the undergraduate experience with implications for new pedagogical directions, not only for anthropology, but for the academy as a whole.

Faculty Mentor: Dr. Jennifer Long

Design

Mind the Service Gap: Improving UNISON for Public Safety Workers

By: Vik Chu

The client and community partner for this Design capstone project is UNISON, a web-based application that allows public safety organizations to effectively manage limited resources in order to proactively respond to public safety incidents. This year-long digital experience design (DXD) project allowed students to apply design thinking and the design process to solving real-world problems. The fall semester focused on defining the scope and context of the design problem. Research during this phase was conducted with UNISON and various stakeholders and included methods such as interviews, co-design sessions, and surveys. Design artifacts from these methods include affinity diagrams, various charts and tables, and a final presentation that sums up the discovered issues and opportunities for improvement. Two solutions were proposed, a redesign of the user interface and the creation of a mobile app, both of which were approved by the client to be further developed in the following term. Activities during this second phase focused on the iterative development and refinement of the proposed solutions and included methods such as prototyping, user testing, and additional co-design exercises with the client. The outcome is a product with a more intuitive and helpful user interface that has already been deployed by UNISON. Additionally, the new mobile application will benefit front-line public safety workers in particular by offering critical information at the right time and in the right place.

Faculty Mentor: Dr. Isabelle Sperano

UX and Sustainability

By: Ingrid Felfly

As a student in the DESN486-Individual Studies course in the Design Department at MacEwan University, along with Dr. Isabelle Sperano and my 2 classmates Angeline Santos and Danielle Mcdow York, we were researching where the UX field is at in terms of Sustainability, what that means, and what we can do about it to help it progress.

Each one of us took a research route, and mine was focusing on researching how User Research and Research in UX can be sustainable.

After the research phase, comparative analyses, and data analysis, we were able to narrow down our focus on one main solution. The solution I am currently working on is "How to Make Personas More Inclusive? - Social Sustainability". So it will be focusing on trying out different and maybe new ways to experiment with personas, so they are better representatives of a pool of people, instead of leaving out individuals with other specialized needs.

Faculty Mentor: Dr. Isabelle Sperano

From The Closet: An Exploration of LGBTQ+ identities and fashion.

By: Keighly Gibson

Queer people have complex identities that can range based on life experiences. This project explores how Queer people express those indentities through fashion. Centered around experience based resesearch influenced by identity theory, this project features interviews from 10 queer people from the Edmonton area. This project utilizes design research techniques such as interviews, extended literature reviews, and cultural probes to explore and understand queer identity as it relates to fashion. It also takes an intersectional approach to the research to expand on current discussions of Queer identity. The research is expanded on through photographic exploration and design to create an final designed product; a zine. The zine features the interviews and photographs in a designed layout that creates a unified yet unique end product.

This final product is titled “From The Closet” and is part of my capstone project for Design Studies.

Faculty Mentor: Dr. Adolfo Ruiz

Wildflowers of the North Saskatchewan River Valley

By: Carolina Gonzalez-Escamilla

This project of painting with rock minerals was initiated by an interest in caring for the environment, painting in a more environmentally friendly way, and learning how ancient cultures used to paint. The work on display showcases some of the native wildflowers that grow in the area of the North Saskatchewan River where the rocks were picked. Nature provided two elements for this composition: the rock pigments (material) and the native flowers of the North Saskatchewan River Valley (subject).

The natural pigments for this painting were extracted from rocks by the process of pulverization. The rocks were ground by hand into fine powder which was combined with a natural binder to make the paints.

Carolina is a multidisciplinary artist originally from Mexico. She is in her first year of the Studio Arts program at MacEwan University. She works in painting, metals, and photography. She loves nature and everything outdoors. She received funding from the Student Undergraduate Research Fund from the Faculty of Fine Arts and Communications at MacEwan University for the purpose of developing this project.

Faculty Mentor: Kerri-Lynn Reeves

Dextra/Sinistra

By: Ian Hanson

The prevalence of screens has made it nearly impossible to disconnect from modern commerce and the constant connection to the internet-enabled economic machine has allowed deceptive sales tactics to flourish. Influencers have taken the place of snake oil salesmen and there is virtually no recourse available to the consumer in the new age of false advertising. Dextra/Sinistra creates a microcosm of set and broken expectations, selling the audience one reality while delivering another.

Faculty Mentor: Anna Hawkins

Inside Out: Navigating Edmonton Recreation Centres

By: Angie Karch, Maria Sison & Vy Do

This project introduces a focus on enhancing the understanding of Edmonton Recreation Centre layouts for Edmontonians. The aim is to facilitate better planning and comprehension of the environment upon arrival. Three main touchpoints were designed and developed to achieve this goal: incorporating 3D views of the inside of the rec center within Google Maps, reorganizing and restructuring the Edmonton Recreation Centre website, and integrating an interactive information screen at the physical rec centers. By providing accessible and user-friendly resources, individuals can navigate recreation centers more efficiently, maximizing their experience and engagement with recreational activities. This initiative addresses the need for clearer communication and guidance within recreational facilities, ultimately enhancing the overall accessibility and usability of Edmonton's recreational infrastructure.

Faculty Mentor: Dr. Isabelle Sperano

Design for Pedagogy in Anthropology

By: Johannah Ko

As a designer, I am very curious about the ways in which design paradigms and other disciplines might mingle, collide, and create. In particular, I love to experiment and play with how we might apply these learnings to shaping how we teach and learn at MacEwan. I am immensely privileged that Dr. Jenanne Ferguson has shared her trust and generosity with me as we have spent the last semester exploring how she might teach Linguistic Anthropology differently.

Faculty Mentor: Dr. Jenanne Ferguson

UX & Sustainability: Communicating the physical impact of digital activities

By: Danielle McDow-York

At the intersection of sustainability and user experience design (UX) is an emerging field of study that addresses the environmental, social, and economic impacts of digital ecosystems. While there are many opportunities for digital innovations to support sustainability targets, many harmful practices, energy-intensive designs, and dark patterns have emerged that instead hinder this progress. Existing literature declares the need for increased research, transparency, and awareness of the topic so that we might rewrite these patterns in alignment with sustainability goals. This research project aims to further bridge the informational gap by identifying ways to increase transparency and topic awareness for users. While there are many functional ways to display information to users by leveraging user interface design (UI), it is even more critical to communicate the information in a meaningful way. Given that, this research also explores how we might better frame abstract information—such as metric tonnes of greenhouse gas emissions—into relatable and actionable insights for users. This research project contributes to a critically emergent field by seeking to highlight industry gaps and propose innovative solutions that prompt discourse on the future of digital sustainability and communication design.

Faculty Mentor: Dr. Isabelle Sperano

A Designer's Guide to Internationalization and Localization of Design

By: Jennifer Onwudinjo

This research delves into the intricacies of international design within the magazine industry, employing diverse methods such as literature review, interviews, surveys, co-design sessions, content analysis, and finialized design outcomes. Unveiling crucial concepts like localization and cultural sensitivity, it emphasizes the necessity of transcending mere translation in international design. Insights from industry players and consumer perspectives underscore the importance of adaptability and cultural respect. The study culminates in outcomes like the Diversity and Adaptability Composition Test (DACT) and adaptable magazine templates, aiming to bridge the gap between theory and practice, fostering inclusive visual communication globally. While acknowledging limitations in sample sizes, the research reflects a shift from broad exploration to a focused framework, aspiring to elevate international design standards.

Faculty Mentor: Dr. Adolfo Ruiz

Research of Mental Health and OOO theory is presented through video art and Sock Threading Installation called Invisible Stitch

By: Sutharot Plia

This project started in the ARTE 306 intermedia class. I wanted to explore themes of mental health and personal experience in my art practice. The idea began when I opened the door in my bedroom, and I could no longer walk; this messy room was not intentionally planned; it reflected how my thoughts work, how the thoughts turn to actions, and how this action is self-sabotaging. Then, I began to pick up some objects; I could not match the socks, or some of them were ripped. That is when I realized it was the time to do something about it. So, I wrote a poem about this experience. Later, I was introduced to a new theory called the OOO theory

(Object-Oriented Ontology), which highlights the idea of breaking down the hierarchy between humans and objects. Treating an object as our friend, not something we own, allows the individual to practice empathy. I believe that if the individual treats the object well, they will likely treat other things like animals, humans, and places, including themselves, with respect. Eyeball Massage by one of the most remarkable female artists, Pipilotti Rist, inspired me to do sock threading. In my work, the socks are hanging to display all the angles of the sock's detail; some are ripped. Making sock threading is similar to bead threading but instead uses socks and yarn. The two primary goals for this project are to have people focus on small details of things like objects that they use daily, focus on their mental health, and reflect on their emotions.

Faculty Mentor: Anna Hawkins

Investigating Collaboration as Design Students

By: Paige Prins

No abstract available.

Faculty Mentor: Dr. Isabelle Sperano

Monsters in the Closet: Exploring Perceptions of Queercrip Monstrosity through Costuming

By: [redacted]

In this body of work, ideas of monstrosity are read onto the artist's body through costuming in order to question the shifting culture war that seeks to demonize queer, transgender, and disabled bodies (among others). This body of work is ultimately a conversation about defining the so-called "normal" body, as it takes the labelling and perception of another as "abnormal" - within the Canadian context, referring to any body that exists beyond the white, heterosexual, cisgender, non-disabled male norm - to identify and legitimize a "normal" as existing in the first place.

The costume designs were informed by the artist's own interpretation of the narratives of pop culture monsters the Wolfman/werewolf, Frankenstein's monster, and Dracula/the vampire, as well as writings about the connections between marginalized identities and depictions of monstrosity by authors such as Susan Stryker and Jack Halberstam. In digging into these narrative and theoretical texts, the artist designed the costumes to pull threads from the monsters' stories that reflect their experiences of queerness, transness, and disability. While these costumes are not an exact depiction of any of the monsters named, they are designed to put forward the artist's personhood and experiences, not to have them truly and fully read as being a monster.

Faculty Mentor: Anna Hawkins

Elevating Adventure: Interactive Action Camera Packaging

By: Nawaal Ramadan Basha

My research aims to redesign GoPro action camera packging to make it more interactive and sustainable. Through physical and digital interactions, the redesigned packagaing focuses on user needs while incorporating various elements to make the journey and experience fun and engaging.

Faculty Mentor: Dr. Isabelle Sperano

Ux And Sustainability: Applying Toolkits and Checklists During the Design Process

By: Angeline Santos

Through existing toolkits and checklists, we are assessing and integrating sustainability in the UX design process. This research focuses on identifying areas in the design process where these resources can be utilized and incorporated in our practice.

Faculty Mentor: Dr. Isabelle Sperano

Social Creatures: Haptic and Tactile Integration in Digital User Experience Design for Meaningful Interactions

By: Ekaterina Vasilyeva

In a world heavily populated by visual messages our other four senses often get overlooked. When we design products for user experiences, the default emphasis falls on the visual paradigms, followed by auditory channels. Constant oversimplification of user interfaces can lead to designs that become less accessible and overall reduce user satisfaction.

In this project, I explore strategies, methods and design implementations that can help users be more in-tune with their experiences through a sense of touch. I explore the effects of textures, form, and physicality in a multi-modal setting and look into interaction patterns with integrated haptic signals, intentionally curated textures and physical materials.

By researching concepts like interconnected devices, shared social spaces and proxemics, I focus on multi-modal design for cross-platform experiences beyond the usual restrictions of screen-based interfaces. As a culmination of this independent study, I created a socially assistive companion prototype, that can support people in unfamiliar social situations, adapting to the user behavior and leveraging our inherent human experiences in a more experimental and speculative form.

Faculty Mentor: Alexander James Stewart

Arts and Cultural Management

Rolling Out the Welcome Mat: An Overview of Accessibility Practices in Greater Edmonton Area Art Galleries and Museums

By: [redacted]

This study seeks to provide a snapshot of accessibility practices and initiatives as enacted in museums and galleries in the Greater Edmonton Area in 2024. The goal of this study was to gain an understanding of what accessibility practices are being implemented within local exhibition spaces, what barriers to implementing accessibility initiatives exist for these spaces, and if there are potential solutions to be found from having this overview.

This study was conducted through a series of qualitative interviews with museum and gallery staff from organizations in the Greater Edmonton Area. The questions in this study were left intentionally open, allowing participating organizations to define what accessibility work looks like in Edmonton through describing their own initiatives and practices. In this, accessibility work can be understood in the context of d/Deaf and disability accessibility (physical accommodations, sensory accommodations, etc.) and broader community safety measures (safe spaces policies, staff naloxone training, etc.). The qualitative interviews took on an iterative process, in which participants could suggest questions and topics that should be explored in the following interviews.

Overall, the findings of this study highlight ongoing, sector-wide issues of sustaining any kind of accessibility work due to financial and staffing constraints. Because of these constraints, accessibility practices in these organizations are often limited to initiatives that can be “tacked on” to other tasks, as opposed to larger scale, relational accessibility initiatives.

Faculty Mentor: Dr. Heather Fitzsimmons-Frey

Biological Sciences

Mountain pine beetle host expansion: interactive effects of temperature and host defences on ophiostomatoid fungi growth in jack pine

By: Adrienne Bailey

During the recent outbreak, the range of mountain pine beetle (MPB) expanded to the eastern edge of the lodgepole pine range, where the composition of the boreal forest changes from being lodgepole pine-dominated to jack pine-dominated. There are concerns that the lodgepole x jack pine hybrid zone may facilitate MPB host expansion. However, jack pine host suitability will likely be influenced by several factors, including the ability of MPB-associated fungi to establish in boreal climactic conditions and the ability of MPB-associated fungi to overcome jack pine defences. Therefore, in this study, I am measuring the growth of MPB-associated fungi in the presence of jack pine host defence profiles at varying temperatures. The results will provide novel data regarding the interactive effects of temperature and host defences on the growth of MPB-associated fungi and will provide insight into the potential interspecific interactions between MPB-associated fungal species in the jack pine range. It will also provide valuable data

regarding the suitability of jack pine trees as MPB hosts, and how global warming may impact jack pine host suitability.

Faculty Mentor: Dr. Leah Flaherty

Inducing Beta-Cell Transdifferentiation Using CRISPR-on Technology in Type 1 Diabetes

By: Madelaine Britt

Diabetes mellitus, including Type 1 diabetes (T1D), is a global health concern. B-cell therapy is a form of treatment for this condition. With novel applications of CRISPR technology, an inactive form of Cas9 (dCas9) and the transactivation domain VP192 can be used to induce target gene expression. We hypothesize that CRISPRa technology can be used to increase the expression of pancreatic endocrine transcription factors to induce the differentiation of HEK293T cells into beta-like cells to produce insulin. Transcription cassettes expressing gRNAs targeting NGN3, PDX1, and MAFA transcription factors were co-transfected with DDdCas9-VP192-GFP plasmid in the human embryonic kidney model cell line, HEK293T. Upon gene expression analysis using qPCR and immunocytochemistry (ICC), results will reveal if the gRNAs induce the expression of NGN3, PDX1, and MAFA to promote the transdifferentiation of HEK293T cells into beta-like cells. These findings would contribute to further research in primary human ductal cells and potential treatment to induce b-cell and insulin production in vivo for T1D patients.

Faculty Mentor: Dr. Habib Rezanejad

Nature's wrestlers: the traits of a successful fighter — Cyphoderris monstrosa

By: Zoe Carlyle

Dual utility traits, exemplified in species like the red deer, highlight signals that function both in male-male competition and female choice. Orthopterans typically employ songs for communication, courtship, and territorial interactions, resembling the dual utility traits seen in other species. This study focuses on Cyphoderris monstrosa, an orthopteran insect, exploring the significance of song and morphology in territorial disputes between males. We analyzed contests between males through staged interactions in controlled arenas and conducted detailed morphological measurements, including dimensions of the head, femur, pronotum and harp area. Staged interactions allowed for direct competition and behavioural observations, while morphological measurements quantified physical traits. The morphological traits of C. monstrosa males did not determine their success in contests; size did not significantly predict the winners. Instead, the number of songs produced and bites taken by the males strongly influenced contest outcomes, elucidating the importance of song and strategic aggression. Contrary to many orthopterans where size matters, like the tree weta and field cricket, C. monstrosa contests rely more on signalling and behaviour than size or weaponry. This study underscores how specific ecological niches and defensive tactics shape the evolution of contest behaviors and the significance of dual utility traits in sexual selection strategies.

Faculty Mentor: Dr. Kevin Judge

Creation of Controls for the Identification of the Nuclear Localization Sequence of Flowering Locus C in Arabidopsis thaliana

By: Sam Dancey

This project aims to create two controls for use in later honours projects identifying the nuclear localization sequence (NLS) of the MADS transcription factor FLOWERING LOCUS C (FLC) in Arabidopsis thaliana. First, I aimed to create a line of Arabidopsis expressing GFP using Agrobacterium GV3101 via the floral dip method. This will be used to show GFP fluorescence that is not specifically localized to the nucleus. Second, I worked on the removal of an internal BsaI site from FLC using site-directed mutagenesis to create an FLC:GFP fusion plasmid. This plasmid will be used to show that FLC localizes to the nucleus. Active nuclear import is required for large proteins, like MADS transcription factors, to translocate, which is needed for these proteins to perform their function in the correct location. Import is facilitated by the interaction of an importin and NLS, a specific amino acid sequence, of the cargo protein. Previously, research has characterized NLSs in other proteins as well as other domains of FLC. However, the NLS of FLC has not yet been identified. By contributing to the characterization of FLC's NLS, I have contributed to the understanding of nuclear localization mechanisms. In extension, the continuation of this work will contribute to the knowledge of protein dimerization, transcriptional regulation, and plant development.

Faculty Mentor: Dr. Melissa Hills

Breaking Barriers: Universal Design for Learning in the Biology Laboratory

By: Sam Dancey

Higher education in the sciences continues to be designed in a manner that perpetuates learning barriers for those already underrepresented in these fields (Prema & Dhand, 2019). For example, the lab components of core introductory biology courses can add significantly to course workload and often provide little flexibility for learners. This is demonstrated in practices including attendance policies, facilities, and emphasis on skills that privilege able-bodied mandatory group work, and heavy reliance on written assessments for students. Universal Design for Learning (UDL) is an evidence-based framework for inclusive learning, emphasizing multiple means for students to engage in and demonstrate their learning (CAST, 2018). There is a gap in research on UDL in STEM disciplines (Schreffler et al. 2019). We have used a second-year molecular biology course (BIOL 205) to explore strategies to reduce barriers to lab learning. The longer-term goal of this work is to facilitate more inclusive lab learning using our findings and the UDL framework. In the spirit of 'Nothing About Us Without Us,' myself and another disabled student researcher played key roles in conducting this research. We identified barriers to learning faced by both disabled and non-disabled students through qualitative survey analysis. Given the feedback received and our own experience completing this course, we completed an audit of the lab manual and revised other lab materials including pre-lab assessments and additional teaching resources. Future research will evaluate the impact and effectiveness of these changes for both students and instructors. Through this ongoing research, we aim to encourage broader implementation of UDL principles for more inclusive

learning across labs in our Biological Sciences program, and contribute to filling the gap in STEM UDL research.

Faculty Mentor: Dr. Melissa Hills

Vocal Cues for Individual Identification in American Pikas (Ochotona princeps): Insights into Territorial Maintenance, Predator Avoidance, and Ecological Resilience in High-Elevation Environments

By: Jack Elliott & Zoe Carlyle

Effective communication is vital for the survival of numerous animal species. Accurately identifying the source of vocalizations can aid animals in tasks such as territorial maintenance and predator avoidance. Past research has found that the American Pika (Ochotona princeps) produces squeak-like calls that may aid individual identification. To date, research is needed to explicitly examine the relationship between territorial maintenance, predator avoidance, and the mechanisms underlying call production in pikas. Here, we focus on the cues to individual identity within the calls. Both vocalizations and playback experiments were collected from Rock Glacier, Kananaskis, Alberta. Playback calls were used to identify cues and assess recognition among neighbouring pikas within the same population, as well as unfamiliar calls from another population. The calls underwent analysis using Praat, an acoustic analysis software that extracted multiple components from each call for subsequent analysis. The findings from this analysis will provide valuable insights into discerning variations among individual calls. This study adds to the existing database aimed at elucidating the purpose of pika vocalizations. Moreover, given that pikas inhabit high-elevation environments, they serve as pivotal indicators of the effects of climate change. Therefore, further research on pikas can greatly contribute to our understanding of the ecological impact of climate change on both their species and other organisms in high-elevation regions.

Faculty Mentor: Dr. Shannon Digweed

Reshaping the past: Exploring the complexities of Ancient DNA methodology

By: Muhammad Faizan

Ancient DNA (aDNA) research has revolutionized our comprehension of genetic material from deceased organisms, facing challenges like DNA degradation and contamination. This paper details a comprehensive methodology to address these issues, incorporating a detailed literature review of recent aDNA studies centered on extraction, sequencing, contamination control, and on technologies in use. Prioritizing adaptable, budget-conscious lab equipment evaluation, the objective is to establish aDNA labs in diverse locations, promoting collaboration and standardized protocols for enhanced research quality. Despite technological strides, the study uncovers a persistent reliance on traditional methods due to resource constraints, time pressures, and an academic culture favoring publication quantity. Introducing a collaborative model wherein smaller spaces specialize in extraction for larger labs, the aim is to optimize efficiency, surmount constraints, and elevate aDNA research. While recognizing challenges, the study advocates for a collective and strategic approach, this research seeks to enhance

efficiency, overcome resource limitations, and drive substantive progress in ancient DNA methodologies. Additionally, it addresses the contrast between technological advances in the past decade and the continued use of traditional methods, noting a prevalence of research articles over reviews, indicative of the academic culture prioritizing quantity over methodological evolution.

Faculty Mentors: Dr. Treena Swanston & Nour Moussa

Condition Dependence of Courtship Song in Field Crickets

By: Alexandra Liber

Sexual selection continues to shape the evolutionary path of many species through competition, female preference, and the traits selected by these mechanisms. Sexually selected traits are thought to be condition dependent, where the allocation of resources can be put towards the growth of these traits to improve an individual's fitness. The development of sexually selected traits can be compared to known condition dependent non-sexually selected traits to determine how condition impacts these traits. Currently, there is conflicting evidence whether courtship song is condition dependent in field crickets. In this study, condition of male field crickets was manipulated through a high, medium, or low-quality diet to study the effect on courtship song. Males had their courtship song recorded. The characteristics of the courtship song, such as the number of high frequency (HF) ticks, HF peak frequency, and duty cycle were analyzed using Audacity and paired with the respective morphological measurements, such as femur length, harp area, head width, and pronotum length to test whether any song traits displayed elevated condition dependence. It was predicted that the characteristics of the courtship song measured, body size, and development will be dependent on the diet treatment a male receives. We found that diet treatment did not affect either courtship song, morphology, or development. The results indicate that the production of courtship song is not condition dependent. However, there are possibilities that the diet manipulation was not strong enough or that the diet treatments were applied too late in the development to cause condition to change.

Faculty Mentor: Dr. Kevin Judge

Optimistic and Pessimistic Framing while Teaching Conservation Biology to Different Majors

By: Zayden Medina Muñoz

With the growing biodiversity crisis, conservation biologists have started thinking critically about how messages about the crisis and calls for action are framed. For a long time, conservation biologists followed a "knowledge deficient" approach but have turned to pessimistic or optimistic framing to motivate the public into action. However, there is contention about which message framing best motivates change. Furthermore, some studies from other disciplines suggest that the effectiveness of pessimism or optimism depends on the person and the context. Minimal research has been done on the effectiveness of either message framing within a biodiversity conservation context, especially in a classroom setting. Thus, I am interested in researching if learning background affects whether students benefit from different message framing when

learning about conservation biology. Surveys were given to students of 4 different classes over an entire term period after lectures with different message frames to gauge the students' belief in their own and humanity's ability to impact the biodiversity crisis positively. I divided these classes into groups to be able to compare between different majors. This research may bring interesting insight into how pessimism, or optimism, operates as a motivator for change within undergraduate students, depending on their major.

Faculty Mentor: Dr. Jessica Haines

It's all in the Feather. A deep dive into the genetic diversity of breeding ostriches.

By: Linda Moebes

In agriculture, the health of livestock populations is assessed through the use of genetic pedigrees, which provide insight into their genetic diversity. Maintaining genetic diversity is important to prevent processes like inbreeding. Inbreeding elevates the risk of genetic disorders, thereby negatively impacting the health of the animals and decreasing production for the farmer. Polymorphic molecular markers like microsatellites are used to construct genetic pedigrees because of their high mutation rate and variability between individuals. MacEwan University has partnered with The Badlands Ostrich Company, a locally owned business, to genotype their breeding population of ostriches. The first phase of this project involved screening known microsatellites to determine their suitability for genotyping using PCR and agarose gel electrophoresis. In the second phase, the PCR primers used to amplify the selected markers were analyzed to establish suitable PCR conditions and the sizes of their products. These criteria were needed to successfully develop primer multiplexes, which amplify multiple microsatellites simultaneously and simplify the genotyping process. Primer analysis and multiplex optimization were conducted through PCR amplification and polyacrylamide gel electrophoresis. Additionally, the method used to extract DNA from ostrich feather tips was optimized to consistently yield higher DNA concentrations. Finally, the multiplexes were assessed via fragment analysis on an automated sequencer at the University of Alberta. The primary outcomes of this project were the optimization of the DNA extraction protocol and the development of primer multiplexes. A future student will complete further assessment of these multiplexes and genotyping of the ostriches.

Faculty Mentors: Dr. Joshua Miller & Victoria Bowles

The identification of Dracula and Masdevallia species using DNA barcoding.

By: Anne Promesse Munezero

One of the largest family of flowering plants is the Orchidaceae with an estimated 30,000 species. Orchids are under significant anthropogenic pressures, such as habitat loss due to deforestation, urbanization, agricultural expansion, medicinal and horticultural harvest, and climate change necessitating their consideration for conservation. Central to successful conservation is the ability to identify individuals to the species level, something which is often difficult with plants, including orchids, based on morphology. DNA barcoding is an established molecular tool used in species identification. Barcoding relies on the variation in a standardized segment of DNA to

discriminate between different genera and ideally species within a genus. Although the cytochrome oxidase gene has proven to be an effective barcode in animals, no single locus has been universally effective in plants. This study aimed to develop a barcode effective at discriminating species from the threatened Neotropical orchid genera of Dracula and Masdevallia. Orchids of these two genera are extremely difficult to identify morphologically and historically were grouped together in a single genus. The Matk and ITS loci were investigated for their potential as either individual, or multi-locus barcodes for species-level resolution in the two genera. DNA was extracted from leaves of plants in the Orchid Species Preservation Foundation collection at the Muttart Conservatory. MatK and ITS sequences were amplified by PCR and subject to DNA sequencing. The resulting DNA sequences were aligned, and phylogenetic tress were constructed to reveal species relationships. The results of the study can inform conservation efforts of Dracula and Masdevallia species.

Faculty Mentor: Dr. David McFadyen

Deadly Roads for Frogs and Toads: A Spatial Study of Amphibian Road Mortalities and Culvert Locations in Elk Island National Park

By: Michelle Nelms

Road mortalities involving amphibians and reptiles are an unfortunate consequence of linear disturbances across landscapes. With the expansion of populated areas and the need to access remote locations via vehicle, roads are required, but their impact is greater than just their physical footprint. Mitigation efforts, such as the installation of culverts, are one option of reducing road mortalities among amphibian and reptile populations. Amphibians and reptiles are by far the group with the highest mortality rate due to vehicle impacts. Elk Island National Park, located east of Edmonton, Alberta, offers an excellent opportunity to look at the correlation between road mortality incidences and culvert locations. The main parkway receives hundreds of thousands of vehicle visitors annually, and, with culverts already installed throughout the road network, the analysis of the mortality frequency and location of adjacent culverts should be evident. By examining the spatial relationship between road mortality incidences and culvert access we hope to find a workable solution for amphibian populations.

Faculty Mentor: John Fedoruk

Simply Complex: The Behavioural Role of the Protonema in Gametophyte Placement in Bryophytes

By: Rebecca Pacholuk

Recent research has shed light on the surprisingly complex behaviours of vascular plants, but potential behaviour in their non-vascular counterparts is often ignored. Protonema is a filamentous growth form that constitutes the first part of the gametophyte stage in most bryophytes. Highly responsive to stimuli such as light, gravity, and moisture, protonema's placement of gametophyte buds may be influenced by external stimuli in a manner indicative of behaviour and decision-making. However, integrated multi-stimuli responses are largely unstudied in this group of plants.

In this study, we developed protonema culturing methods and tested if protonema were capable of ‘searching’ for optimal light and nutritional conditions. We cultured protonema in live soil samples collected in Edmonton, Alberta, and will compare them to protonema cultured under controlled conditions on sterile agarose plates. This allows us to determine if commonly used artificial experimental conditions accurately reflect the behaviour of protonema on soil. The spores are grown in heterogenous light and nutrient environments to study how different stimuli in combination impacts bryophyte development. Our results suggest that protonema colonizes soil in an island-like fashion determined by the three-dimensional structure of the soil surface and extends exploratory caulonema strands from these chloronema-dominated islands. Such findings imply that protonema likely displays complex behaviour, but that smooth agarose plates may be a poor model system for studying it. The study of bryophyte behaviour has implications for understanding how e.g. climate change may impact bryophyte populations.

Keywords: Plant Behaviour, Bryophyte, Protonema, Phototropism, Chemotropism.

Faculty Mentor: Dr. Karen Christensen-Dalsgaard

Microsatellite evaluation in Cypripedium passerinum (Sparrow’s-egg Lady’s-Slipper)

By: Magnus Selma

Conservation of biodiversity becomes a global challenge that requires collective action to address conservation pressures and promote sustainable development. For the preservation of biodiversity, conservation strategies are necessary. In-situ and ex-situ conservation are two complementary strategies to ensure the short-term and long-term protection and survival of endangered species. The goal of this project is to assess the genetic diversity of threatened and endangered species. Specifically, this experiment focuses on evaluating the diversity of vulnerable orchids, Cypripedium passerinum, native to northwest Canada, using microsatellite markers. Samples were collected within the Wagner Natural Areak, west of Edmonton, AB. This project introduces the development of primer pairs in optimal conditions for PCR amplification. The representative microsatellite generated will be evaluated through an automated capillary electrophoresis for high-resolution separation, QIAxcel System, for genetic structure analysis. Furthermore, population genetics is designed to understand heterozygosity and the inbreeding coefficient. This project's outcome will allow genetic diversity assessment from developed primers that can also be used for investigating C. passirenum population and other Cypripedium species.

Faculty Mentor: Dr. David McFadyen

Crossing the Border: Viral Tactics at the Blood-Brain Barrier

By: Inder Singh, Farah Assaf & Caleb Odegard

The blood-brain barrier is a critical interface that protects the central nervous system from pathogens, including viruses. However, certain viruses have evolved sophisticated strategies to breach this barrier, leading to severe neurological complications. Through a review of current literature, we investigate how neuroinvasive viruses modulate blood-brain barrier permeability

and exploit host cellular processes to invade the brain and contribute to neurological disease. Insights into these mechanisms deepen our understanding of viral neuropathogenesis and can pave the way for potential therapeutic intervention strategies to mitigate the impact of viral central nervous system infections.

Faculty Mentor: Dr. Nina Bernstein

Using Synchrotron Radiation to Identify Trace Element Patterns in Bones.

By: Mimi Vignjevic

Bones are strong connective tissues required for locomotion, support, and protection of internal organs. Over time, microdamage from stressors weakens the bone and triggers the bone remodeling process. Bone cells such as osteoclast cells resorb old, damaged bone, while osteoblasts form new bone. Essential trace elements, like zinc, are required by bones in minute concentrations for normal metabolism and function. However, the mechanism of action induced by zinc is largely unknown. This project aimed to uncover zinc localization at the microstructural level to understand bone biology. Modern cadaveric human femoral bones were previously collected and analyzed using Synchrotron Radiation by PhD candidate Rachel Simpson. Images of zinc misdistribution were generated using ImageJ. Results illustrate that zinc localizes to the cement lines of mature osteons. Osteons in female bones tend to be more enriched than the osteons in male bones. Older male and female bones accumulate more zinc than younger bones. The data obtained from this project will provide more insight into bone biology at the cellular level. Normal bone structure and function can be identified, to better understand bone diseases, such as osteoporosis. By studying healthy and diseased bone patterns, a more uniform comprehension of bone biology can be obtained.

Faculty Mentor: Dr. Treena Swanston

Feeding Dynamics in Soft-Bodied Corals: Investigating Consumption and Localizing Microplastics Particles in Ricordea florida

By: Robyn Woodrow

Plastic in our oceans is a recently emerging pollutant with an alarmingly high concentration. With plastic being ubiquitous worldwide, the bioavailability to marine organisms is of significant concern. Ingestion of microplastics by coral species is a thoroughly studied issue, but few studies exist to investigate why ingestion occurs. This study explores the influence of microplastic type on gut retention time in Ricordea florida and the localization of plastic particles within the coral. Groups of up to 8 corals will be hand-fed pristine or consumer sourced PVC, PETE and polystyrene plastic pellets of sizes 150μm-200μm. Upon pellet placement, corals were given 1-hour to ingest the microplastics, and observations recorded for egestion or rejection. Further analysis includes dissections of the coral, where the goal is to localize plastic within the anatomy of corals. For localization, corals previously exposed to 0.01mg/L of yellow fluorescent polyethylene microspheres (106-125μm) will be viewed under a fluorescent microscope and dissected to locate ingested plastic. During feeding, the potential bacteria or appetizing additives on consumer plastic is expected to make this group the most ingested.

During dissections, corals are expected to have most of the plastics within the central digestive tract. Together, these experiments will provide knowledge on pre and post-ingestion variables. Preference testing and retention time during consumption will provide preventative assessment, while localization will help evaluate toxicity, chemical interactions, and potential bioaccumulation of plastic in the ecosystem.

Faculty Mentors: Dr. Ross Shaw & Dr. Matthew Ross

Screening invasive weed phytochemical extracts for potential to act as biofilm eradication agents

By: Malina Younathan

The overuse of antibiotics has selected for a high abundance and high exchange rate of antibiotic resistance genes in bacteria, resulting in the ineffectiveness of many antibiotics against resistant strains. As a result, resistant bacteria complicate many surgeries and lead to untreatable infections. Resistant bacteria can form aggregates called biofilms that attach to surfaces and further enhance their antibiotic tolerance. Antibiotic resistance coupled with the biofilm structure has led to their persistence. Currently, there is no treatment for established biofilms. Current research suggests certain plant phytochemicals can act as a biofilm-eradication agent. Invasive weeds utilize phytochemicals to establish themselves in foreign environments and therefore possess high amounts of phytochemicals. However, there is limited research on the potential of invasive weed phytochemicals as antibiofilm agents. For these reasons, our research examines the effects of invasive weed extracts against Escherichia coli biofilms. Local weed extracts were prepared using a Soxhlet extraction method using successive extraction solvents (hexane, ethyl acetate and methanol, respectively). The effects of the extracts on biofilm biomass were examined through an antibiofilm assay, in which bacterial biofilms were cultured with various concentrations of extract and biofilm biomass was quantified through crystal violet staining. Many ethyl acetate and methanol extracts from local invasive weeds exhibited concentration-dependent antibiofilm effects. However, the hexane extracts proved problematic as interference occurred between hexane extracts and the assay leading to inaccurate readings of biofilm biomass. Further screening of invasive weeds for antibiofilm effects will help assess their potential for identifying novel antibiofilm agents.

Faculty Mentor: Dr. Kim Harcombe

Child and Youth Care

Exploring Educators' Practices of Belonging

By: Iris Baguinon

Iris Baguinon is an early childhood educator. She will be one of the graduates of the Bachelor of Early Childhood Curriculum Studies program in the upcoming spring convocation. Iris is inspired by early childhood educators' passion, willingness, and commitment to turn mundane and everyday moments into extraordinary celebrations of children's sense of identity and belonging.

In her capstone project, Iris investigated how educators from Early Learning at MacEwan's (ELM) Toddler room explore and represent their ideas, wonderings, and understandings of what belonging means to their professional identity, as well as to their relationships with children and families. As a participant observer, she discovered that caring is inseparable from belonging. It is through educators' everyday caring practices that they nurture children's sense of belonging.

Faculty Mentor: Carolyn Parkes

Trauma Informed Care through an Indigenous Lens

By: Jeanjo Galandy

Come with me on my journey of finding what trauma-informed care looks like as an Indigenous Child and Youth Care Worker. What does it mean to be aware of indigenous history? Why is it important in regard to our practice, and how to begin your journey of trauma-informed care with the indigenous community to your practice.

Faculty Mentor: Jenny McGrath

Expanding and Diversifying Trauma Care Starts with Enabling Students to Embrace Their Unique Journeys

By: Jennika Kuruliak & Karalyn Mouly

This presentation presents a view of the current student experience of education and training in the Bachelor of Child and Youth Care program in Alberta, Canada. It dives into two students' experiences developing their professional identities through overcoming personal trauma and using their experiences to drive their individual niche directions in the CYC field. Areas of focus are holistic trauma-informed care specific to children in hospitals and dance as a creative method of addressing and healing trauma. Objective one is to shed light on gaps and challenges students face navigating education toward specializing training, including applying course materials to individual goals and interests. Objective two is to share the methods and projects that have been most valuable in directing the students' personal and professional development. Both students involved in this project have unique goals as to the contribution they want to make in the CYC field due to their unique lived experiences.

Faculty Mentor: Jenny McGrath

Falling Down the Rabbit Hole: An Introspective Self-Portrait

By: Jasmine La

There's many layers represented when viewing my art piece. However an essential part of my art piece lies at the bottom. What's seen is that I chose to represent myself as a Vinyl Record, which i've broken apart with a hammer and mended it with gold paint, an art technique known as Kintsugi. On top of the Vinyl lies a broken mirror, representing how I'm constantly reflecting upon myself, asking "is the reflection I see on the mirror really me?" Surrounded around the mirror are candy wrappers of a childhood favourite, as well symbolizes my Chinese zodiac: A

White rabbit. Lastly pearls accompanies a side of the mirror, I've been fond of pearls since early childhood, receiving a pearl necklace I still wear today. My fondness for pearls grew when I learnt that mollusks create pearls as a means for protection when irritants slip into their soft tissue. They layer the irritant over and over. With all these components combined, it encapsulates both joyous and painful memories and perceptions of self as everlasting beauty that can be appreciated and honoured.

Faculty Mentor: Rebecca Stiller

StoryWalk

By: Jessalyn LeBlanc

StoryWalk® is an internationally recognized concept that offers an innovative and interactive method for readers to enjoy stories. It involves displaying laminated pages from children's books along a path, guiding readers to the next page as they walk. This activity promotes early literacy development, physical activity, family engagement, and social-emotional learning. Developed by an interdisciplinary team at MacEwan, StoryWalk highlights monthly themes important to the community, fostering a welcoming learning environment and an inclusive, interconnected downtown area. Additionally, researchers highlight the significance of integrating communities and families within university settings to break down barriers to higher education, especially for individuals without direct university connections. By enhancing the appeal of Edmonton's urban spaces and emphasizing early literacy through reading and storytelling, StoryWalk champions community cohesion and togetherness. The initial book selections, grounded in Indigenous teachings, underscore the importance of reciprocal relationships in our communities and encourage living in harmony with the land. This presentation aims to describe the process of creating StoryWalk at MacEwan and its role in community building. The planning, execution, and anticipated impact will be discussed, focusing on the collaboration among the university, community, and families in an urban downtown context. By highlighting MacEwan's strategic vision, this presentation demonstrates the university's commitment to education and leveraging diverse community strengths.

Faculty Mentor: Dr. Ozlem Cankaya

Expanding and Diversifying Trauma Care Starts with Enabling Students to Embrace Their Unique Journeys

By: Karalyn Mouly & Jennika Kuruliak

This presentation presents a view of the current student experience of education and training in the Bachelor of Child and Youth Care program in Alberta, Canada. It dives into two students' experiences developing their professional identites through overcoming personal trauma and using their experiences to drive their individual niche directions in the CYC field. Areas of focus are holistic trauma-informed care specific to children in hospitals and dance as a creative method of addressing and healing trauma. Objective one is to shed light on gaps and challenges students face navigating education toward specializing training, including applying course materials to individual goals and interests. Objective two is to share the methods and

projects that have been most valuable in directing the students' personal and professional development. Both students involved in this project have unique goals as to the contribution they want to make in the CYC field due to their unique lived experiences.

Faculty Mentor: Jenny McGrath

How Child and Youth Care Students Understand and Communicate to Others the Meaning of Relational-Centered CYC Practice

By: Angela Schroeder, Kendal Fetter & Toya Richards

A qualitative course-based inquiry into the following research question: "What are CYC students' understanding of relational-centred CYC practice, and how do they articulate the uniqueness of CYC practice to others outside the field?"

Faculty Mentor: Dr. Gerard Bellefeuille

Communication

The Siren Song Stays the Same: Cult Recruitment Tactics and Rhetoric

By: Heather Hutchinson & Emily Homeniuk

Stories of cults, particularly those fueled by accounts of violence, have captivated the public throughout history. Beyond the fascination with high-profile cases lies a genuine curiosity about the factors that lead people to join and remain in cults. Particularly interesting are the methods cults use to persuade their followers to embrace self-annihilation willingly. While communication's role in cult recruitment may seem obvious, it remains an unexplored realm of study. Therefore, this research sought to shed light on the communication and rhetorical strategies employed by established cults like the Peoples Temple (Moore, 2013), the Branch Davidians (Rifkind & Harper, 1994), and Heaven's Gate (Robinson, 1997), compared to to the tactics employed by the self-help organization Teal Eye LLC (Swan, 2020). By examining the details and impact of Teal Eye LLC's (Swan, 2020) communication methods, the study aimed to determine if this organization employs a cult-like stratagem. This research employed historical, content, and critical discourse analysis to determine what communication tactics cults use to attract and retain followers. Moreover, this investigation addressed the scarcity of research and the strength of virtual connections in contemporary cult dynamics, considering the influence of digital platforms and online interactions.

Faculty Mentor: Candas Dorsey

Radical Third Spaces: How Independent Bookstores Contribute to Culture

By: Ashley Platz

This study focuses on comparing the book culture of Glass Bookshop in Edmonton, Alberta, Canada with Lighthouse Bookshop in Edinburgh, Scotland, United Kingdom. Unobtrusive

observation of the stores' websites, book club and in-store pop-up events, and in-store browsing habits at Glass Bookshop and Lighthouse Bookshop contributed to the data collected. Analysis of the stores' websites and events were one-time occurrences. In-store observations at Glass Bookshop and Lighthouse Bookshop occurred three times a week for two weeks. Data was analyzed using a qualitative approach. It was found that Glass Bookshop's minimalistic aesthetic was reflected throughout all its mediums. Lighthouse Bookshop's slightly busy aesthetic was reflected in the warmth surrounding its event and store aesthetic. A survey was distributed to both store's staff and customers, but the results are not discussed.

Faculty Mentors: Dr. Lucille Mazo & Dr. Leslie Vermeer

The New Robert Burns: How the Preservation and Promotion of the Scots Language Continues on Social Media

By: Joanna Dawyd

No abstract available.

Faculty Mentors: Dr. Lucille Mazo & Dr. Julia Peters

Computer Science

Procedural Generation in Game Development

By: Jehdi Aizon, Joseph Latina & Josh Coss

A top-down roguelike dungeon targeted towards players who love a unique experience every run and inspired by the game Dead Cells where the player has to go through randomly generated dungeon maps to find the exit. Items, shop, power upgrades, and weapons are encountered throughout the game to help the player complete the level. This game might appeal more towards gamers that have an aesthetic preference towards pixel art and exploration lovers who enjoy a fresh experience with each gameplay. Our focus is to show our research of procedural generation in game development, as well as share the experience of working with the design department to complete the game.

Faculty Mentor: Dr. Sam Qorbani

Preventative Health Mobile Application: Bridging Machine Learning with Wearable Health Sensors.

By: Simon Gordon & Eric Cheung

In collaboration with Dr. Samuel Mugo's research group, we aim to create a mobile application that can pair to a sweat sensor via bluetooth and output relevant information to the user about their cortisol levels. Data gathered from the device will be uploaded to a cloud, where raw data and user information will be stored and modified. The data will be capable of displaying averages of the user's cortisol levels, and output the results of tests throughout the day. The app

will have support for both apple and android. If there is remaining time, we may plan/implement additional features or functionality, and plan for future support for tracking other sensors. This data on the cloud in later phases will be used to calculate safe ranges for a user using machine learning models, as well as incorporating the DSM as a safeguard around false positives. The project will also encompass a greater number of other hormones, such as adrenaline, to enable an even greater coverage of the user's health. In all, we aim to create a cortisol sensor connected to a mobile app for the purposes of monitoring real time mental health data for proactive and timely interventions.

Faculty Mentor: Dr. Samuel Mugo

Use of Pose Estimation Techniques In Harm Reduction

By: Ian LeBlanc

Pose estimation is a technique in computer vision that analyzes an image to infer a person's position and orientation. A person who has taken opioids is likely to give visual cues, i.e. a slouched posture. A repository of images was built, consisting of pictures taken by the researchers using themselves as a subject to depict such postures as well as benign ones. Only images of the researchers taken by themselves were used in this project. The images are then labelled to reflect the situations that are reflected in each image. Pose estimation software then converts the poses in the images to numerical data that can be fed to various machine learning algorithms to create models that are capable of learning how to classify whether or not an individual is experiencing opioid sedation. These models can then be used on new and unseen images for classification, with 91% accuracy based on test data. It is hoped that such techniques could be applied as part of overall harm reduction strategy, for example receiving image data from a security camera and alerting appropriate responders.

Faculty Mentor: Dr. Jeffrey Davis

TFunHDDC - Implementing a Clustering Method for Functional Data with Outliers in Python

By: Malcolm Nielsen

Data as a function of time – also known as functional data – is important for understanding trends over time. Grouping this data into meaningful categories also provides a way of organizing and understanding the data. However, the presence of outliers can result in incorrect or inaccurate groupings, giving misleading results. TFunHDDC is a clustering method that was developed to cluster functional data containing outliers by using a mixture of t-distributions. This method was written in the programming language R, as it is a language primarily used for statistical purposes. However, in recent years, Python has become a popular language for machine learning and data analysis. This project's goal was to port TFunHDDC over to the Python language, as well as its predecessor method, FunHDDC. As a result, fully functioning implementations of the TFunHDDC and FunHDDC methods now exist in Python, allowing for functional data clustering on data with outliers in Python. Similar results to the R implementation

were achieved, including similar run-times and clustering results using the Poblenou NOx data, a popular benchmark dataset.

Faculty Mentor: Dr. Cristina Anton

Exploring Hippocampal Shape With Deep Learning And Statistics

By: Balkirat Padda & Matthew Craner

The hippocampus, a brain structure crucial for memory, learning, and navigation, is significantly affected by multiple sclerosis (MS), a chronic autoimmune disease disrupting the central nervous system. This study investigated the impact of MS on hippocampal morphology using a combination of machine learning (ML) and statistical methods.

We utilized MRI scans and corresponding hippocampal segmentations from 182 healthy individuals and 38 MS patients. To capture the intricate shapes of each participant's hippocampus, 3D meshes were created from the segmentations and subsequently processed using ShapeWorks, generating 128 data points representing the hippocampal shape. This investigation focused on how age and disease influenced hippocampal shape, specifically comparing healthy individuals to those with MS.

The high dimensionality and inherent correlations within the hippocampal shape data derived from 3D meshes necessitated dimensionality reduction techniques. We employed two methods for this purpose: Variational Autoencoders (VAEs) and Principal Component Analysis (PCA), comparing their effectiveness in encoding the data. Following this, we investigated the relationship between age and hippocampal shape in healthy individuals. This analysis involved linear and polynomial regression models alongside traditional statistical approaches. Finally, we compared the performance of Neural Networks (NNs) and Linear Discriminant Analysis (LDA) in differentiating between healthy and MS patients based solely on their encoded hippocampal morphology. Through these evaluations, we gained a deeper understanding of the potential of both machine learning and statistical methods for analyzing complex neuroanatomical data in the context of MS and its impact on the hippocampus.

Faculty Mentor: Dr. Dana Cobzas

Predict human stimuli with electroencephalogram (EEG) data with machine learning

By: Nhi Phan, Jesse Emery & Isra Jime

We use machine learning methods for processing EEG data as part of a collaboration with Dr. Cameron Hassall from the department of Psychology. The goal is to disambiguate different types of visual stimuli that were presented to the participants like for example shape or color, motor response, gain or loss.

Faculty Mentor: Dr. Dana Cobzas

Exploring learning through games

By: Max Schafer

Educational video games must be fun to capture the student audience and effectively engage learning. However, the multi-representational and interactive nature of game environments might need to be more effective in serving different learners with varying abilities. In this SSHRC Insight Development grant-funded project, the interdisciplinary research team developed and incorporated theoretically motivated game features into the Life On The Edge (LOTE) game to maximize undergraduate biology students' learning. The LOTE game is an educational tower defence game where the student plays a cell that struggles to survive waves of bacteria. This presentation introduces the game feature design and development process, especially Highlighting computer science use of the Unity Game Engine, structured query language, and learning experiences as a student developer and researcher. Additionally, the findings of the game effectiveness study conducted by the researchers in the biology courses at MacEwan University will be shared. In conclusion, this project suggests integrating empirically validated learning-supportive game features into educational video games.

Faculty Mentor: Dr. Ross Shaw

Reliability Aware Energy Management System for Multi-purpose Energy Harvesting Wireless Sensor Networks based on Deep Q-learning

By: Arshdeep Singh

The project aims to develop Energy Management Scheme for Multiple Application Energy Harvesting Wireless Sensor Networks (EH-WSN) using Deep Q-learning (Reinforcement Learning). Project's EH-WSN uses a time-interval based model. At the beginning of each interval, each node in the network is assigned a battery scheme by the sink node. The battery scheme is only valid during the duration of the particular interval it was assigned in.

The term "battery scheme" refers to a methodology in which transmission power levels are derived based on the current battery level of the node. Moreover, throughout the interval,

the node harvests energy from its ambient environment and stores it in its battery. Each node can be associated with a single application at any given time. The application and specific requirements are subject to change over the operational period of EH-WSN. At the beginning of each interval, based on the evaluated state, the sink node formulates an action for all individual nodes. Each node is assigned alterations to its current battery scheme at the beginning of each time interval. Overtime, the RL model converges to an optimal solution which aims to meet the Quality of Service requirements for all applications and optimizes the lifetime of EH-WSN.

Faculty Mentor: Dr. Mohammed Elmorsy

Spotify Data Visualization Web Application

By: Maria Sison, Nancy Dinh, Daniel Donovan & Katherine Cholowski

Aura is a web application that visualizes Spotify data, personalized for a user. The app allows individual users to interact with their listening data in a way that is more hands-on than Spotify, or other competitors' websites. This application is intended for users to discover and gain insights on their own listening patterns, as well as make data visualization palatable to the public.

There are a multitude of features to use on Aura. Users are able to view their top metrics over a variety of categories such as top artists, top tracks, top genres, and top moods. For each of these categories, users can select what time frame of data they'd like to see represented in Aura (4 weeks, 6 months, or 12 months). Based on these various metrics, Aura will give the user playable recommendations so that they can broaden their understanding of their music and gain valuable insight on how to diversify their own tastes. These curated recommendations and playlists that are generated by Aura can then be exported to the Spotify desktop application to be enjoyed by users whenever they'd like.

Faculty Mentor: Dr. Indratmo Indratmo

Decision Sciences

Canadian Market Analysis for the Feasibility of Application of Supply Chain Theories

By: Curtis Dunford

An assessment of the Canadian market through it's diverse product and resource production and disbursement through out the Canadian Supply chain. To identify potential leverage points to redefine the strategies utilized by industries to create a more resilient supply chain. This research involves literature review, statistics Canada informational analysis, surveys, and interpretation of data to present a portrait of the Canadian Supply chain.

Faculty Mentor: Dr. Parminder Singh Kang

Supply Chain Risk Analysis using Transport Canada Rail Data

By: Matthew Kraus

In response to the critical need to mitigate risks within the Canadian supply chain, this research leverages data mining techniques to analyze railcar data from Transport Canada. Beginning in 2017, Transport Canada initiated detailed surveys of major organizations in each transportation category, providing a rich dataset spanning five years that offers detailed insights into freight movement in Canada. This study focuses on datasets containing rail performance statistics from Canadian National and Canadian Pacific Kansas City rail carriers to address key business challenges. The research aims to identify and address potential bottlenecks in service, provide

actionable insights with business context through classification methods, investigate the mutual impact of each carrier’s traffic, and demonstrate the value of data mining in uncovering hidden truths within large datasets.

Faculty Mentors: Dr. Parminder Singh Kang & Dr. Xiaojia (Sunny) Wang

Insights into Industry Demand Forecasting: Machine Learning Approach Based Analysis of Qualitative Data

By: Briana McWhirter

This poster presents findings from a study investigating Small and Medium-sized Enterprises' (SMEs) demand forecasting needs and industry practices using a machine learning approach based analysis of qualitative data. Demand forecasting is vital for predicting future demand, requiring historical data analysis, market research, statistical techniques, and advanced data analytics. Leveraging Machine Learning (ML) and Text Analysis (NLP) techniques, the study aims to improve forecasting accuracy and decision-making in SMEs. The project utilizes Python, Microsoft Teams, and qualitative and quantitative analysis methods. Key findings reveal a substantial adoption of formal forecasting processes (84.6%). Despite recognition of advanced digital technologies' potential, traditional methods prevail in industry practices. Recommendations focus on bridging the academia-industry gap and integrating diverse systems and data sources for enhanced forecasting effectiveness in the SME sector.

Faculty Mentor: Dr. Parminder Singh Kang

English

Engendering Agency in a Selection of Marie de France's Lais.

By: Brittany Ade

Marie de France, a twelfth-century French poet widely believed to be the originator of the Breton lai, wrote a collection of twelve lais featuring a blend of love, chivalry, and moral reflection. Further, she is known for her feminine perspective and inclusion of multidimensional female characters in her works. While Marie’s writing encompasses a variety of themes concerning women, this thesis will focus on emphasizing the female agency resulting from the relationships between women within a selection of her lais. Overall, I will examine four of Marie’s lais, Deus Amanz, Guigemar, Le Fresne, and Eliduc, for portrayals of women’s relationships that result in increased agency for the female characters.

Faculty Mentor: Dr. Pamela Farvolden

The Discourse of the Pep Talk: Professional Sports Oration

By: Payden Bialowas

This paper illuminates rhetorical principles introduced by Cicero in his book De Inventione, which are further applied to contemporary professional sports pep- talks. By incorporating Cicero's pillars of rhetoric, specifically invention, disposition, and elocution, into modern-day professional sports, the optimal framework for the pep-talk is introduced according to the demand of the current scenario. In order to effectively analyze the art of professional pep talks, this article will contain embedded videos and live links to various pep talks, which will truly demonstrate the motivational impact of oration in sports. In addition to the videos, the most prominent quotes from the pep- talks are transcribed to emphasize the rhetorical features of the clip to further explain the relevant pillar of rhetoric. Furthermore, this paper will delve into the numerous articulation techniques coaches pursue to ignite a psychological response in athletes in preparation for crucial games. In pep-talks, the exigencies of the present moment are acknowledged and noting why athletes respond to certain stimuli is essential for coaches when producing an efficient speech. Ultimately, professional sports oration actively presents a solid foundation for the ever-changing dimensions of sports as coaches continue to motivate athletes through the essence of their words.

Faculty Mentor: Dr. Robern Einarsson

The Evolution of the Sapphic Vampire

By: Navreet Gill

The sapphic vampire started as a representation of the fear of the queer other in the nineteenth century and developed into an accepted character type whose sexuality is not a factor of othering through adaptations and interpretations by queer creators. In the novella Carmilla by Sheridan Le Fanu, Carmilla, the sapphic vampire, shows the fears of female sexuality and homosexuality present in the nineteenth century. However, through adaptations such as such as the graphic novel When I Arrived at the Castle by Emily Carroll, Carmen Maria Machado's edited version of the Carmilla novella and the web series Carmilla by KindaTV, the representation of sapphic vampires in the age of social media has transformed from fear to queer representation. The figure of the sapphic vampire has been accepted by LGBTQ+ creators, connecting to the otherness the creature faced, and people like Emily Carroll, Carmen Maria Machado, and the queer artists involved in the Carmilla web series have imagined it as a mutating character who can occupy different roles without negatively affecting the sapphic community.

Faculty Mentor: Dr. Daniel Martin

"Son of Terah": Prairie Fiction of the Depression

By: Jessalyn LeBlanc

The "Dirty Thirties" brought hardships to families on the prairies since the prolonged drought led to failing crops and economic devastation. Farmers fought to preserve their land while struggling

with the pressures of their expected masculinity, and their wives dealt with running a household on limited resources all while fighting isolation. From this period of suffering stemmed many beautiful works exploring the struggles people went through in losing their land and their relationships. Fiction by Martha Ostenso, Sinclair Ross, W.O. Mitchel, William Faulkner, Frederick Philip Grove, and Gwen Pharis Ringwood pair the complementary aspects of prairie and eeriness to explore the land's impact on romantic and familial relationships, and end on a bittersweet or creepy note. I want to contribute to fiction that focuses on the impact of the landscape on the individual and their relationships, and fiction that incorporates themes of the battle between man and land and the physicality of the prairie upon people. My short story is a retelling of the story of Abraham, Sarah, and Hagar, set in the prairies during the Great Depression and told in three parts focalized through the three characters. The story portrays themes of jealousy, loss, and worship in addition to themes of the prairie.

Faculty Mentor: Jacqueline Baker

Resurgence and Indigenous Futurism in Indigenous Literature

By: Crystal Webber

In the realm of Canadian literature, the general question emerging asks "Is Indigenous literature considered Canadian literature?" To reframe the question, should Indigenous literature stand as its own category and how do their stories demonstrate history and culture within the framework of Indigenous resurgence? While Indigenous literature includes various genres and styles, I argue it is separate from Canadian literature as a whole. Indigenous authors such as Leanne Betasamosake Simpson and Chelsea Vowel, challenge the depiction of narrative and storytelling by cultivating Indigenous tradition in their works. Indigenous literature should be considered uniquely heterogeneous as there are a multitude of different cultures, languages, and practices which apply to their literary works. Simpson's "Big Water" and Vowel's "Kitaskinaw 2350" demonstrate a world in which technology, the environment, and indigeneity coexist. Their stories reflect on the future and past of the Indigenous experience in Canada and impose the question of Indigenous futurism. "Big Water " plays with diegesis and intertwines an Anishinaabe creation story with contemporary events. The diction Simpson uses promotes the interconnectedness of Indigenous culture and the future with technology. On the other hand, "Kitaskinaw 2350" integrates Cree culture with technology to discover the violent colonial history in order to create a better future. Both of these stories incorporate contemporary society with an Indigenous perspective in order to depict a future in which Indigenous cultures thrive in the modern era.

Faculty Mentor: Dr. L. Camille van der Marel

Human Services and Early Learning

How to Identify and Respond to Racism: An Environmental Scan of Existing Resources

By: Mckenzie Croken

Together we will be looking at existing resources that are available that will help new comers to Canada respond to racism. We will use a Canada wide lens to asses what is out there already and we will put forth ideas to help bridge that gap that exists in resources, if there is one.

Faculty Mentor: Dr. Lun Li

Imagining Educators' Roles through the Culture of Reflective Practice: A Collaborative Approach

By: Klebshiela Raven Dante

In the field of Early Childhood Education and Care (ECEC), educators play a pivotal role in providing high-quality childcare. This study delves into the importance of fostering and co-creating a culture of reflective practice and supporting educators to continually imagine their roles. A culture of reflective practice is significant in shaping educators' identities and fostering a sense of community within ECEC settings. By constantly reflecting on their experiences and practices, educators continue strengthening their practice and gaining new understandings and perspectives with others. In this study, educators engage in reflective practices through a collaborative approach and ongoing dialogue, prompting a deeper understanding of their assumptions, beliefs, and values, thus informing more intentional curriculum decisions and continuing to imagine their roles. Using various methodologies, such as one-on-one dialogues, documentation, and questionnaires, to gather comprehensive data., the findings highlight the significance of acting as critical friends, creating spaces for reflection, and the practice of relationships as a means to cultivate a culture of reflective practice. Additionally, the study underscores the interconnections between reflective practice, risk-taking, and self-efficacy, revealing their profound influence on each other. Implications suggest the importance of embracing reflective practices, ensuring accessibility of tools, the role of curriculum collaborator as a critical friend and fostering collaborative communities of practice to support educators' continuous growth and contribute to the quality of care provided to children and families. Ultimately, fostering a culture of reflective practice remains integral in shaping educators' identities and practices, contributing to ongoing learning and growth within ECEC settings.

Faculty Mentor: Dr. Nancy Thomas

Beyond the Research: Skills for Life

By: Keirsten Taylor, Iris Baguinon & Courtney Smith

Engaging undergraduate students in research activities is increasingly recognized as a crucial element of their educational journey, offering significant benefits for academic understanding and personal growth. Participation in research promotes critical thinking, bolsters problem-solving abilities, refines communication skills, and fosters resilience and perseverance. These competencies are essential for navigating future career challenges. This panel presentation explores the multifaceted impact of integrating research into the undergraduate curriculum. It highlights the importance of undergraduate students involved in research processes, enhancing

research-specific knowledge, but highlights how this involvement produces transferable skills across a broad spectrum of professional fields.

Through the lens of these experiences, this presentation will dissect the process of confronting and overcoming setbacks, and the personal development that ensues. Structured in six segments, this panel aims to shed light on the transformative journey of undergraduate research, illustrating its role in equipping students with a versatile skill set that prepares them for the complexities of the future.

Faculty Mentor: Dr. Ozlem Cankaya

Humanities

Mirror Theory

By: Amanda Fuenmayor

Mirror Theory is a paper that I had written about the painting “Las Meninas” by Diego Velasquez in the Barroque period. The paper analyzes perspective and reality through the use of the mirror in this painting.

Faculty Mentor: Dr. Erin Cowling

Bullfighting in Spain

By: Javier Gonzalez Latorre

My research poster looks at the appearance of bullfighting in Spain in order to understand how this cultural artifact has developed and evolved from its earliest inception.

I highlight the influence of the Roman empire, the different stages of a modern bullfight, some important and historical figures, and also the controversy regarding this practice.

Faculty Mentor: Dr. Erin Cowling

A Fatal Pretext: The Spiral of Redemptive Violence and the Thermidorian Reaction within the French Revolution

By: Cadence Mutch

From 1792 onwards, a spiral of redemptive violence engulfed the French Republic. In the wake of the 10 August insurrection, through the Thermidorian Reaction on 9 Thermidor Year II, and culminating in 13 Vendémiaire Year IV, the absence of rational governance fueled cycles of violence and political aspirations that proved disastrous to the establishment of a Republic. The Reign of Terror, marked by widespread executions and purges, demonstrated an intensification of redemptive violence in pursuit of revolutionary justice. Using Maximilien Robespierre's final speech as a framework, this paper investigates victory as a “fatal pretext” for ambition and the repression of liberty while highlighting the revolutionary government's use of force to uphold its

ideals. This examination of the cycle of redemptive violence established by French revolutionaries' pursuit of liberty, equality, and fraternity exposes the complexities of revolutionary ideology, and the dangers of unchecked power amidst tumultuous times.

Faculty Mentor: Dr. Kelly Summers

Coalbed Methane Ownership: The History of Surface and Subsurface Land Ownership in Alberta and it's Impact on Land Ownership Today

By: Emma Mydlak

The ownership of Alberta’s minerals is a complicated situation. Focusing on the subsurface resource coalbed methane – as it is unique in that it was debated to either qualify as an excess of coal and therefore belonging to whomever owns the coal, or a natural gas, belonging to whomever owns the natural gas rights – an investigation into the Dominion Lands Act of 1872 and the Alberta Natural Resources Act of 1930 leads to the conclusion that mineral ownership in Alberta can be narrowed down to depending entirely on when the land was bought in the period between the late 1880s and 1912 and from who the land was bought from. The more modern legislation dealing with land ownership, like the Law of Property Act, the Land Titles Act, the Surface Rights Act, and the Mines and Minerals Act, are the Alberta government’s attempt at reconciling with the confusion caused by the fact that Alberta’s lands were initially invested in the federal government and not Alberta until the transfer in 1930. This research can be applied to more then just coalbed methane; in fact, practically any subsurface resource, depending on its’ classification as outlined in modern legislation, can determine its’ ownership based on the transactions regarding any particular piece of land and from who the land was given by/bought from.

Faculty Mentor: Dr. Robert Irwin

Indigenous Ceremonial Understandings of the Numbered Treaties

By: Shyla Omeasoo-Rain

The Numbered Treaties and the understanding of the agreements from an Indigenous perspective has been argued and analyzed since the signings. Ceremonial practices are integral to Indigenous cultures and their perspectives. This paper focuses on contextualizing Indigenous understandings of Treaties moreover the Numbered Treaties from a cultural perspective, and how facets of Indigenous cultures inform the positions, perspectives, and understandings of Indigenous peoples negotiating and signing the Numbered Treaties.

Faculty Mentor: Dr. Robert Irwin

Can a video game serve as an effective Introduction to a particular time period?

By: Caitlin Reader

The Assassin's Creed franchise is well-known for delving into major historical time periods in their games. You are able to interact with multiple major historical events and characters from

the era the game is set in that you interact with. Given that you are supposedly replaying the memories of someone who lived during that time, albeit fictional, how much of the history shown in the game is accurate and how much is edited for story purposes? I will access some of the characters and events from one of the games, and look at what was done right, and what was left out.

Faculty Mentor: Dr. Kelly Summers

Is Homer's "The Iliad" a Reliable Source on Ancient Warfare?

By: Paige Reed

Many studies on Greek myth focus on the influence or impact the gods have on the heroes' actions within the story, often ignoring the historical relevance of the war tactics in the work. This paper analyzes the Iliad, which details the battles of both Achilles and Hektor within the time of the Trojan War, and argues that by comparing it to other historical evidence and scholarly works that explain the hoplite warfare tactics used in ancient Greece, ancient Greek myth can be used to understand the early developments of Ancient war tactics. This paper explains the historical relevance of the tactics Homer describes in the Iliad and how they can be used to further understand the development of Hoplite warfare.

Faculty Mentor: Dr. Jessica Romney

Transitional Justice During the French Directorate

By: Jake Ristic-Petrovic

This research project focuses on the evolution, successes, and failures of the French Directorate's attempts establish a coherent philosophy of political and civil justice following the Thermidorian Reaction and demise of the National Convention. The Directorate worked to improvise policies of reconciliation with the various factions borne out of the French Revolution, with varying degrees of success and very little consistency. Show trials, amnesties, and a new constitution were among the ways in which the Directorate sought to avoid the catastrophes of its predecessor bodies, and ultimately none of them proved sufficient to maintain power for long.

Faculty Mentor: Dr. Kelly Summers

Overcoming Tradition: Female Agency in Desengaños amorosos

By: Georgina Rivero Alvarado

This project analyzes three stories in Maria de Zayas y Sotomayor’s 1647 collection of novellas, Los desengaños amorosos. These “disenchantments of love” go beyond breakups or quarrels between lovers; the women in the desengaños suffer extreme violence at the hands of men, violence that the men and society condone due to the patriarchal influence on the social order. Zayas uses the trope of the innocent woman punished for the actions of men, found also in her contemporaries such as Cervantes and Calderón, to forge a new path of resistance for her female characters. Here, I will focus on stories demonstrating how the horrors experienced by

the women who survive these violent adulterers drive them to commit suicide or seek refuge in a convent. Analyzing three stories, “El verdugo de su esposa", “Tarde llega el desengaño", and “La inocencia castigada”, this project will demonstrate how the patriarchy and its values motivate and allow male characters to use and abuse women for their gain. Unfortunately, only some women survive the punishment and are able to seek refuge in a convent, where they find female solidarity. Throughout these stories, Zayas questions the ending traditionally given to women. Contrary to endings like that of Doña Mencía in Calderón's “El médico de su honra”, the end of each desengaño focuses on the future of the protagonists and how little by little they gain control over their lives through martyrdom and religious life.

Faculty Mentor: Dr. Erin Cowling

A Myth Greater than Zeus: Popular Perceptions and Scholarly Realities about the French Revolutionary Levée en Masse

By: Samuel Wild

In recent years, there has been an increasing interest in the Levée en Masse, or more accurately, its depiction in history. For years, the Levee has been used as a tool of propaganda and a supporting part of Marxist history on the French Revolution, creating a myth or legend of the Levée en Masse as a spontaneous and patriotic event where the men of France rushed to the republic's defence. However, this has changed as historians both inside and outside France have challenged the myth of the Levée, and by the late 1980s, this myth was only perpetuated by a dwindling number of Marxists. The issue is that this perception of the Levée en Masse has been defeated in academia; the myths of the Levée remain in the popular perception of history thanks to two hundred years of Marxist literature and French Propaganda. This presentation aims to identify and debunk the nationalist legend of the Levée en Masse that has distorted the Popular perception of this pivotal and complex historical event.

Faculty Mentor: Dr. Kelly Summers

International Business, Marketing, Strategy, and Law

The Honors Program: Who Knows About It?

By: Jayden Burgardt, Sam Carlyle & Brandon Dahl

This qualitative research paper was written by three students that were tasked with gaining insight into the Honor Program for the Bachelor of Commerce Marketing stream specifically. We were tasked with gaining information about the Honors Program and why the program has low enrollment.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Choosing Opportunities: Why Enrolment in the International Business Co-op Program is Low

By: Sarah de Kock, Emily Andrews, Darrien Crane, Ashley Jonas-Letain & Mason Toussaint

The International Business Co-op Program at MacEwan University has little enrolment. As a team, we have done secondary research, conducted in-depth interviews, and administered a questionnaire to gather intel regarding this issue in hopes of assisting the School of Business in increasing the level of interest in the program among MacEwan students.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Increasing Enrollment in MacEwan University's Co-op Program for Marketing Majors

By: McKenna Down, Mercedes Lam, Ashley Reid & Denise Berry

The need for more enrollment in the co-op problem has been an increasing problem for the last few years. The co-op program is important as it adds value to the university, besides the small class sizes and access to professors. In our research, we aim to find the deterrents to enrolling in the program so we can curate strategies to increase participation.

We looked into these deterrents by conducting secondary research consisting of sixteen academic articles that researched other work-integrated learning opportunities, including co-ops and internships.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Social Marketing Messaging: Investigating the Perceived Danger of Differing Appeal Methods

By: Macheala (Kayla) Friesen

Contrary to popular belief, seat belt safety is a growing field of scholarship with many areas of future research. This study proposes an experimental design to investigate the impact of social marketing messages with different emotional appeal methods to measure participants' perceived danger of seat belt safety messages. This experiment uses fear-based, humour-based, and information-based emotional appeal methods to measure participants' perceptions of fear. It seeks to determine which of the emotional appeal methods will make participants more likely to wear a seat belt in a motor vehicle.

Faculty Mentors: Dr. Etayankara (Murli) Muralidharan & Dr. S. Bruce Thomson

Enhancing Engagement, Research Exploration on How to Increase Participation in the International Business Honours Program

By: McKenna Giese, Ali Tamimi, Ransford Toe & Erika Teveniuk

Research Exploration on How to Increase Participation in the International Business Honours Program

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Macewan Eats: Qualitative Research Report

By: Jett Hemmerling, Bryan Jordan, Jeremiah Nisar & Riley Sudo

MacEwan Eats, a collection of local vendors at MacEwan University, prides itself on offering diverse food options while promoting sustainability. However, discussions with MacEwan Eats representatives Susana Chalut and Destiny Seng revealed a management concern regarding the overall quality of goods and interactions with consumers.

To address this issue, our group conducted a study aimed at understanding why food vendors at MacEwan Eats may not be meeting expected service quality standards. The study focused on five popular MacEwan Eats locations: Starbucks, Griffins Landing, Munch, Takam Market, and Tim Hortons.

Utilizing an exploratory research approach, the study employed mystery shoppers to assess the service quality of these locations through in-depth interviews. The interviews were structured around various aspects such as overall experience, staff friendliness, food quality, affordability, and suggestions for improvement. By utilizing the grounding theory, the study aimed to identify factors hindering service quality and propose actionable strategies for enhancement.

Key findings from the interviews highlighted areas where improvements could be made, including staff friendliness, food quality, customer service, and affordability. Additionally, suggestions were provided to address these issues, such as staff training, menu enhancements, and pricing adjustments. We additionally collected secondary data to further deepen our understanding of the problem, and found different examples of other universities tackling similar issues.

Overall, the study emphasized the importance of understanding consumer perspectives in improving service quality at MacEwan Eats. By implementing the suggested strategies, MacEwan Eats can enhance the overall dining experience for students and further align with their mission of supporting local vendors and promoting sustainability.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

The Role of Religiosity in Influencing Intrapreneurship

By: Natalia Hotsaliuk

Analyzing almost 200 articles from the Web of Science and Academic Search Complete, this research identifies how religious beliefs influence corporate entrepreneurship. Preliminary findings reveal significant gaps in understanding religiosity's nuanced effects on intrapreneurial activities. Emphasizing the importance of cultural and religious values in driving innovation, this study suggests that integrating these factors could advance corporate entrepreneurship. This research seeks to identify gaps for further exploration and offer insights for businesses to

enhance their entrepreneurial strategies through religiosity, highlighting the interplay between cultural factors and innovation."

Faculty Mentors: Dr. Carlos Freire-Gibb, Dr. S. Bruce Thomson & Dr. Etayankara (Murli) Muralidharan

Mapping Legal Roles: Stakeholders' Perspectives of Paralegal Regulation in Alberta

By: Sam McDowell

This research study embarks on a detailed investigation into the specific roles and responsibilities assigned to lawyers, paralegals, and legal assistants within the legal industry. The study's primary objective is to shed light on the division of duties among these professionals. To achieve a comprehensive understanding, the research includes the perspectives of lawyers, paralegals, legal assistants, and even paralegal students to gain a holistic understanding of the expectations and responsibilities associated with the paralegal role.

In addition to the roles and responsibilities, the research also critically analyses the level of support for paralegal regulation within the province of Alberta. It aims to identify and understand the anticipated education requirements, relevant experience, and proposed regulatory framework for paralegals in Alberta.

The core purpose of this investigation is to provide valuable insights that can contribute to a better understanding of the paralegal practice and its regulation within the legal landscape of Alberta. Through this, we can better comprehend the current legal framework and expectations of the paralegal role, which is essential in forming a practical plan for regulating paralegals who practice independently.

With this research, we aim to highlight the potential of independently practicing paralegals in increasing access to justice. They can do this by offering affordable legal services typically provided by lawyers, making legal assistance more accessible to a broader demographic. This research will hopefully serve as a stepping stone towards a more inclusive and regulated legal industry.

Faculty Mentor: Ashley Stasiewich

Overcoming Legal Barriers: Implementing AI Solutions for Self-Represented Litigants in Criminal Law

By: Sam McDowell

This literature review addresses Alberta's pressing need to bridge the access to justice gap, where financial barriers lead to increased self-represented litigants. Examining the challenges self-represented litigants face and existing Artificial Intelligence (AI) technologies available to legal professionals underscores the importance of broader implementation of AI to benefit self-represented litigants in criminal cases.

Key findings highlight disparities in legal representation and resources, emphasizing the potential of AI tools to address these challenges. The review discusses the benefits of AI for self-represented litigants, such as cost savings and time efficiency, alongside challenges like algorithmic bias and data privacy concerns.

Due to Alberta's complex and ever-evolving legal landscape, cases involving self-litigants are more costly and time-consuming for the justice system. AI tools could improve this by providing guidance on procedures, forms, and legal research.

Legal, ethical, and moral implications of AI use, including transparency and accountability, are explored, with case studies demonstrating successful AI implementations in legal settings. Future directions and recommendations advocate for responsible AI deployment and further research to advance understanding and practice in this field.

This study emphasizes the crucial role of AI in supporting self-represented litigants and calls for ongoing efforts to address access to justice challenges and promote fairness in the legal system through AI integration.

Faculty Mentor: Ashley Stasiewich

Senior Well-Being and Technology: A look into senior consumers' need fulfillment with smartphone technology.

By: Ashlyn McCormick

While there is a growing availability of technology aimed at enhancing senior well-being there is a significant gap in research focusing specifically on seniors who independently use it. This study targets seniors aged 65 and above with mobile smartphones, exploring their well-being. It uses self-determination theory and focuses on competence, relatedness, and autonomy, examining how smartphones impact these aspects. Research questions delve into the technology’s effects on seniors, how it aids or hinders their needs, and barriers to use.

Faculty Mentor: Dr. Albena Pergelova

MacEwan Eats Ambassador Program: How MacEwan students can influence consumer behaviour on campus

By: Mindi Nanayakkara, Temi Oyenekan, Sydney Harrison & Alyssa Hayes

MacEwan Eats Ambassador Program: How MacEwan students can influence consumer behaviour on campus

Faculty Mentor: Dr. Fernando Angulo-Ruiz

E-Portfolio for Legal Professionals

By: Meg Roth

A good portfolio, especially in non-creative professions, consists of more than simply a collection of documents but also includes the reflective process (University of Waterloo, 2024). An e-portfolio for non-lawyer legal professionals, such as paralegals and legal office assistants, is a great asset to accompany a resume and cover letter during a job search and/or within the hiring process. This poster presentation will examine whether the importance and value of e-portfolios for non-lawyer legal professionals like office assistants and paralegals will be of use when entering the workforce by delving further into the value for office assistants to have one e-portfolios during the hiring process, the value of what an e-portfolio is including its history, what the reviews say about portfolios, as well as the professional career skill sets that are offered in schools.

Faculty Mentor: Ashley Stasiewich

Revitalizing Alberta Avenue

By: Fatima Shoaib, Jaishwin Singh, Layla Ghasri & Mursal Muheeby

This research explores comprehensive strategies to transform the negative perception and stigma surrounding Alberta Avenue into a vibrant, safe, and inviting community. The primary objective of this research is to address the challenges facing the 118th Avenue district in Edmonton, Alberta. The focus is on sustaining growth, ensuring safety, and enhancing the overall appeal of the district. The management objective aims to counteract the negative perceptions surrounding the district and support local businesses, ultimately improving the image of Alberta Avenue.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

MacEwan Eats marketing research report

By: Ethan Wutzke, Kennedy Gallibois, Jenna Kelly & Ruban Pattarh

Our group has conducted marketing research over this current semester on behalf of MacEwan Eats to determine the feasibility of a social media brand ambassador program. This presentation details the feasibilty and doability of a brand ambassador program for the selected company.

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Pedagogical Approaches to Paralegal Education in Alberta- Flipped Class Method

By: Tyra Alexein Zaguirre

The purpose of this study is to explore whether implementing a flipped classroom approach into an undergraduate level legal technology course for paralegals in Alberta generates learner engagement with fundamental legal knowledge appropriate for paralegals.

Faculty Mentor: Ashley Stasiewich

MacEwan Eats Mystery Shopper

By: Ali Zahra, Amna Abu Elhassan, Nomin Altankhuyag, Michaela Heighton & Naraya Hidalgo

MacEwan Eats Mystery Shopper Group 1

Faculty Mentor: Dr. Fernando Angulo-Ruiz

Mathematics and Statistics

Euler Characteristic

By: Lam Ha

The Euler characteristic is a fundamental concept in mathematics. It is a topological invariant and describes the essential geometric properties of a topological space. In this presentation, I introduce the Euler characteristic and explore some of its properties. Several examples will be presented.

Faculty Mentor: Dr. Cristian Ivanescu

Use of Latex and other software for illustrating mathematical concepts

By: Tyler Jaglal

The work is focused on the use of Latex and related graphical software for illustrating some mathematical concepts. Those concepts include graphical presentations related to some notions of analysis in the extended complex plane. In particular, special considerations will be given to the stereographic projection, which often provides a natural setting for interpreting transformations in the complex plane.

Faculty Mentor: Dr. Mark Solomonovich

Unmet Mental Healthcare Needs in Canada

By: Samantha Malek & Stuart Dovey

This research aims to determine significant factors correlating to self-reported unmet mental healthcare needs in Canada. Demographic, socioeconomic, and health-related variables were examined by logistic regression. Data was collected from the 2018 Canadian Community Health Survey. Results from the model show that having an anxiety disorder, being younger, having post-secondary education, and identifying as bisexual or identifying as Indigenous all increase the odds of experiencing unmet mental health needs. Determining the barriers to accessing mental health care and the demographic of people who need it most can help guide decision-making on the direction of expansion of our healthcare system. Overall, the complexities that Canadians face in terms of intersectionality and status must be addressed to deal with the rising mental health crisis in Canada.

Faculty Mentor: Dr. Wanhua Su

What Differential Equations Can Tell Us About the Future of Human-Coyote Interactions in Edmonton

By: Sarah Marklund

Human-coyote conflicts have become increasingly prevalent in recent years, including in Edmonton. In order to predict how the future of these interactions may look, we formulate and study the behaviour of a system of differential equations. This system shows that the size of the coyote population, as well as the number of bold coyotes and individuals concerned about coyotes, will stabilize. Therefore, a complete elimination of bold coyote behaviour may be impossible without changing our approach to managing these conflicts.

Faculty Mentor: Dr. Cristina Anton

An Introduction to Hopf Algebras

By: Oscar Martinez Luna

Heiz Hopf, Circa 1939, while working on the field of Algebraic Topology introduced the idea of a Hopf algebra. In this presentation I will explore the construction of said algebra and different areas of study that relate to it.

Faculty Mentor: Dr. Cristian Ivanescu

I-fts pointing errors analysis

By: Tristan Monahan

My current project, under the supervision of Dr. Geneviève Gariépy and the Option Analysis Team (OAT), is a continued project from a performance-modelling software project initiated by a previous intern, Declan McCloseky. The model consists of reproducing part of the results of a stratospheric balloon campaign of the i-FTS instrument, a prototype for the greenhouse gas instrument envisioned for the Arctic Observing Mission (AOM). The goal of my project is to evaluate potential measurement issues with the AOM instrument.

Faculty Mentor: Dr. John O'Connor

A Dynamical Model of Predator-Prey Interaction with One-directional Cooperation

By: Malcolm Nielsen & L.G. Covelli

A new type of a Dynamical Model of interacting species is introduced. The model concerns a rather common in population studies situation when two species of predators hunt the same species of prey.

The novelty of this model, in comparison with numerous models previously studied, lies in a new type of interaction between predators: we have called this type of interaction unidirectional

cooperation. It is exhibited in a very unusual, but not uncommon behavior: one of the group of predators, the more proficient one, hunts more than it needs for itself, so as to leave part of the kill for a competing species of predators so that the latter do not interfere with the hunt and do not disperse potential prey.

This kind of behavior has been observed in Rocky Mountains, where artful lonely hunters cougars often provide bears with part of their kill; also a similar behavior has been exhibited in some African national parks by leopards, who leave part of their prey to packs of hyenas.

The study is focused on stability properties and possible existence of periodic solutions in such systems.

Faculty Mentor: Dr. Mark Solomonovich & Dr. Adrian Biglands

Variable selection for clustering and classification of data with missing values

By: Brynn O'Connell

This poster presentation embarks on a comprehensive exploration of explicit variable selection procedures in model-based classification, where classification aims to assign labels to unlabelled observations. Delving into existing methodologies, we will dissect the intricacies of variable selection, setting the stage for an extensive examination of an approach aimed at minimizing within-group variance while maximizing between-group variance, known as Variable Selection for Clustering and Classification (VSCC).

With a focus on enhancing classification accuracy and interpretability, we will unveil the details of VSCC, elucidating its significance in model-based classification frameworks. Furthermore, we will investigate how this approach performs when applied to simulated and real data sets with missing values.

Through meticulous evaluation and analysis, we will scrutinize the performance and robustness of the variable selection approach in handling the challenges posed by incomplete data. Our findings will be synthesized into a comprehensive discussion, shedding light on the implications of the results and offering valuable insights for future research directions and refinements in variable selection methodologies within model-based classification.

Faculty Mentor: Dr. Brian Franczak

Music

Composing Original Music for Student Cabarets at MacEwan University

By: Charise Eryka Delson

The student cabaret held by MacEwan's Music Theatre Program during the Fall and Winter terms is an avenue for music theatre students to showcase their talents–be it singing, dancing, or even clowning–in front of an audience. It is a safe space where students are encouraged to make creative decisions without the risk of being graded academically. Due to its nature,

students have more freedom to explore and work on different types of performances that are either part of their curriculum or outside of it. Most students perform pre-existing songs and dance choreographies from musicals, movies, or music singles. Additionally, some dance numbers also showcased choreographies made by the students themselves. With a scarcity in original pieces being performed, this project aims to explore the potential of a student-led creation of original music to be performed in the student cabaret.

Faculty Mentor: Dr. Allan Gilliland

Understanding Scottish-Canadian Music: A Research-Creation Project

By: Gillian Spencer

Through researching the cultural impact of Scottish emigration to Canada and how the Scottish-Canadian identity presents itself through music, I began my exploration of what it means to be Canadian. I have gained an understanding of how to create music as a Canadian with a diverse cultural background. I express my research not only through the academic and theoretical lens, but also by creating music based on what I have learned. This presentation directly explores the idea of research-creation, beginning with context and ending with artistic expression through composition.

Faculty Mentor: Dr. Allan Gilliland

Nursing

The Lived Experience of Being a Caregiver for a Family member With a Terminal Illness.

By: Kathleen Diaz Cortes

Family Caregivers are the invisible healthcare providers within our society, comprising a substantial portion of the population, with 1 in 4 Canadians stepping into this role at some point in their lives. Often, when we hear of death, our first instinct is to avoid its path, but for caregivers of terminally ill loved ones, confronting mortality is an unavoidable reality. Caring for a terminally ill family member carries unique challenges and responsibilities and places significant demands on caregivers, who play a vital yet often overlooked role. Despite their indispensable role, caregivers' experiences are not fully understood, and nurses lack the necessary tools and knowledge to support them adequately.

We will be exploring the lived experiences and responsibilities of caregivers for terminally ill family members, shedding light on the physical, emotional, and financial burdens they bear. Through a comprehensive exploration of the literature, we will uncover caregivers' multifaceted roles, from providing physical care and emotional support to serving as advocates and decision-makers. We will then discuss the profound impact of caregiving demands on caregivers' physical and mental health.

By gaining a deeper understanding of their experiences, we can better equip healthcare professionals and the healthcare system to meet family caregivers' needs. Additionally, this research allows us to examine how we may address the system to support this population. Given that anyone may find themselves in a caregiving position at some point in their lives, this topic holds profound implications for all individuals, making it an imperative area of study and intervention.

Faculty Mentor: Dr. Lisa McKendrick-Calder

A Risky Gamble on our National Health: Examining Alberta's Proposed Exit from the CPP

By: Karissa Goulding, Natalie Hansen, Dawson Hartman, Stephen Nasedkin & Camryn Lauer

The issue of Alberta's proposed withdrawal from the Canada Pension Plan (CPP) is of significant importance due to its potential impact on the health outcomes of older adults in Canada. This presentation examines the potential health inequities that could arise from a reduction in CPP funds for seniors in and outside Alberta after a potential implementation of an Alberta Pension Plan (APP). The background encompasses the history and success of the CPP in reducing poverty rates among seniors, as well as the challenges and uncertainties surrounding the transition to an APP, particularly in light of economic shifts such as the impending decline of Alberta's oil industry and rising inflation rates. Considering health as a holistic state of well-being, we propose the use of a Health Impact Assessment (HIA) to analyze the potential health outcomes of Alberta's departure from the CPP. Furthermore, we advocate for increased collaboration between federal and provincial health ministers and health leaders to ensure that all policies are screened for their potential impact on population health, with a focus on protecting the needs of vulnerable groups such as seniors. Overall, this presentation highlights the importance of evidence-based analysis and proactive policymaking to address the potential health repercussions of changes to pension plans affecting Canadian seniors.

Faculty Mentor: Dr. Morgan Wadams

Sharenting: Social Media Safety for Parents with Young Children

By: Kaelee Irvine, Randeep Brar & Ansh Arora

In contemporary society, health promotion extends beyond physical well-being to encompass digital safety, particularly concerning children. This presentation addresses the issue of social media safety among children, with a focus on the trend of "sharenting" which is defined as the sharing of photos and videos of children on social media, documenting daily living to major milestones. When parents post information and images of their children online, they may overlook the inherent privacy risks and expose their children to potential online predators. Utilizing scholarly articles and research, alarming statistics, and news stories, this presentation stresses the importance of maintaining children's privacy on the internet. This presentation will examine how sharenting can lead to identity theft, misuse of children's photos by strangers, exposure to online predators, and, in extreme cases, even kidnapping. Our health promotion team used current research to identify examples of methods and strategies aimed at protecting

children while still being able to stay connected with friends and family through social media. This presentation aims to alert young or inexperienced parents about the dangers of social media and assist them in navigating the digital environment with strategies to protect the identity and privacy of their children.

Faculty Mentor: Sharon Johnston

Exploring the Efficacy of Cognitive Behavior Therapy in adults with Concurrent Disorders

By: Shirley Jay

No abstract available.

Faculty Mentor: Randi Ziorio Dunlop

What are the maternal and child health impacts of cannabis use during pregnancy?

By: Jadyn Jelinski, Jordan Mehling, Asha Nelson, Tori Osborne & Aleena Taylor

With the increasing use of cannabis since its legalization in Canada in 2018, this poster highlights the maternal and child health effects of cannabis consumption during pregnancy. Numerous scientific databases were used to collect information on potential neonatal and childhood developmental outcomes and consequences of cannabis use when chestfeeding. Risk factors and motivations for cannabis use in pregnancy, as well as possible antepartum, intrapartum and postpartum effects on the pregnant individual are also discussed. Based on the literature, recommendations are made regarding prenatal cannabis use.

Faculty Mentor: Hanneke Croxen

Identifying Gaps In Care Between Discharge From Inpatient Psychiatric Settings To Living In The Community

By: Connor Kapty

This literature review examines gaps in care within healthcare systems that negatively impact service users as they transition from inpatient psychiatric settings to community settings. Topics such as historical contexts, readmission rates, intrapersonal factors, and institutional limitations are taken into account to explain the complex relationship between community and inpatient psychiatric services and how they influence current gaps in care. Interventions to address these limitations are explored, examining different models of care and their subsequent impact on gaps in care. The concepts of continuity of care and therapeutic relationships are then highlighted as vital factors when addressing gaps in care. Finally, this literature review suggests areas for future research to improve upon gaps in care.

Faculty Mentor: Randi Ziorio Dunlop

How Much Physiology Do Fourth Year Nursing Students Really Remember?

By: Sharlini Purani

There is a growing concern that nursing students struggle to retain adequate physiological knowledge throughout their program to meet their entry to practice competencies. However, how much and when this knowledge is lost over a four-year undergraduate Bachelor of Science in Nursing program is yet to be evaluated. According to Narnaware Y. 2021, physiological knowledge retention has yet to be studied as comprehensively as anatomical knowledge retention in healthcare disciplines, including nursing programs. This study aims to assess the extent of physiological knowledge decline among nursing students by their fourth year. It is evaluated by comparing their understanding of physiological knowledge in the first year after their physiology course and the fourth year after completing their Critical Care nursing course. Physiological knowledge loss was assessed in fourth-year nursing students by quizzing them on ten organ systems using the online quizzing platform – Kahoot. About nine to eleven knowledge and comprehension-level multiple-choice questions were delivered. These scores were then compared to first-year quiz scores on the same content to determine overall knowledge loss over three years. The data was analyzed by using SPSS II and compared using 2-sample t-tests. The findings of this research illustrate a general reduction in knowledge loss, with variations in the decline specific to each system. In medical and allied health students, the knowledge loss was significantly lower than previously reported (Pourshanazari et al., 2013). Compared to the third year, knowledge loss in the fourth year, however, is not significantly different (Narnaware et al., 2021).

Faculty Mentor: Dr. Yuwaraj Narnaware

Effects of Intimate Partner Violence During Pregnancy on Maternal and Neonatal Health

By: Sharlini Purani & Reyna Parikh

Intimate partner violence (IPV) is when harm is inflicted on an individual by someone they have a close relationship with. Types of abuse include physical, sexual, emotional or psychosocial, financial, and neglect. IPV during pregnancy is becoming more prevalent in the community and has detrimental health effects on maternal and neonatal health. Early recognition and intervention are crucial to prevent adverse outcomes. Previous research has shown that IPV does contribute to adverse maternal and neonatal health outcomes. The purpose of this research is to identify the negative health outcomes of maternal and fetal health and the barriers to intervention engagement that mothers face due to IPV. The review was done by analyzing and identifying significant themes of previously published articles. We used 19 articles for the review: 15 were primary (5 were qualitative, 10 were quantitative), and four were secondary. IPV does have negative implications on maternal health, such as mental health illness, physical injuries, unhealthy behaviors, and other complications during delivery. Negative fetal implications include low birth weight, preterm birth, developmental issues, stillbirth, and increased risk of miscarriages. The barriers to intervention engagement are partner-related, mental health issues, practical barriers, pregnancy and health, cultural barriers, and perceived systemic barriers. The significance of this study was that it helped develop recommendations

that can help reduce the barriers to intervention, which positively impacts maternal and neonatal health for women experiencing IPV.

Faculty Mentor: Hanneke Croxen

What supports and barriers do Hispanic women face while breastfeeding.

By: Natalia Saavedra

North America, Hispanic women were found to be one of the populations with the lowest rate of breastfeeding at 53%, compared to the US national rate (57%) (Quintero et al., 2023) and Canadians who increased their breastfeeding rate among the population achieving a 91% in the periods of 2017 and 2018 (Chan, Labonté et al., 2023). This event has brought attention to exploring and understanding certain factors influencing breastfeeding practices among the Hispanic population. This literature review will investigate the support and barriers that Hispanic women face while breastfeeding. This research found that specific determinants of health, such as socioeconomic status, education, culture, and family situation, play significant roles in breastfeeding. Recommendations on improving the reinforcement of the spread of information about exclusive breastfeeding in the first months of an infant's life will enhance breastfeeding support systems personalized for this population and their needs; addressing these barriers is essential to promote and initiate breastfeeding among the Hispanic population and, thus, reduce disparities among Hispanic women during their maternity experience.

Faculty Mentor: Hanneke Croxen

How Does Intimate Partner Violence Affect an Individual’s Health During Pregnancy?

By: Jose Sacramento, Gloriya Mehriezgi, Aisha Keinan, Dana Rata & Melanie Lamont

Intimate Partner Violence (IPV) poses a profound challenge, impacting thousands of Canadian women and significantly affecting health outcomes during pregnancy. Our group members conducted a comprehensive literature review to explore the ramifications of IPV on maternal and neonatal health. Utilizing key search terms such as "pregnancy," "intimate partner violence," "domestic violence," and "pregnancy outcomes", we conducted an extensive search in CINAHL and PubMed databases, focusing on peer-reviewed articles published between 2010 and 2023. From this search, eleven studies were selected for our analysis. Our findings reveal that IPV detrimentally influences maternal mental health and heightens the risk of adverse outcomes including preterm birth, antepartum hemorrhage, and low birth weight. Additionally, IPV escalates the likelihood of maternal morbidity and mortality. These outcomes emphasize the necessity of integrating standardized IPV screening and healthcare professional training within prenatal and postnatal care settings. Further research is needed to understand the enduring health impacts of IPV on affected women and their children, suggesting a critical area for future inquiry and intervention.

Faculty Mentor: Hanneke Croxen

Check Your Bias

By: Allyssa Staudinger, Heather Meneses, Branden Leduc, Negegerework Abate, Harmanpreet Kaur & Ajithya Wijeratne

Video Documentary: From Struggle to Strength: Navigating Bias in Addiction and Recovery

Faculty Mentor: Sharon Johnston

Are Virtual Labs Replacements of Physical Labs in Anatomy and Physiology?

By: Kiara Ukrainetz

With the decreased use of Cadavers in anatomy classes across Canadian nursing programs due to strict ethical approvals, lack of donors' programs, lab space, and reduced dissection hours, universities must find alternative methods to deliver practical and realistic learning (Narnaware & Neumeier, 2021). Very few nursing programs across Canada are using the Anatomage Table (AT) as an alternative method of teaching and learning in anatomy and physiology despite its life size, realistic, and interactive way to dissect, explore, and understand the human body (Narnaware & Neumeier, 2021). However, using the AT is limited to classroom teaching and cannot be accessed offsite or outside class hours. In our preliminary qualitative study, virtualized laboratory sessions available to students outside the classroom and the freedom to complete the laboratory sessions on one's schedule have proven effective at improving nursing students' understanding and knowledge of the body. In this study, a Google survey on 15 virtual labs was given to anatomy students in the Fall of 2023. The virtual labs consisted of realistic histology of body tissue and 3D interactive models of body systems. Overall, the majority (74.9%) of students reported that the virtual labs significantly improved their understanding of the body's tissues, and 76.4% of students recommend using virtual labs to future students. The overall response was positive. Virtual labs have proven effective at increasing understanding of the human body and should be included in the anatomy curriculum in the future.

Faculty Mentor: Dr. Raj Narnaware & Melanie Neumeier

Organizational Behaviour, Human Resources Management, and Management

Transformational Leadership and Listening: Do They Listen?

By: Mabel Adesopo

Transformational leadership theory suggests that leaders can inspire commitment toward collective goals by expanding employees’ interests and awareness to align with a larger shared vision, all while demonstrating consideration for individual needs. This type of approach is particularly important when trying to generate commitment to organizational change, where resistance and a lack of buy-in often thwart success. Indeed, a recent meta-analysis by Peng et al. (2021) suggests that transformational leadership is associated with higher levels of commitment to, openness to, and readiness for change, and lower levels of cynicism and

resistance toward change. Like transformational leadership but situated primarily at the dyadic level, listening is also theorized to facilitate cooperation and openness to change while allowing an individual to relax their defenses (Kluger & Itzchakov, 2022). Given these parallels, and the ability for listening to facilitate an awareness of and responsiveness toward individual needs in alignment with the individualized consideration component of transformational leadership, it makes sense to examine whether listening plays a role within transformational leadership. To date, very little is written about listening in its role within transformational leadership. This paper proposes to bridge that gap by undertaking a review of the literature regarding listening and transformational leadership.

Faculty Mentor: Dr. S. Bruce Thomson

Addressing Eating Disorders in the Workplace: Policy, Employee, and Leadership Strategies

By: Joshua Bell

Eating disorders have been a topic of discussion within organizations that managers tend to mute or avoid due to such psychiatric illnesses resulting in stigmatization and deliberate or unconscious hazing in the workplace. This requires the integration of an interdisciplinary approach to mitigate the factors and symptoms that arise from situations where individuals with mental health symptoms, their peers, and their leaders retain moral muteness on the topic of eating disorders or similar topics. We propose that employees, policy, and leaders affect the outcome of how eating disorders are discussed and handled within an organization. We explore how one may have to deal with such a problem (their own disordered eating symptomatology) and/or also deal with such a problem among one or more employees/leaders (other's disordered eating symptomatology). This is then combined with how human resource management-led policies shape or mute the topic of eating disorders and such tendencies within an organization.

Faculty Mentor: Dr. S. Bruce Thomson

Unveiling the Supply Chain Management Skillset Landscape: A Computational Grounded Theory Approach

By: Owen Bennett

The past two decades have seen significant evolution in the field of supply chain management (SCM), transitioning from a focus on physical distribution to an integrated interdisciplinary concept. Today, SCM professionals play a strategic role, leveraging digital skills, data analytics, and global awareness to optimize supply chains. Despite this evolution, human resources in SCM remains under-researched, particularly regarding critical HR activities. The demand for advanced data analytics, machine learning, and technology skills in SCM has grown, leading to concerns over a skills gap for graduates. This study explores career patterns among SCM professionals and the profession's evolution with technological advancements using a computer-assisted computational grounded theory framework. We analyze secondary datasets from SCM job adverts using unsupervised machine learning approaches, focusing on job titles,

descriptions, locations, and salaries. Natural language processing techniques are employed, including sentiment analysis, named entity recognition, and topic modeling. Specifically, Latent Dirichlet Allocation (LDA) analysis is used to uncover hidden topics within the job advert data. The results aim to identify the skills gap for SCM professionals and inform management development and business school curricula.

Faculty Mentors: Dr. Parminder Singh Kang & Dr. Rickard Enstrom

Appropriate Integration of Artificial Intelligence Through Human Resource Management

By: Johnathan Bobinac

The increasing adoption of Artificial Intelligence [AI] in Human Resource [HR] practices present a dynamic landscape that demands in-depth exploration. The rise of AI simultaneously provides organizations with exponential growth opportunities and uncertainty. The benefits of effective AI integration seem boundless, whereas the fallout of a misunderstood application can be critical. Business interest and caution in AI technologies thus come as no surprise. Still, the latter effect is more likely should academic researchers remain ill-prepared to compendiously answer the necessary practical application question of properly integrating these new technologies. Thus, the target of our research investigates the implications of effective and ineffective AI adoption by HR practitioners on the aggregate key performance indicators of employee motivation, engagement, and overall work processes. By adapting Herzberg's two-factor motivation theory to the integration of AI in modern contexts, we aim to uncover how appropriate implementation of AI technologies can influence critical performance indicators, including motivation, engagement, and even the future dynamics of the HR profession. Our findings promote a shift for HR practitioners towards a future entrenched in defining effective augmented human-AI collaborative job enrichment protocols.

Faculty Mentor: Dr. Francoise Cadigan

Religion And Government

By: Syed Taha Bukhari

The paper looks into details about how religion plays a role in the government, from the many laws that relate to religious clothing in the workplace to the fact that Quebec isn't alone in banning religious symbols. France had done the same back in 2004. Religion is the basic building block for the values an individual holds. Governments must recognize religion's influence on decision-making at the individual level. Furthermore, it also looks at the complications between the state and religion. While also looking into Title VII of the Civil Rights Act of 1964.

Faculty Mentor: Dr. S. Bruce Thomson

Teacher's Compensation: A Comparative Study between Merit Pay and Base Pay in Canada

By: Tryston Davies

Compensation is more than a payment plan, and that is what I want my research to show. Compensation systems have impacts on various aspects of a work environment namely, retention, morale, motivation, and turnover. There are two main forms of Compensation payment plans. That of base pay, which is the current system being used for teachers in Canada. It is the initial initial salary or wage paid to an employee. Merit pay is focused on pay for performance. It provides an incentive to perform the tasks a job may require, most effectively.

This research project will dive into the issues in the teaching profession that impact compensation. The focus will be on:

- finding out if teacher turnover is significantly correlated with base-pay compensation,

- and if so, is merit pay a sound alternative to the current compensation system for teachers in Canada?

- What factos lead to teacher dissatisfaction rates, and can they be remedied through compensation systems.

The goal is to be able to determine the aforementioned objectives by comparing and contrasting the current base-pay compensation system in Canada and two other countries that currently use or have tested a merit-pay system to see if the implementation of such a system would significantly impact the teaching effectiveness, turnover rates, and overall satisfaction rates within the teaching ranks.

Faculty Mentor: Dr. S. Bruce Thomson

Rethinking Cognitive Tests for Gender-Equal Hiring

By: Madylin Gillett

Cognitive ability tests display gender biases, particularly in spatial assessments like the mental rotation task (MRT). This paper posits ways to address these biases, such as the use of cognitive tests without the MRT, evaluating only job-related cognitive abilities, and incorporating non-cognitive assessments like structured interviews. Through investigating and proposing these alternative assessment methods, this paper aims to contribute to advancing unbiased hiring practices. By lessening gender disparities, organizations can adhere to legal standards, fostering inclusivity in hiring practices that ultimately benefit them.

Faculty Mentor: Dr. Françoise Cadigan

Immigrant's religion in the workplace

By: Mark Lopez

No abstract available.

Faculty Mentor: Dr. S. Bruce Thomson

Did you vote for me? Leadership and HRM in a Developing Country: The Challenges in the Context of Public Administration / Political Organizations

By: Jade Packard

This research dives into the nature of developing nations and how the journey towards economic stability often hinges on effective utilization of human capital and leadership . Examining success stories like Singapore, South Korea, and Japan reveals common elements: strong leadership providing economic guidance and efficient public service utilization. However, challenges persist, particularly in navigating political landscapes and ensuring effective HRM practices. In one Caribbean country, symbolic political power paradoxically weakens leadership's ability to enact change. Coercive and reward powers are limited, fostering a culture of minimal accountability and motivation among employees. Addressing these issues requires visionary leadership at the highest level and transformational initiatives at middle management, emphasizing performance evaluations, feedback, training, and clear communication. Political influences must be mitigated to promote merit-based promotions and secure employment, fostering trust and motivation. Ultimately, effective HR functions are vital, but without leadership reflecting integrity and compassion, the journey towards economic upliftment remains arduous for developing nations.

Faculty Mentor: Dr. S. Bruce Thomson

Examining Workplace Expectations and Skills Gaps of Prospective Employees

By: Ben Smith & Bani Dang

Micro-credentials have become a significant point of discussion in the employment and education landscape, and many interested actors are considering whether to complete, require, or offer micro-credentials. This paper addresses the views and expectations of workers and employers towards micro-credentials in the context of entry roles for Supply Chain Management. The three-fold purpose of the paper is to: i) present a background of micro-credentials, ii) explore whether and why micro-credentials are an important part of employment preparation and performance in Supply Chain Management, and iii) provide insightful guidance to actors in the micro-credential ecosystem. As an exploratory study with a differentiated but highly relevant body of participants this paper advances awareness and understanding of an idiosyncratic and complex circumstance of the micro-credential conversation.

The presentation also includes personal reflections from the presenters on the Research Assistant experience and benefits and applications to their studies.

Faculty Mentors: Dr. Mike Annett & Dr. Heather McRae

Physical Sciences

Development of Quartz Crystal Microbalance Sensor: Chemistry Practicum with Fourien Inc.

By: Kowsar Abdullahi & Erika Lamen

Nanoscale technology is an emerging field filled with the promise of transformative advancements in the biomedical, chemical, and mechanical fields. As a result, this has caused significant contributions to advancements in sensor development research and improving analytical measurements. Fourien Inc. is a company that focuses on using nanoscale technology to develop innovative and advanced analytical instrumentation and sensors.

As part of our Chemistry Practicum (CHEM 497) internship at Fourien Inc. (January 2024 - April 2024), we delved into improving Quartz Crystal Microbalance (QCM) for nanoscale measurement with a focus on applying thin-layer deposition using polymers, metals, and minerals to advance their analytical measurements further. From the hardware development of the QCM to the rigorous solution preparation process of finding the right consistency for spin coating, the poster presentation will illustrate the effective analytical solutions we used to refine our scientific measurements. Furthermore, we will delve into the research we have found, as well as the different applications of each thin-layer solution during specific measurements.

Throughout the internship, we have refined our research and problem-solving skills, emphasizing effective planning and communication. The journey had its challenges, but overcoming them with a commitment to good laboratory and manufacturing practices underscored the triumphs. In addition to sharing our academic outcomes, the presentation will highlight the overall field experience we have gained in this practicum.

Faculty Mentor: Dr. Samuel Mugo

Designing a Code of Exoplanet Detection Utilizing Transit Photometry

By: Cindy Aung Chen

We propose to design a code capable of detecting the presence of unknown Earth-like exoplanet transits in the light curves of candidate stars within open clusters. The code would be designed to simultaneously flag potential transits in up to thousands of light curves. Transit photometry is an effective method to detect exoplanets, and it is sensitive enough to allow us to identify which exoplanets are Earth-like. The noise from intrinsic star variations will be removed using decoding techniques that work best with each data set. Two photometric algorithms, Box-fitted Least Squares (BLS) and Transit-fitted Least Squares (TLS), will be combined to handle a diverse range of transit shapes while being able to provide accurate transit parameter estimates to characterize the properties of the detected exoplanets. The transit parameters can then be used to determine if the exoplanet is Earth-like. The code will be designed to maximize sensitivity and specificity while being able to be reproduced and used for multiple datasets.

Faculty Mentor: Dr. Stefan Cartledge

TLC-Bioautography for the Detection of Lipase Inhibitors in Plants Invasive to Alberta, Canada

By: Erik Bartley

Invasive species are a global issue requiring costly removal efforts due to their negative ecological and economic effects. When introduced to their new environment, these species adapt using various methods, such as developing new phytochemicals that may have useful therapeutic pharmacological effects, such as pancreatic lipase inhibitors (PLIs). Orlistat is a PLI discovered as a derivative of a natural product. Orlistat is proven effective for the treatment of obesity however, due to potential negative side effects, alternatives should be found. For the discovery of alternative PLIs, we propose to screen the extracts derived from invasive plants using TLC-bioautography. This method consists of separating small quantities of the extract on thin-layer chromatography (TLC) plates using different solvents, followed by a colourimetric detection assay to identify inhibitors. The assay technique uses β-naphthyl myristate as a substrate, which is cleaved to β-naphthol by pancreatic lipase and subsequently detected by a reaction with Fast Blue B salt (FBB). If an inhibitor is present on the developed TLC plates, a white spot will appear in its location, surrounded by purple dye where no inhibition occurred. Potential lipase inhibitors can then be further analyzed and researched as potential obesity treatments or as lead/scaffold molecules for the development of such treatments.

Faculty Mentor: Dr. Tina Bott

Investigating inner speech in organic chemistry students

By: Felicity Bautista

The importance of inner speech is being investigated among organic chemistry students. In addition, to investigate different ways, students use inner speech when solving problems, such as organic reaction mechanisms and manipulation of 3D molecular structures. A multi-interview process is conducted, where students complete a variety of inner speech questionnaires – revised survey (VISQ-R) to identify different ways students utilize inner speech (phase 1) and to gain insight on how often students use inner speech during the process of answering mechanisms through audio recordings (phase 2). Additionally, the results are analyzed using a comparative constant method to see where students struggle in organic chemistry.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Microplastic Extraction, and qualitative analysis using FTIR specctroscopy

By: Sara Benny

This research focus on Microplastic in large water bodies. The Purpose of this research is to observe the distribution and unique signature of different microplastic. The main sample trials is done by developing a method to extract Microplastic from the North Saskatchewan River Sediments and fresh water. Comparative data with microplastic in sea water is also analyzed. Agitation of different water bodies and its effect on microplastic distribution is also observed. Systematic Qualitative analysis is done through 2 main methods: Fluroscence microscopy is

first used to capture the image of microplastic in different light, and then FTIR Spectroscopy will calculate the unique absorbance signature at different wavelengths for each microplastic. This research is done to identify different types of microplastic in the environmental matrix and to create a database for Microplastic identification and distribution in the environment to support future research.

Faculty Mentor: Dr. Samuel Mugo

The Synthesis and Evaluation of Indole Glyoxylamide Analogues as Pancreatic Lipase Inhibitors for Future Medicinal Chemistry Lab Work

By: Thierry Burns & Caleb Odegard

Global adult obesity rates have been on a steep rise for decades, leading to a heightened risk of metabolic and cardiovascular diseases. To date, only one medication, Orlistat, is a proven and effective treatment for individuals suffering from severe disorders, such as diabetes, that can lead to rapid accumulation of fats in the body; however, Orlistat has recently been correlated with increasingly severe side effects that may outweigh the benefits. This research will focus on the synthesis, analysis, and evaluation of several inhibitors relative to Orlistat. To this end, three glyoxylamide derivatives will be synthesized from indole, oxalyl chloride and an aniline derivative. The compounds will then be characterized and evaluated for pancreatic lipase inhibitory activity by monitoring the conversion of 4-nitrophenyl butyrate to 4-nitrophenol spectroscopically. The results are expected to be useful in designing a medical chemistry laboratory course as a relatively simple application of classroom theory and a means to practice numerous laboratory skills and techniques. Furthermore, this research may also provide insight into synthesizing new lipase inhibitors as possible replacements for Orlistat.

Faculty Mentor: Dr. Tina Bott

Determining Antimicrobial Activity of Small Antimicrobial Peptides (WLKRLWKKWRKW) through Synthesis, Purification and Structural Characterization

By: Emily Chatwin

Due to the rise of antibiotic resistance, small antimicrobial peptides have emerged as pivotal components in various biomedical and biotechnological applications. Antibiotic resistance is a worldwide issue affecting human health; if new antibiotics are not developed, bacterial infections could become fatal as our existing treatments are losing effectiveness. People hope that the activity of antimicrobial peptides can provide effective treatment options for infections, particularly those caused by antibiotic-resistant pathogens. Their unique mechanisms of action, such as disrupting microbial cell membranes, may make it more challenging for pathogens to develop resistance. With their versatile functionalities and tailored properties, the goal is to create a 12-16 amino acid chain with a hydrophobicity score between 6-7. The composed small peptide being analyzed is WLKRLWKKWRKW; it will be synthesized using solid-phase peptide synthesis (SPPS) and solution-phase peptide synthesis from the C to the N terminus anchoring the growing peptide chain to a resin and microfilter. Through the course of this project, the goal

is to design an antimicrobial peptide that is alpha-helical in structure. The proposed peptide WLKRLWKKWRKW will be created using organic synthesis, particularly FMOC-solid phase chemistry. Once synthesized, the peptide was purified and analyzed using HPLC and NMR spectroscopy. Active peptides can exhibit antimicrobial activity, killing or inhibiting the disease-causing microbes, while inactive peptides may include structural or antimicrobial precursor functions, but they lack direct biological activity. The proposed peptide's activity is currently unknown, and further investigation is needed to determine its efficacy and potential as an antimicrobial agent. Antimicrobial peptides serve as promising candidates for drug discovery and development due to their high specificity and low toxicity. They are today's development in determining immune responses in biological research.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Development of Antimicrobial alpha helical peptide

By: Violet Franklin

The global increase in antibiotic resistance is a significant and growing concern with widespread implication in animal agriculture, public health and pharmaceuticals. To combat the rise of antibiotic resistance, there is a need to rapidly develop new treatments for bacterial infections. One treatment being explored is the development of amphipathic, alpha helical, antimicrobial peptides(AMPs). AMPs disrupt the membrane, leading to cell leakage and ultimately cell death, thereby combating antibacterial resistance. A short antimicrobial peptide was designed using guiding principles of charge, hydrophobicity and predicted secondary structure. The novel peptide was synthesized using solid phase peptide synthesis, cleaved by TFA cleavage and purified using high performance liquid chromatography. The peptide was characterized by NMR spectroscopy. This experiment will help further research on the guidelines of how to design a short antimicrobial peptide.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Biodegradation of oils in water/sediment and treatment of tailings waste: Chemistry Practicum with CanmetENERGY

By: Olivia Fryk & Robyn Woodrow

Oil plays a crucial role in Canada's energy sector, providing a substantial portion of the country's needs and contributing significantly to the economy. However, transportation, exploration, and production of oil comes with risk of spillage. Historically, these spills have been treated with traditional invasive and costly methods such as hand crews, additives or absorbents (Zengel et al., 2015; Hoang et al., 2021) As an alternative, bioremediation is an upcoming greener biotechnology that uses natural mechanisms and processes done by various biological agents such as clays, bacteria, or yeast to clean contaminated areas (Shukla et al., 2010). At CanmetENERGY, as part of the Chemistry Internship Practicum (CHEM 497), from Jan 2023-April 2023 we assisted in two research projects that explore this method using indigenous microbial communities. The first research project is studying the effect of deposited bitumen and asphalting on sedimentary microbial activity, particularly, nitrifying bacteria. The second

research project is studying the effect of biosurfactants on waste tailings and how tailings affect biosurfactant surface activity. Tasks included conducting water and sediment sampling, sample preparation (e.g., filtration) for DNA extraction, surface and interfacial tension measurement of biosurfactants, microbial culturing, sample analysis (e.g. total nitrogen measurement, live dead cell viability test, and basic data analysis. Overall, professional development in lab work and cooperation with industrial partners fulfilled our aspiration of contributing to the upcoming technology of bioremediation.

Hoang A. T., Nguyen X. P., Duong X. Q., Huynh T T., (2021) Sorbent-based devices for the removal of spilled oil from water: a review, Environmental Science and Pollution research, 28 (23) 28876-28910 DOI:http://doi.org/10.1007/s11356-021-13775-z

Shukla K.P., Singh N. K., Sharma S., (2010) Bioremediation: Developments, Current practices and perspectives, Genetics Engineering and Biotechnology Journal, 2010(3)

Zengel S., Bernik B. M., Rutherford N., Nixon Z., Michel J., Chin W., (2015) Heavily oiled salt marsh following the deepwater horizon oil spill, Ecological Comparisons of Shoreline Cleanup Treatment and Recovery, PLOS ONE, 10(7), 4-27 DOI:https://doi.org/10.1371/journal.pone.0132324

Faculty Mentor: Dr. Samuel Mugo

Investigation and Analysis of Water Chemistry in Oil Spills and Froth Tailing Treatments

By: Sebastian Gomez

Bitumen is key in oil and gas production. However, extraction of bitumen results in production of leftover materials such as ground rock, metals, chemical, organic materials, and effluent. These byproducts are all called tailings. As part of the Chemistry Internship Practicum (CHEM 497), I am interning at CanmetENERGY, who are studying the impacts tailings and biofuel spills have on water chemistry. At Canmet, we studied 3 scenarios for different substrate capping's. One scenario looked at tailings (specifically froth treatment tailings or F.T.T.) capped with peat, another looked at F.T.T. capped with quartz sand, and the last looked at Quartz sand capped with peat as a control. All scenarios had replicates for a total of 6 columns made. Weekly measurements were done for all samples, looking at conductivity, pH, ORP, DO, temperature, and presence of major ions. Monthly measurements were also done for all samples. This looked at the presence of trace metals, DNA, and TOC. Samples required filtering in order to prepare them for use in equipment such as ICP, IC, UV, and TOC. From this, I learned to prepare samples using 0.45 and 0.22 µm filters. I also aided in the development of tanks for biofuel spill research. I helped in constructing a special acrylic tank and building peristaltic pumps. Research has yet to commence, but 3 out of the 4 tanks are ready. This project would then be looking at the presence of hydrocarbons, microtoxins, microbials, and DO using simulated spills.

Faculty Mentor: Dr. Samuel Mugo

Cataclysmic Variable Mass Accretion and Angular Momentum Loss: A Review

By: Joshua Hardy

Cataclysmic variables (CVs) are important to our understanding of binary evolution. In order to fully comprehend their importance, one must first gain a complete cognizance of cataclysmic variables themselves. The physical properties of CVs, such as orbital period and masses, are discussed, along with their limits. CVs have a few different sources of variability, consisting of dwarf novae, classical novae, flickering, and others. These qualities are what classify compact binary systems are variable stars. CV formation is also explained, as well as the consequent evolution, including the existence of the 2-3hr period gap. Some issues arise with the standard model of CV evolution when compared with empirical data. There are several methods to improve modelled results, including consequential angular momentum loss (CAML) and empirical consequential angular momentum loss (eCAML). eCAML is the most successful method thus far in modelling CV evolution and populations. It significantly improves on the standard model and even far surpasses the advanced success yielded by the application of CAML. The Modules for Experiments in Stellar Astrophysics (MESA) software can effectively be used to model CVs along various versions of their evolutionary track.

Faculty Mentor: Dr. Stefan Cartledge

Geology as it Pertains to the Secondary Education Curriculum

By: Joshua Hardy

Geology is arguably one of the most vital fields of science contributing to humankind's understanding of the planet and the solar system. Unfortunately, the junior high and high school curricula only briefly mention this topic. In an advancing world, where earth and planetary sciences are becoming more and more prevalent to daily life, it is expected that young people may consider this as a career early in their lives. However, with a lack of geology-based curriculum, students have little information when considering their futures. Students have the opportunity to engage in learning about geology as they gain hands-on experience with geological methods and the scientific method. The application of rounded and engaging teaching methods allows for students to discover passions in education that may not have otherwise been considered. Various methods can be considered when applying this technique to a large range of students who vary in educational background, learning styles, and enthusiasm levels, yet the goal remains fixed; engage youth in learning, and more specifically, engage youth in exploring vast topics that may initially seem mundane.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Construction and testing of a radiation detector using plastic organic scintillators and silicon photomultipliers

By: Kyle Kuhling

Climate change is one of the most significant issues facing humanity in the 21st century that was solved, in part, through the commercialization of nuclear power. However, such technology

has not been fully realized, largely due to a ‘disproportionate fear’ of radiation from the public. In response, more information on radiation dosage can be provided through the construction of a radiation detector by coupling silicon photomultipliers to plastic organic scintillators, which is presented, along with such a detector’s applications in four experiments. The first experiment determined the detector's average efficiency to be 30.0 ± 0.1%. The second experiment found the thickness of a plastic Sr-90 disk source to have an experimental value of 0.500 ± 0.002cm. Furthermore, the count rate of two Sr-90 disk sources as a function of calculated disk thickness was plotted, highlighting two key areas of disk thickness. The third experiment investigated the differences in count rates between two Sr-90 and Co-60 disk sources and found that the values did not agree within error to each other but did to the manufacturer’s stated ±15% uncertainty. Finally, in the fourth experiment, materials of increasing area density were layered on top of an Sr-90 and Co-60 disk source, producing another expected exponential decrease in count rate, and an experimental linear attenuation coefficient for the Co-60 disk source shielded by lead was determined of 0.90 ± 0.04cm-1. It was concluded that the detector is functional in radiation detection but that more research is required to increase its accuracy and precision.

Faculty Mentor: Dr. Logan Sibley

Development of a Novel Antimicrobial Peptide

By: Erika Lamen

A current problem society faces is that traditional antibiotics no longer work effectively because pathogens develop antibiotic resistance due to overexposure to antibiotics, resulting in difficulty in treating bacterial infections. Much research is being done on antimicrobial peptides (AMPs), which are being proposed as a possible alternative to antibiotics because they have broad-spectrum activity against antibiotic-resistant bacteria. This research project focuses on designing and developing a novel antimicrobial peptide with antimicrobial activity. In this study, a proposed 12-residue amphipathic α-helical antimicrobial peptide (WLRKVWQKWNEF) was synthesized using the Solid Phase Peptide Synthesis (SPPS). After synthesis, the AMP was purified using Reverse-Phase High-Pressure Liquid Chromatography (RP-HPLC) to separate unwanted impurities from the peptide. Structural characterization using nuclear magnetic (NMR) spectroscopy provided insights into the secondary structure and the purity and overall molecular structure of the AMP. The findings of this project will help provide more insight into the efficacy of AMPs and their potential as an alternative to traditional antibiotics.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Activated Carbon CO2 Adsorbents From Waste Petroleum Coke

By: Gage Leahey

The Alberta Oil Sands are responsible for a multi-billion dollar oil refining industry that accounts for over 20% of Alberta’s economy; and within the Oil refining industry, a new sector of rapidly developing technology is emerging: the Carbon Capture Industry.1 CO2 capture technologies constitute a worldwide half-billion dollar industry, which is projected to exceed 2 Billion USD in 2030.2 CanmetENERGY is a Federal Government Organization that is focused on developing clean and green energy solutions for Canadian energy demands. For the Chemistry Internship

Practicum (CHEM 497), I interned at CanmetENERGY Devon from January 2024-April 2024. During my time at CanmetENERGY I have been working on a team that is researching and developing a technique to convert waste petroleum coke (PC) from the bitumen refining process into an activated carbon CO2 adsorbent for use in refinery flue gas CO2 scrubbing systems. Many different techniques to create a suitable CO2 adsorbent are being researched, such as metal hydroxide activation and amine-based surface functionalization. A novel method of high-pressure KOH-PC wet mixing is also being investigated.

Throughout my experience in CHEM 497 I have not only improved my chemistry skills but also my literature review skills, my understanding of the scientific process and what it takes to carry out research. CHEM 497 has helped me develop my skills and knowledge as a scientist, my confidence in my lab skills and scientific thinking, and has brought me closer to the world of professional science.

Faculty Mentor: Dr. Samuel Mugo

Development and Quality Control of Antimicrobial Bandages: Chemistry Practicum with Exciton Technologies Inc.

By: Addy Lennon

The looming threat of antibiotic-resistant bacteria, superbugs, and biofilm is of growing concern in the medical community, which has caused new methods to combat infection to arise. Exciton Technologies Inc. utilizes high oxidation state silver-coated bandages, which have a significantly lower risk of developing resistance due to the mechanism of action proceeding along multiple pathways instead of only one. As part of the Chemistry Internship Practicum (CHEM 497), I interned at Exciton from Jan 2024 to April 2024. Throughout my internship, I have learned several skills I will be able to apply to future career opportunities. What I believe to be the most important is the exposure I have received from working in a cGMP lab environment. For example, I have learned good documentation practices and how to read and understand SOPs, which are invaluable tools to have while in university. Along with the professional skills I have sharpened, I was also able to fine-tune many technical lab skills, such as using an auto titrator and moisture analyzer, pipetting skills, and general lab maintenance and chemical stocking. Being a lab analyst intern has allowed me to observe and ask professionals in the quality control field questions, something I had not been exposed to before this term. I have been fortunate enough to have received an offer to pursue employment for the spring and summer.

Faculty Mentor: Dr. Samuel Mugo

Exploring Weed Extracts for Beta-Glucosidase Inhibitors: Screening Secondary Metabolites through Soxhlet Extraction and TLC Bioautography

By: Melody Mahmoodi

Plants have long been utilized for their medicinal properties. However, the therapeutic potential of common weed species is often disregarded. Due to their abundance and adaptability to different environments, these plants tend to grow everywhere, including locations where they are unwanted such as the beloved ornamental lawn; this leads to weeds being viewed as a

nuisance rather than something that can be utilized for discovery. Within this study, the chemical composition and potential therapeutic properties of various weed species found in Alberta are explored specifically for beta-glucosidase inhibition. The plants were air-dried and ground, then sequentially subjected to Soxhlet extraction using methanol, ethyl acetate, and hexane solvents. Extracts were screened using bioautography to detect beta-glucosidase inhibition. Bioautography combines thin-layer chromatography (TLC) with a colorimetric enzymatic assay that reveals enzymatic activity. Following the separation of potential compounds, the plate is allowed to dry and then sprayed with a substrate (6-Bromo-2napthyl- β -D – glucopyranoside) and fast blue B solution; then subsequently sprayed with beta-glucosidase, the plate is then incubated at 37°C for 10-20 mins and observed for inhibition presented as a colorless spot. The discovery of novel biochemicals that serve as beta-glucosidase inhibitors can pave the way for the development towards treating various diseases associated with beta-glucosidase activity, including diabetes, HIV (Human Immunodeficiency Virus), cancers, and lysosomal storage disorders. Inhibition was clearly detected in the sow thistle hexane extracts with the presence of three different compounds, the other plants with suspected inhibition include, but are not limited to woolly burdock, purple loosestrife, and Japanese knotweed, however, further testing would need to be done as the inhibition remains unclear

Faculty Mentor: Dr. Tina Bott

Process Flow Control and Analysis

By: Zafar Mamadaliev

Process flow control allows scientists to sequence and track the data that is being generated by pumps and other analytical tools. This project uses Arduino boards that are able to read inputs coming from the thermocouple, which tells the temperature of a reaction, and the pump, which gives the flow rate. The Arduino board will back feed the data to tell the computer what is happening with the chemical reaction. The goal of this project is to automate a 3000 L reactor that was built by our research lab. Some fertilizer types need to always stay moist to be activated. In order to do that, somebody needs to be onsite to water the fertilizer. By automating the pumps, the reactor can be turned on and off from anywhere on the planet, and all the information that is needed about the fertilizer, such as the temperature, pH, ion concentration and flow rate, will be relayed back to the main computer through the Arduino board. Once this information is transmitted, the research team can analyze the data and change the conditions of the system remotely.

Faculty Mentor: Dr. Roland Lee

Design, Synthesis, and Evaluation of a Positively Charged Tryptophan Rich Antimicrobial Peptide

By: Caleb Odegard

Bacterial antibiotic resistance presents a pressing global health concern, with the emergence of increasingly resistant strains posing significant challenges to conventional treatment modalities. Limited production of new antibiotics due to high costs and development hurdles underscores

the urgent need for alternative antimicrobial strategies. Antimicrobial peptides (AMPs) have garnered attention as potential candidates for combating bacterial infections, offering a promising avenue for therapeutic intervention. Here, we report on designing, synthesizing, and characterizing a novel AMP with potential antimicrobial activity against pathogenic bacteria.

The peptide was synthesized using standard solid-phase peptide synthesis (SPPS) methodologies and purified via high-performance liquid chromatography (HPLC). Characterization of the peptide's sequence and structure was achieved through circular dichroism (CD) spectroscopy and nuclear magnetic resonance (NMR) techniques, including Nuclear Overhauser Effect Spectroscopy (NOESY) and Total Correlation Spectroscopy (TOCSY). Antimicrobial efficacy will be assessed using a disk diffusion assay against E. coli.

The results demonstrate successful synthesis of the desired peptide via SPPS, with purification achieved through HPLC to remove residual synthesis by-products. NMR data confirmed the analysis of the peptide sequence, and CD spectroscopy suggested a potential tertiary helical structure.

The findings underscore the importance of exploring alternative antimicrobial strategies in the face of rising bacterial antibiotic resistance. The synthesized peptide shows promise as a potential antimicrobial agent, although further research is warranted to elucidate its full spectrum of antimicrobial properties and assess potential cytotoxic effects. These findings contribute to the ongoing efforts to develop effective antimicrobial therapies amidst the escalating challenge of antibiotic resistance.

Faculty Mentor: Dr. Kaitlyn Towle-Straub

Germanium Adsorption to Banded Iron Formation Precursor Minerals

By: Cedrick Ramos

Banded Iron Formation (BIF) is a sedimentary rock consisting of alternate layers of iron- and silica-rich minerals (i.e. hematite and chert) deposited 3.90 to 1.85 billion years ago during the Precambrian eon. The deposition of BIF is caused by the precipitation of these minerals in seawater, thus have been used as a proxy for the chemical composition of the ancient seawater. However, the cause of iron and silica-rich layering in BIFs is still heavily debated. The layering of BIF is thought to be either due to distinct mineral precipitation from hydrothermal activity (iron-rich) and continental runoff (silica-rich), or Fe-Si gel precipitating from the water column and later separated through the post-depositional process. This study investigated the two-source mechanism using the Ge/Si ratio in inorganic sorption by conducting adsorption experiments of Ge to BIF precursor minerals (Ferrihydrite, Si-ferrihydrite, and Silica gel). The equilibrium isotherm experiment used varying initial concentrations of germanium (Ge) (30, 60, 100, and 130 ppm) taken to equilibrium at pH 4, 6, and 8 with 10 g/L of the precursor material to determine their adsorption capacity and efficiency. Inductively coupled plasma optical emission spectroscopy (ICP-OES) was employed to measure Ge concentration changes in the solution to quantify Ge adsorbed. Ferrihydrite sediments had a higher adsorption capacity of Ge than Si-ferrihydrite and silica gel. Silica gel adsorbed less than 20% of Ge, while Si-rich ferrihydrite and ferrihydrite sediment approximately adsorbed 50% and >90%, respectively.

Faculty Mentor: Dr. Janice Kenney

No title available.

By: Alexia Tran

Intending to enhance the recovery percentage of Lithium from oilfield and geothermal brines, Sterling Chemicals Ltd, a chemical company specializing in the production of specialty chemicals for the energy and power industries, maintains a laboratory in Edmonton at the Nanotechnology Research Center, University of Alberta. My internship at Sterling Chemicals Ltd took place as part of the Chemistry Internship Practicum (CHEM 497) from January 2024 to April 2024. Being a part of the Chemistry Practicum as an intern for Sterling Chemicals Ltd, we explored different procedures and techniques for improving Direct Lithium Extraction (DLE). The experimental investigation involves creating an absorbent for conducting DLE and treating samples to assess the process's efficiency. Sample treatment includes wet chemistry, supported by titration. The absorbent is developed through ionic exchange and filtration for extraction, followed by analysis using Inductively Coupled Plasma Optical Emission Spectroscopy (ICPOES) and FWA (Full Water Analysis). Throughout my internship, I have refined my research and problem-solving skills and grown and emphasized my communication, teamwork, time management, and practical planning skills while prioritizing my independent work. My journey at Sterling Chemicals Ltd has allowed me to grow independently and expand my knowledge in the Chemistry world. This presentation will highlight the overall experience gained in the practicum and the academic learning outcomes.

Faculty Mentor: Dr. Samuel Mugo

Techno-Economic Analysis of Biogas Generation: A Research Study for Biodigester

By: Alexia Tran

The independent research I am doing for Chemistry 498 focuses on conducting a comprehensive techno-economic analysis of biogas generation, explicitly examining the technical viability of constructing a biodigester in rural Alberta, Canada. The study emphasizes establishing a robust technological foundation before delving into subsequent economic and environmental impact assessments. Without a thorough understanding of the technical aspects, any attempts to gauge economic viability and broader societal impacts would be akin to putting the metaphoric cart before the horse. The investigation encompasses key elements such as feedstock selection, anaerobic digestion system efficiency, gas purification and upgrading technologies, digestate management, and the implementation of monitoring and control systems. The primary objective is to assess the feasibility and scalability of biogas production in rural Alberta, considering factors like the availability of organic materials, local climate conditions, and potential socio-economic benefits for the community. Through rigorous analysis, the research aims to provide insights into the technological intricacies of implementing a biodigester in the region. By evaluating various technical parameters, the study seeks to inform stakeholders about biogas generation's potential challenges and opportunities in rural settings. Furthermore, it underscores the significance of aligning technological advancements with economic viability and environmental sustainability to integrate biogas projects successfully.

Throughout my Advanced Independent study, I have refined my research and problem-solving skills, and grown, and emphasized my time management and practical planning skills while prioritizing

Faculty Mentor: Dr. Roland Lee

The Quantification of Microplastics in Industrial and Residential Stormwater Ponds in Edmonton, Alberta.

By: Mimi Vignjevic

Anthropogenic activities generate large quantities of microplastics (MPs), which are particles less than 5 mm in diameter. Stormwater ponds collect runoff and snowmelt, while providing habitats for urban aquatic species, to improve the quality of water returning to rivers and creeks. MPs can enter stormwater ponds through runoff from urban areas and accumulate. However, the effect MPs pose on stormwater ponds is largely unknown. This project analyzed samples of stormwater ponds from industrial and residential areas in Edmonton, Alberta, to understand how MPs vary in morphology, chemical composition, and size as a function of land use. MPs were isolated from stormwater pond samples and separated into >125 µm and <125 µm fractions. Nile Red was used to fluorescently stain MPs, and Raman spectroscopy was used to identify the chemical composition of selected MPs. Fibers were expected to be the predominant morph, followed by film, fragments, and spheres. Polyethylene was expected to be the most common polymer type, followed by polypropylene and polyethylene terephthalate. Polyethylene fibers are expected to be the most abundant, as these MPs make up most plastic products. Isolated MPs were expected to be primarily greater than 125 µm in size. Results obtained will illustrate how different land use areas and activities contribute to urban MPs pollution. Furthermore, data obtained from the quantification of MPs from stormwater ponds positively impacts the greater scientific world, as a comprehensive understanding of MPs behaviour, migration, and fate can be determined and used to regulate plastic pollution.

Faculty Mentor: Dr. Matthew Ross

Effect of Electrodeposition Parameters on Properties and Catalytic Activity of FeCoNiCuCr High-Entropy Alloy for Water Splitting

By: Ethan Walbaum

With energy demand continuing to rise and the effect of fossil fuel consumption being ever so prominent, a renewable greener solution is needed. One of these solutions is green hydrogen which is produced through water splitting 1 . Recently, the development of high entropy alloys (HEAs) as electrocatalysts have emerged as promising avenues; they can act as either the anode or cathode in catalysis reactions and can be a replacement for the precious metals that are currently being used, such as Platinum and Iridium 1 . These HEAs are still relatively new to the scientific community and their electrochemical, corrosive, magnetic and mechanical properties have little research done on them 1 . As part of the chemistry internship practicum from Jan 2024-April 2024, I interned at CanMet ENERGY, Devon. While at CanMetEnergy I practiced electrochemistry and used techniques such as voltammetry, to build an understanding of the underlying properties of low cost transition metals. These practices

along with an initial literature review led me to find a suitable HEA made of FeCoNiCuCr. These metals were electrodeposited onto a carbon cloth to create the electrocatalyst. The goal of this research and experimentation was to investigate the impact of the electrochemical synthesis temperature on the composition, morphology and water splitting performance of the proposed HEA aiming to contribute to the cost-efficiency and scalability of green hydrogen production.

1 Shun-Qin Chang, Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Shih-Yuan Lu, Pulse electrodeposited FeCoNiMnW high entropy alloys as efficient and stable bifunctional electrocatalysts for acidic water splitting, Chemical Engineering Journal, 446, 5, 2022.

Faculty Mentor: Dr. Samuel Mugo

Flow CMF Production

By: Kim Ye

Chloromethyl furfural (CMF) is a biomass platform molecule derived from carbohydrates. It can be produced directly from raw biomass under mild conditions. CMF has a higher yield and is more stable, and it can be used to convert into a new energy source or feedstock. Also, it has been widely used for biorefining and biomass conversion. To produce CMF, some waste lignocellulosic biomass is used as the raw material. CMF can be converted into other useful materials, which is very helpful to the environment and can reduce the stress of waste. In this experiment, cellulose will react with the reagent concentrated hydrochloric acid (HCl) and solvent 1,2-dichloroethane (DCE). And added aluminum chloride (AlCl3) and toluene into the samples for the Friedel Crafts reaction to occur. The samples will run under gas chromatography to analyze whether CMF is in the product. Also, by comparing the experiment between batch samples and flow process samples, this experiment revealed that using flow process to produce CMF can have a higher yield, more efficient, and can save more on time and energy.

Faculty Mentor: Dr. Roland Lee

Psychology

Micro-Celebrities Affiliation in Social Media

By: Manar Al Ghamdi

Social media has become a widespread activity that anyone can partake in. Micro-celebrities, a term used to describe individuals who have gained a significant following on social media platforms, have emerged due to the accessibility of these platforms. They have a platform to share their opinions, which may influence their followers. This influence may extend to political matters, in which micro-celebrities occasionally engage in political discussions and express support for particular political ideologies, thereby shaping their followers' opinions and political discourse. Therefore, understanding the dynamic between micro-celebrities and their followers can provide insight into how these bonds are formed and how political ideologies may be influenced.

We propose that the factors predicting the formation of bonds with pseudo-political micro-celebrities include shared interests, personalities, alignment of political ideologies, the charisma and relatability of the micro-celebrity, and the level of engagement and interaction between the micro-celebrity and their followers. Further, the perceived authenticity and credibility of the micro-celebrity may also play a role. Finally, ideological personality variables (e.g. Social Dominance Orientation) may make some people particularly likely to form these bonds. To assess these factors, we will conduct a correlation study. Participants will be asked to select a micro-celebrity they follow on social media and then respond to standardized measures assessing ideological alignment, behavior pattern, and personality traits.

Faculty Mentor: Dr. Craig Blatz

How Narcissism Moderates the Relationship between Stereotype Threats and Performance Outcomes

By: Anika Anderson

Grandiose narcissism is a personality trait accompanied by grandiosity, pursuit of status, and a desire to self-enhance. The current study aims to investigate how certain ego threats (i.e., gender stereotype threats) affect the performance of narcissists (vs. non-narcissists) on a visual search task. To do so, female participants will read an article about gendered language (e.g., “girlboss”), which will act as a stereotype threat by highlighting the belief that men are seen as more competent leaders than women. After reading the article, the individuals will perform a word search containing both agentic and communal words. We predict that grandiose narcissists will find more agentic terms to the extent that the stereotype threat activates thoughts related to their enhanced agentic self-concept. Thus, the current study will further analyze how narcissism interacts with stereotyping and whether such a trait determines performance outcomes.

Faculty Mentor: Dr. Miranda Giacomin

The Evaluation of PAWSS Program at MacEwan University

By: Payden Bialowas & Abby Oloriza

This Poster focuses on animal-assisted wellness provided by the Pet Assisting With Student Success (PAWSS) at MacEwan University. Our Research is focused on approaching students who have shown an interest in the PAWSS program and desire to make it part of their student routine to visit the cats or dogs, even if they are beginning with the program and want to know more. To conduct this study, we are distributing online surveys and hosting periodical focus group interviews where we inquire about the student personal experience with the program and any noticeable impacts it has had on their everyday life. To further our reach, we printed survey cards with a QR code that allows students to access and complete our survey anonymously, and if they are interested in further follow-up, the same questions are asked periodically in an in-person interview-style focus group. The focus group consents for us to receive anonymous detailed information and stories about the student experience with PAWSS and, furthermore, the impact on student stress and mental health. We have found it immensely rewarding to see the

positive effects the animals have had on stress in the university realm and the worthwhile pet-human connection that continues to grow and spread throughout MacEwan University.

Faculty Mentor: Dr. Anna Rissanen

Further Evidence in Support of Psychological Flexibility as a Model of Eudaimonic Activity

By: Mateo Brnada

Recent research demonstrated that associations between psychological flexibility and subjective well-being are mediated by the satisfaction of psychological needs, in line with conceiving psychological flexibility as a model of eudaimonic activity. The current study (N = 289 undergraduates) tested the hypothesis that such relationships will persist when controlling for alternative operationalizations of eudaimonic activity. Results showed that need satisfaction mediated associations between Psy-Flex scores and both positive affect and life satisfaction scores when controlling for scores on the Flourishing Scale or Questionnaire for Eudaimonic Well-Being. Similar findings emerged in a second study when controlling for scores on the Multidimensional Existential Meaning Scale. We discuss psychological flexibility in relation to the Eudaimonic Activity Model and Self-Determination Theory.

Faculty Mentor: Dr. Andrew Howell

Do narcissists use different manipulation strategies with their romantic partner in public vs. private settings?

By: Jenn Crebas

Narcissistic individuals have a strong desire to acquire status, but may differ in the strategies used to attain status in their romantic relationships. Moreover, these strategies may differ when narcissists are with their partners in public vs. private settings. Individuals high (vs. low) in admiration enhance their self-view through validation and praise, whereas individuals high (vs. low) in rivalry enhance their self-view through the derogation of others. Here, we explored how narcissists attain status in their romantic relationships through different strategies (Study 1; N=268) and behaviours (Study 2; N=233) in public vs. private settings. To do so, participants completed scales measuring their narcissistic admiration/rivalry and their use of prestige and dominance-based strategies (Study 1) or cost-inflicting or benefit provisioning behaviours (Study 2) towards their romantic partners. We found that those higher in admiration used both dominance and prestige-based strategies and reported more benefit-provisioning behaviours toward their partner in private, but not in public. Those higher in rivalry tend to use more dominance-based strategies and cost-inflicting behaviours, even in public. Thus, the strategies and behaviours used to maintain status within romantic relationships change for those high in admiration when they are alone with their partner and are no longer around others to seek social admiration. Due to the desire for status outweighing the need for social acceptance, those higher in rivalry tend to use more manipulative strategies and behaviours with their partner, even in the presence of others.

Faculty Mentor: Dr. Miranda Giacomin

Unraveling The Mystery: Personality Traits and The Pseudoscience Puzzle

By: DJ Crossland

The prevalence of misinformation on social media and other digital platforms poses significant challenges in discerning truth from falsehood, raising concerns about its detrimental effects on individuals and society. Previous research has linked personality traits to susceptibility to misinformation, with conscientious individuals being better at spotting it, while those with traits like narcissism, manipulation, or callousness are more prone to believing in conspiracy theories. Building on this, our study aims to explore how selfishness influences belief in pseudoscientific claims. We hypothesize that individuals scoring higher on measures of selfishness are more inclined to endorse pseudoscientific claims promising personal benefits, such as miracle cures or tactics to manipulate others. Understanding the susceptibility to false information is crucial in addressing this issue and can help us fight against the spread of false information.

Faculty Mentor: Dr. Rodney Schmaltz

No Pride in Control: Queer Experiences of Coercive Control within Relationships

By: Dakota Dickinson

Experiences of intimate partner violence (IPV) disproportionately affect individuals who identify as members of the queer community. Research has shown that bisexual women, in particular, are at high risk of experiencing IPV and that they minimize experiences in relation to coercive control (e.g., isolation, humiliation, domination, exploitation). Given the diversity of experiences within intimate partner relationships, relatively little is known about how coercive control is recognized and identified across different relationships and whether these behaviours manifest in distinct ways for particular groups. Further, it is unclear whether sexual minorities fail to report coercive control due to challenges in recognizing these behaviours, recognizing them but dismissing them, or if existing coercive control measures do not adequately capture their experiences. The current study was designed to address these shortcomings by exploring the lived experiences of individuals across sexual identities, with a focus on experiential comparisons within the queer community. The proposed research involves evaluation of participants' experiences and beliefs about coercive control across several standardized measures, followed by exposure to one of two educational conditions (general information on CC, LGBTQ+ specific information on CC). Participants will then complete the same post-test measures to assess change scores in their ratings of both experience and beliefs in relation to coercive control. We anticipate that participants will endorse more behaviours associated with CC overall following educational exposure, and that this effect may be amplified for LGBTQ+ persons. This study has important implications for promoting better awareness of coercive control behaviours within the queer community.

Faculty Mentors: Dr. Kristine Peace & Dr. Laura Offrey

Locking Eyes, Unlocking Memory: Exploring how eye contact enhances memory via arousal

By: Garth Dyer

Mood-congruent memory bias, the tendency to remember information consistent with one's current affective state, has been extensively studied in a variety of contexts. Many factors influence mood, including eye-contact and language choice. While research has established that direct eye-gaze is associated with positive affect, the impact of this on mood-congruent memory bias is underexplored. This study aims to investigate the interaction between direct eye-contact, affective state, and memory, by having participants engage in a word recall task under different eye-contact conditions. Words presented in the study for recall will be selected from the Affective Norms for English Words, a validated word list that rates common English words on dimensions of emotional affect. We hypothesize that participants who engage in a word recall task with direct eye contact will exhibit enhanced memory recall for words that elicit emotions congruent with the affective response induced by eye contact itself. Specifically, we predict that words associated with positive emotions, which are typically elicited by direct eye contact, will be remembered more accurately than words associated with neutral or negative emotions.

Faculty Mentor: Dr. Michelle Jarick

Searching in shadows: The impact of cognitive load

By: Mady Gillett

Cognitive overload, which is when too many demands are placed on our working memory, negatively impacts learning. Research suggests that when navigational aids, such as Google Maps, present too many landmarks on the screen at once, it leads to less efficient navigation. Furthermore, too many stimuli in an environment, such as several people in a space, interfere with learning about the location. Research has suspected that limiting what an individual can see at once (by decreasing field of view) can make it harder to learn your surroundings because it puts more strain on your working memory. This study combines existing research and explores cognitive load in a 3D game environment. Participants will navigate a single-floor house at night using a flashlight. Participants are given limited visibility based on flashlight beam angles (10°, 30°, 60°) and two additional conditions: A home with high object density and a home with low object density. Participants will be randomly assigned to different conditions and will be tasked with finding several non-location-specific items, such as a book or a cell phone. The study will assess participants' performance and spatial learning through completion time, accuracy, and ability to re-draw the space they navigated. Additionally, participants will fill out self-report measures of their perceived cognitive load for the task. The findings of this research can provide insights into how field of view and object density impact cognitive load in virtual environments, benefit game design, and add to the literature on how cognitive load affects spatial learning.

Faculty Mentor: Dr. Eric Legge

Assessing Bias: The Ontario Domestic Assault Risk Assessment Tool and Indigenous Offenders

By: Britni Gorman

Intimate partner violence (IPV) is a prevalent issue in society and the number of calls to police are much too frequent to address all of them equally, which poses unique challenges for police. When the goal is to prevent further incidents of IPV, it may be important to ensure that cases are prioritized for effective interventions while also mitigating further harm. One approach is to assess the risk relevant to IPV in order to ensure that any programming, treatment, or supervision for an offender adheres to the principles rooted in the Risk-Need-Responsivity model. Due to the overrepresentation of Indigenous offenders in the criminal justice system, it is imperative to assess whether existing risk assessment tools are culturally sensitive and applicable in diverse cultural contexts. As such, the present study intends to examine 1) the predictive accuracy of the Ontario Domestic Assault Risk Assessment (ODARA) tool for both Indigenous and Non-Indigenous perpetrators of IPV, 2) whether the ODARA works equally well for Indigenous perpetrators as it does for non-Indigenous perpetrators when predicting IPV risk, and 3) potential differences in the prevalence of criminogenic needs between the two groups. It is hypothesized that the ODARA will predict for Indigenous and Non-Indigenous IPV perpetrators but not as accurately for Indigenous perpetrators. Consistent with previous literature, it is also hypothesized that the prevalence of criminogenic needs will differ between Indigenous and Non-Indigenous perpetrators, except for procriminal attitudes and poor use of leisure/recreation time risk factors, which is expected to not differ (Gutierrez et al., 2016). Potential implications of this study include bridging the gap and contributing to the currently limited literature on culturally sensitive IPV risk assessment tools for Indigenous offenders.

Faculty Mentor: Dr. Sandy Jung

Assessing Allegations: Victim Credibility and Memories of Intimate Partner Violence

By: Janet Guenter

This study concerns how allegations of intimate partner violence (IPV) are reported, including distinct or repetitive events, and how well these are retained in memory. Studies have shown that victim memory quality can influence criminal justice responses to allegations, independent of empirical findings that single versus repeat traumas are maintained differently in memory. Differences in victim memory subsequently impact how incidents are reported to police. This is further complicated by the fact that beliefs about how memories should be retained also influence judgments of credibility and veracity. Participants (N = 150+) were provided with a fictitious police incident report containing an allegation of IPV that varied according to the number of times it occurred (1/3/7/10+) and the specificity of the memories reported (detailed/vague). Participants then completed ratings of narrative belief, victim credibility, and legal steps required. Measures of beliefs about memory and IPV myth endorsement also were included. We anticipate that participants will (errantly) believe that victims who provide detailed/specific allegations are more credible, independent of the level of repetition. That said, expectations of memory fragmentation may be more readily applied when over 7 or 10 incidents occurred, where greater specificity in those cases may be seen as lacking in veracity. This study has important implications for how victim memory is viewed by criminal justice professionals and how perceptions inform beliefs and actions.

Faculty Mentor: Dr. Kristine Peace

Driving Fish Crazy? The Behavioural Consequences of 24-Hour 6PPD-quinone Exposure in Adult Zebrafish (Danio rerio)

By: Matthew Harper

The presence of human-manufactured contaminants in the environment has been a major negative consequence to both the biosphere and to human health. Tire wear particles (TWPs) are an emergent class of microplastic pollution with numerous potential toxic by-products. Through the urban stream syndrome of peri-urban waterways, TWPs and other pollutants are flushed into nearby aquatic ecosystems in a toxic cocktail known as urban stormwater runoff. 6PPD-q, an ozonated chemical species of 6PPD, is a recently identified toxicant within urban stormwater runoff capable of inducing mortality in coho salmon at 95 ng/L concentrations. The sub-lethal toxicity of this chemical has not been extensively studied in many fish species; for this reason, we used the zebrafish (Danio rerio) model to further examine this compound. This study administered three environmentally relevant concentrations of 6PPD-q (100, 1,000, 10,000 ng/L) over a 24-hour period to adult zebrafish of two different age cohorts (five months/seven months) and assessed locomotor, anxiety-like and boldness variables. These variables were quantified using the open field and the novel object approach tests. Control zebrafish showed differences in behaviour between the two cohorts, suggesting age-dependent effects. 6PPD-q did not produce dose-dependent behavioural effects in adult zebrafish in either cohort or in either sex. This study is a timely starting point for future determination of the toxic levels of 6PPD-q in freshwater species.

Faculty Mentor: Dr. Trevor Hamilton

Dude, Where's My Tire? Behavioural Effects of 24-Hour 6PPD-quinone Exposure in a Zebrafish Model

By: Matthew Harper

A significant contribution of non-exhaust particulate matter emitted from vehicles comes from components such as the brakes and tires. Tire wear particles (TWPs) are a major source of microplastics and have recently been implicated as a significant contributor to toxic urban stormwater run-off. A particular chemical species was identified in stormwater runoff and connected to an urban stream mortality syndrome present in spawning coho salmon of the Pacific Northwest. 6PPD-q, the chemical in question, is an ozonated by-product of 6PPD, a prevalent tire rubber antioxidant that is capable of inducing mortality in coho salmon at 95 ng/L concentrations. The capacity of this chemical to alter behaviour at similar doses has not been studied thoroughly in other fish species. A zebrafish (Danio rerio) model was utilized to explore the behavioural toxicity of doses lower than the LC50 for coho salmon (Oncorhynchus kisutch). Zebrafish were exposed to three different concentrations of 6PPD-q (0.1, 1.0, and 10.0 ng/L) for 24 hours; locomotion (distance moved, immobility, and high mobility) and anxiety-like variables (time in the zones of the arena) were assessed immediately after the 24-hour exposure using the open field and novel object approach tests. 6PPD-q does not induce dose-dependent

changes in locomotion or anxiety-like behavior in any of the concentrations tested over a 24-hour period. This study served as a pilot study for future 6PPD-q research in the MacEwan zebrafish lab.

Faculty Mentor: Dr. Trevor Hamilton

Asexual Identity Erasure: Identifying Risk and Protective Factors

By: Samantha Helgeson

Sexual minorities are disproportionately affected by negative mental health outcomes compared to their heterosexual counterparts. Individuals who identify as asexual are subject to significant experiences of erasure, marginalization, and violence, particularly those in higher education settings. Researchers acknowledge that asexuality is the most under-studied and erased sexual identity and have noted that experiences of identity erasure are perpetuated by social norms, limited visibility given to asexual people, misinformation, as well as the pathologizing of asexuality. Despite consensus in the literature that asexuality research is lacking, few take the time to explore the experiences of asexual people, particularly the factors that impact their sense of identity in relation to mental health. The present study will promote visibility of asexual people by exploring protective and risk factors of identity erasure. More specifically, factors including validation, recognition, denial, and acceptance will be examined for their potential impact on experiences of identity erasure as well as mental health outcomes. The primary goal of this study is to promote visibility of asexual identities by establishing factors that impact erasure and exploring how these relate to mental health outcomes; aiming to provide

clearer insight into the psychological well-being of individuals within the asexual community. Not only will this study address a significant gap in the literature, but the information gathered will be crucial to informing efforts to support and improve the well-being of individuals from the asexual community.

Faculty Mentor: Dr. Laura Offrey

Examining EEG Measures of Executive Control During a Visuomotor Stop-Signal Task

By: Avery Hudson

Previous research has identified the “automatic pilot’, a phenomenon in which the visuomotor system makes rapid, unconscious corrections to reaching movements in response to a change in target position. Recent research has examined the extent to which the automatic pilot is related to executive function, which is the ability to regulate one’s behaviour in different contexts. Specifically, previous research has demonstrated that the number of unintended corrections, instances where individuals were told not to correct their movements, were correlated with lower scores on the Behaviour Rating Inventory of Executive Function for Adults (BRIEF-A), an assessment of executive function. This suggests that performance on the automatic pilot task may provide an indication of executive function. Frontal midline theta is a type of brainwave activity which is thought to be associated with executive control. In fact, prior studies have found that frontal midline theta activity is larger in trials involving response

inhibition, where individuals must withhold their response. In the proposed study, we will use EEG to measure frontal midline theta during the automatic pilot task. We hypothesize that frontal midline theta will be greater during trials in which participants are told not to correct their movement to the target jump. In addition, we expect frontal midline theta to be largest on trials where participants make an error, compared to when they successfully inhibit their response. Finally, if frontal midline theta is an index of executive control, then increases in frontal midline theta should be correlated with scores on the BRIEF-A.

Faculty Mentors: Dr. Chris Striemer & Dr. Cameron Hassall

Effects of Active vs. Passive Cognitive Reappraisal Interventions on Test Anxiety and Exam Grades

By: Dana Jones

Cognitive reappraisal interventions, which encourage appraising the physiological stress response as adaptive rather than harmful, have been shown to reduce test anxiety and enhance exam performance. Stress mindset is one's beliefs regarding whether stress is helpful or harmful for performance. Research shows that holding a "stress-is-enhancing" mindset is related to better performance. Active learning, which involves engaging students with course material beyond traditional lectures, has been shown to be superior to passive learning environments. The present study combines evidence that passive cognitive reappraisal email interventions can reduce test anxiety and improve performance with evidence that active learning is superior to passive learning. We examine if an active cognitive reappraisal intervention is more effective than a passive intervention for reducing test anxiety, encouraging the use of cognitive reappraisal during an exam, encouraging beliefs that stress can be helpful for performance, and improving exam performance. We found no significant difference in test anxiety levels, likelihood of using cognitive reappraisal, and exam performance between the active and passive conditions. However, we found that students in the active condition were more likely to rate stress as helpful, and students who rated stress as helpful performed better on their midterm than students who viewed stress as a hindrance.

Faculty Mentor: Dr. Michele Moscicki

Study Guides: Evaluating Student Perceptions and Impacts on Test Anxiety

By: Nickki Kamprath

Study guides can take many forms, from a simple topic list to a multi-step guide on how to study. There is a strong student desire for study guides, and existing research shows some benefit to students. However, little research has investigated what types of study guides students prefer, what types of study guides students will actually use, and how different types of study guides impact test anxiety. We aim to address these knowledge gaps. We recruited 86 undergraduate students to complete an online survey. Students were presented with three study guides, ranging in 'guidance' level. The high guidance guide instructed students to write what they knew, check their notes, and fill in knowledge gaps. The medium guidance guide contained practice questions. The low guidance guide consisted of a topic list. Participants answered

questions assessing study guide preferences and test anxiety. Results showed that students were most likely to use the low and medium guidance guides. Core features students want in a study guide include key concepts, test details, and example questions. The high guidance guide was associated with the most test anxiety. Our results suggest that a main benefit of study guides may be providing clarity about the testing process rather than being an effective study tool. Thus, the goal of study guide creation should be to lower test ambiguity. Our study is the first to explore how types of study guides interact with test anxiety, providing a new perspective on the benefits of study guides.

Faculty Mentor: Dr. Michele Moscicki

Eyes bridge the gap: how eye gaze biases distance perception.

By: Nickki Kamprath

Previous research has found that eye contact increases nervous system arousal, and distance perception is influenced by nervous system arousal (e.g., the subject is perceived as closer if arousal is heightened). 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. We hypothesized 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. Participants viewed two pictures of a model at either the same or different distance and asked whether the model in the second picture was closer or farther compared to the first picture. To determine whether eye gaze influences distance, the models make direct eye gaze, averted gaze, or no gaze (i.e., looking down or facing away). Autonomic nervous system arousal was measured via skin conductance response and level. Preliminary results suggest that there is a bias to perceive others as closer regardless of gaze or arousal. This research is the first to explore the relationship between eye contact, arousal, and distance perception.

Faculty Mentor: Dr. Michelle Jarick

All Rainbows, No Responsibility: What Does it Really Mean to be an Ally to the 2SLGBTQ+ Community?

By: Noelle Kilbreath

In response to prominent social justice movements, the idea of allyship has gained traction. Outgroup allyship to the 2SLGBTQ+ community can create inclusive environments and challenge oppressive systems, but it can also be problematic and harmful. The present study aimed to investigate what meaningful allyship to the 2SLGBTQ+ means by examining how definitions of allyship are aligned with the actions of non-2SLGBTQ+ allies. Participants (N = 309) completed a series of surveys capturing information surrounding beliefs about allyship and related actions. Our data yielded several interesting findings regarding the conceptualization of allyship and predictors of ally action. In particular, regardless of 2SLGBTQ+ status, most respondents identified the word ‘ally’ as a noun rather than a verb. 2SLGBTQ+ participants indicated allyship was valuable overall, including independent ally actions such as care and kindness and structural actions such as voting for supportive candidates. Predictors of ally action among non-2SLGBTQ+ participants that emerged from this study were self-identification,

knowledge, skills, openness, and support. Finally, of concern were findings that indicated a high endorsement of problematic tendencies overall in 2SLGBTQ+ and non-2SLGBTQ+ participants. However, these findings may be better explored in future qualitative research. Implications and future directions are discussed.

Faculty Mentor: Dr. Laura Offrey

Cleaning Out the Closet: Protective Factors Mitigating Internalized Homophobia

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

Navigating Diversity: Learning Climate and the Experiences of Sexual and Gender Minorities at MacEwan University

By: Jared Kostiuk, Marilyn Robbins & Ismaeel El-Hakim

The current pilot study aims to investigate the influence of minority status on individuals' perceptions of their learning environment within MacEwan University. With a sample comprising 211 MacEwan University students, the study delves into two distinct areas: firstly, it explores the relationship between the learning climate and the experiences of sexual minorities, with careful consideration given to controlling variables such as gender identity and ethnicity. Secondly, it examines the association between the learning climate and the experiences of gender minorities, while similarly accounting for the influence of sexual orientation and ethnicity. Investigating the experiences of sexual and gender minority individuals is crucial as both groups are disproportionately vulnerable to experiences of discrimination and social stigma, even within educational settings. Additionally, the pilot study explores what services at MacEwan University

students utilize, providing further insight into the support structures available to sexual and gender minorities. Insights from this exploration offer valuable implications for fostering inclusive learning environments and promoting equitable outcomes for all students.

Faculty Mentor: Dr. Maria Di Stasio

Questions about Attraction

By: Michael Kramer

Previous research has observed that women tend to rate men described as having previous partners as more attractive than those without — a phenomenon referred to as mate-copying. These past studies have been limited by dichotomous measures of gender and sexuality. Using previous measures of mate-copying, our study surveyed 477 participants but also assessed their gender and sexuality. Each participant observed 10 “profiles,” each of which included a randomized picture, a name, whether or not they were in a relationship, and either how many past partners they had in the past four years (target profiles) or how many books they read in that same timeframe (distractor profiles). Participants rated the desirability of each profile, which we used to compare the attractiveness ratings of target profiles to distractor profiles. Contrary to previous studies, analysis of this data showed no significant difference between how participants rated profiles, including how heterosexual females rated the attractiveness of men. This result could be due to the modification required to make the study more inclusive, but our sample lacks enough participants in several comparison groups, making significant conclusions impossible to draw.

Faculty Mentor: Dr. Lynne Honey

Dirty Deception: Do dark triad traits predict lying about sexual history?

By: Zach Krukowski

In the proposed study, we will investigate the relationship between Dark Triad traits (i.e., Machiavellianism, narcissism, and psychopathy) and interpersonal deception about sexual history. Higher Dark Triad scores are associated with a variety of antisocial and impulsive behaviours, including deception (see Furnham, Richards, and Paulhus, 2013), as well as a tendency toward short-term and uncommitted mating strategies (e.g., Jonason et al, 2009) which is correlated with number of lifetime sexual partners. Having a high number of previous sexual partners is often perceived as less attractive by potential mates (Buss & Schmidt, 1993), and thus, that information may tend to be concealed or lied about. We predict that participants with higher scores on Dark Triad traits will be more likely to lie in everyday life, and will also be more likely to endorse strategies that include lying about sexual history. Participants will complete the Short Dark Triad (SD3) measure (Jones & Paulhus, 2014), as well as a measure of lying in everyday life (Gozna, Vrij, and Bull, 2001). They will then evaluate and respond to a series of vignettes depicting potential mate choice or relationship scenarios in which lying occurs. We will employ regression analyses to determine the best predictive relationship for lying about sexual history.

Faculty Mentor: Dr. Lynne Honey

Mental imagery weakness: Prevalence of aphantasia in an undergraduate population

By: Claire Kryska

Aphantasia, also known as imagery weakness, is an inability to form voluntary visual mental imagery (Bainbridge et al., 2021). The term was coined in 2015 by Zeman and colleagues and has garnered increasing interest in areas like autobiographical memory and emotional processing (Keogh & Pearson, 2011; Buchanan, 2007). The prevalence rates of aphantasia have thus far been diverse, ranging from 0.7% to 15.3%, depending on how the condition is characterized (Zeman et al., 2020; Betts, 1909). Because of the critical role that visual imagery plays in many cognitive functions, research into aphantasia is accelerating. This study is the first of a planned series of experiments to better characterize the strengths and weaknesses of those who experience aphantasia and help estimate the prevalence of aphantasia within a Canadian undergraduate sample. The current study will sample more than 1400 undergraduate students from MacEwan University to help establish a sample-specific prevalence rate of aphantasia. It will assess participants for the severity of their imagery weakness and connect this measure to assessments of participants' ability to form images of objects and spatial locations, ability to mentally rotate object and human shapes, as well as spontaneously use mental imagery in their day-to-day lives. Finally, the study will attempt to connect aphantasia to a lack of emotional responding (alexithymia), impairments in autobiographical memory, and correlates to traits of autism.

Faculty Mentor: Dr. Eric Legge

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

Personality, Mating Orientation, and Substance Use

By: Brielle Lamash

This study is a replication and extension of previous research in which Lopez and colleagues (2021) investigated relationships among short-term mating orientation (STMO), drinks per week (DPW), and risky sexual behaviour (RSB). The current study hypothesized that STMO, as measured using the Sociosexuality Inventory-Revised (SOI-R), and DPW would be positively associated with RSB and extends the previous research by hypothesizing that Dark Triad traits would further predict RSB. Participants completed questionnaires assessing SOI, DPW, RSB, and Dark Triad traits. Researchers found positive correlations among SOI, DPW, and RSB. Dark Triad traits did not, however, significantly predict RSB. Mediation analysis showed that DPW was a mediator between SOI and RSB, while Dark Triad traits did not significantly add to that relationship. The study's findings highlight the need for targeted interventions addressing alcohol consumption to reduce RSB, particularly for those with a short-term mating orientation, and suggests a greater need for approaches considering cultural factors. Limitations include the cross-sectional survey design and the predominantly female sample from one university, suggesting the need for broader prospective studies in the future.

Faculty Mentor: Dr. Lynne Honey

Qualitative differences arts and sciences course reviews: Using RateMyProfessor.com to understand the differences in psychology course evaluations for arts and sciences.

By: Kaiden Langlois

Online consumer reviews of professors have been valuable for students to aid in course selection. This research seeks to analyze the qualitative differences between arts and science psychology reviews on RateMyProfessors.com (RMP). Data from Mount Royal University (MRU) was extracted from RMP. TransferAlberta.ca was used to categorize psychology into arts or science courses. Foundations of Biopsychology and Introduction to Psychology I: Natural sciences are science courses; correspondingly, Social Psychology and Introduction to Psychology II: Social Psychology are arts courses. A total of 27 psychology professors had reviews pertaining to these courses. All reviews were analyzed to avoid excluding important situational details such as pandemic-related shifts in the consumer reviews. Using an inductive approach to thematic analysis, the reviews were coded separately for arts psychology and science psychology courses. These codes were determined by analyzing patterns in the data. Finally, subject-based themes were constructed from these codes. The themes were analyzed and revised. A comparison of the science psychology and arts psychology themes lead to a detailed narrative exemplifying the differences in subject-based evaluations that take place online. This research intends to bridge the subject-bias gap in the literature pertaining to course evaluations as well as inform best use practices of integrating consumer reviews.

Faculty Mentors: Dr. Laura Gilmour & Dr. Melike Schalomon

The Relationship Between Visuomotor Control and Working Memory.

By: Samuel Larocque

This study explores the interplay between the go/no-go task and working memory to elucidate the cognitive processes underlying response inhibition and control. Previous research has highlighted the automatic correction mechanisms within the visuomotor system, often referred to as the "automatic pilot," which operates independently of visual awareness.

Participants completed three separate go/no-go tasks where the number of jump locations (2, 4, 6) was manipulated. Critically, we examined the influence of working memory on the participants' ability to adhere to explicit instructions, particularly during no-go trials when they were instructed to refrain from correcting ongoing movements. Our findings reveal that working memory plays a crucial role in the disengagement of the automatic pilot, as participants demonstrated more impaired inhibition of automatic corrections during no-go trials when working memory demands were heightened.

Furthermore, participants were given the Corsi block task, Adaptive digit span, and the BRIEF-A to measure working memory. Correlational analysis indicated that the proportion of jumping targets exerted distinct effects on the interaction between the go/no-go task and working memory. Specifically, poorer working memory scores positively correlate to impaired inhibition of automatic corrections on the 6 jump target go/no-go task. However, working memory was not correlated with automatic corrections on the 2 and 4 jump target go/no-go tasks. As only the 6 jump target condition had a significant positive correlation to working memory for the go/no-go task, we conclude that as the number of potential jump targets increases, the demands of working memory for the task also increase.

Faculty Mentor: Dr. Chris Striemer

Exploring the Impact of Logistics Video Games on Executive Function Enhancement: A Comparative Study

By: Samuel Larocque

This research explored whether engaging in video game play could enhance executive function (EF). EF refers to cognitive processes encompassing the ability to plan, organize, manage time, prioritize tasks, solve problems, make decisions, and regulate emotions and behaviour to achieve goals effectively. Participant's EF was measured using a digital version of the Adaptive Digit Span, the Corsi Block Test, the Stroop Neuropsychological Screening Test, and the Wisconsin Card Sorting Task. Forty-five participants engaged in video game play for approximately 10 hours, with measures of EF assessed before and after gameplay. Analysis revealed significant improvements in overall EF in the complex (Factorio) condition compared to the simple (Papers, Please) condition, supporting the hypothesis that complex logistics games may effectively enhance EF. While improvements in working memory were not significant, trends suggested potential enhancements, particularly in verbal working memory. Overall, the findings provide foundational support for future research for using complex logistics games as a therapeutic tool for individuals with EF impairments. Furthermore, by providing insights into the cognitive benefits of video game engagement and factors influencing their effectiveness, this

research contributes to understanding the potential of specific video game genres in cognitive enhancement. Further exploration of diverse game genres, larger sample sizes, and longer gameplay durations are recommended to deepen understanding and maximize the effectiveness of video game interventions for EF enhancement.

Faculty Mentor: Dr. Eric Legge

Moderate OCD, Academic Achievement, and “Picture-Taking”: An Exploratory Investigation

By: Katherine Luzanac

While obsessive-compulsive disorder (ocd) is a long-lasting and debilitating diagnosis for some, many people admit to having subclinical ocd tendencies. Furthermore, popular media often misrepresents ocd as a “good disorder,” with beneficial qualities like close attention to details and superior organizational skills. The present research explored whether individuals who have moderate ocd symptoms differ from those with low and high ocd symptoms on measures of academic success, procrastination, and self-control. Our prediction was that individuals with moderate ocd tendencies would have higher levels of academic achievement and self-control and lower levels of procrastination in comparison to both the low and high ocd groupings. Results, however, indicated that moderate ocd individuals do not do better on these measures. In a second aspect of this study, we also conducted an assessment of a controversial "picture taking strategy,” in which individuals who are compulsive checkers take photos of their checking triggers to provide proof to themselves of having completed a check. Results indicated that among the compulsive checkers who tried this strategy, 70% reported that it effectively reduced the frequency of checking. These results suggest that further research into the efficacy of coping strategies for ocd may be warranted.

Faculty Mentor: Dr. Russ Powell

Special Education Teachers Use of Evidence and Non-Evidence Interventions in a Classroom Setting

By: William Matychuk

Special education tends to serve a broad array of children with very divergent needs. The result of this is that many different practices and interventions are used by special education teachers in an effort to accommodate their enormously variable conditions (Forbes et al., 2021). However, this generally results in the use of a highly eclectic, often unorganized set of treatments (Burns & Ysseldyke, 2009; Hess et al., 2008; Knight et al., 2018). Exacerbating this issue, previous data shows that special education teachers often do not review extant literature to support their use of certain interventions (Sciuchetti et al., 2016). In order to examine this issue in the specific context of Alberta, this study seeks to disseminate a survey to special education teachers and teaching assistants throughout private, public, and catholic schools in Alberta to gather region-specific data on this same issue. This will be done via an anonymous online survey produced in Qualtrics, with web links to the survey and posters with QR codes distributed to school districts across the province. The survey will contain a list of alphabetically

ordered interventions, both evidence-based and non-evidence-based. These two categories will be compared statistically to examine the prevalence of one or the other. The survey will also allow respondents to comment, and comments will be analyzed thematically.

Faculty Mentor: Miranda Macauley

Applied Behaviour Analysis Within the Context of Clinical and Counselling Psychology: A Consideration for an Integrative Approach.

By: Will McCarty

The disciplines of both clinical psychology and counselling psychology have their respective histories in higher education institutions. Previous researchers have investigated the similarities and differences between these two areas in psychology within Canada and United States. With the growth of applied behaviour analysis as a subspeciality that uses the principles of behaviour change in providing services, there has been increased questions about the availability of graduate level programs that provide adequate education and training in behaviour analysis for future professionals using therapies based in behavioural principles. Undergraduate students pursuing advanced education in a psychological field are often tasked with the decision to decipher the differences between educational programs on their own that aligns with their future career goals. This poster will briefly review the different regulations of practitioner titles in their delivery of different “psychological therapies” across Canada and also summarize the different psychological theories that are emphasized within each graduate psychology program that may align with the goals for future professional practice areas.

Faculty Mentor: Miranda Macauley

Spectral Vibrations: Exploration of infrasound as a contributor to haunt experiences.

By: Trina Miksic

Research has shown that unusual and unexplained experiences can be attributed to paranormal activity (Tandy & Lawrence, 1998; Wiseman et al., 2002). Tandy and Lawrence (1998) suggest that infrasound at 19 Hz causes bodily effects associated with ghostly experiences, such as visual anomalies. To support the 19 Hz infrasound causing ghostly experience hypothesis, Tandy (2000) found evidence of infrasound at 19Hz in a 14th-century cellar where several people had experienced unusual activity, such as seeing apparitions and feeling an unexplained presence. In contrast, French et al. (2009) unsuccessfully attempted to prove that infrasound at 19 Hz would have ghostly effects; however, this could be due to design limitations. This study aims to search for and measure infrasound frequencies at locations with claims of people having ghostly experiences to expand on Tandy and Lawrence’s (1998) discovery of infrasound in relation to paranormal experiences.

Faculty Mentor: Dr. Rodney Schmaltz

Parental Playlists: Investigating Preschooler's Recognition of Parental Singing

By: Anza Mirza

Voice recognition is a skill that involves a complex interaction between multiple perceptual and cognitive processes, yet our ability to recognize familiar voices occurs with ease. This skill emerges early in life with infants showing a readiness to attune to the voice's musical features–including pitch, rhythm, and timbre–well before they are able to understand its spoken content. The goal of the proposed project is to determine the acoustic features that contribute to preschoolers' recognition of maternal and paternal singing. Another goal is to document their appraisal of songs sung by their parents and those sung by unfamiliar singers with intact and altered sound features including pitch, tempo, timbre, and musical key. Music software incorporating AI technology (e.g. Moises) have made the production and editing of music recordings more accessible. The use of AI technology to manipulate acoustic features creates opportunities to parametrically study how sound features affect perception. Manipulating the acoustic features will enable us to identify the essential cues that children rely on for voice recognition. Voice identification despite acoustic alterations will also shed light on the robustness of children's memory for their caregivers' voices. We predict that preschoolers will identify their parents' original sung versions more accurately than manipulated versions. We also predict that liking ratings of their parents' singing will be higher than those of unfamiliar singers. Identifying the unique attributes of parental singing will not only help us understand the musical basis of parent-child bonding, but they can be informal to music therapy interventions.

Faculty Mentor: Dr. Tara Vongpaisal

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

By: Logan Moon

Stigma is regarded by many as the biggest obstacle people with dementia (PwD) face when accessing care. 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 administered a series of questionnaires to 298 undergraduate students at MacEwan University to determine if participant socio-demographics, levels of ageist beliefs, personality characteristics, experience with dementia, and knowledge of dementia can predict differences in stigmatizing beliefs towards PwD. The results of our study suggest that higher levels of ageist beliefs and less experience with dementia significantly predict higher levels of stigmatizing beliefs and attitudes among Canadian undergraduate students. Whereas dementia knowledge, personality, gender, and age did not predict levels of stigmatizing beliefs. However, Conscientiousness did predict lower levels of ageist beliefs. The results suggest that when seen in public, dementia behaviors related to aggression and poor aesthetics are much more upsetting in comparison to behaviours associated with cognitive deficits, like poor memory and confusion. Although extensively more research is needed to understand which dementia behaviours are most stigmatized, this study suggests that stigma reduction programs should target negative beliefs around dangerousness and appearance. The stigmatic beliefs and associated mitigating influence of spending time with PwD evident in this undergraduate

population suggest a need for experience-based strategies to replace stigmatic beliefs and attitudes towards PwD in undergraduate students, with positive beliefs before they go into positions of power and influence in the healthcare system.

Faculty Mentor: Dr. Lori Harper

Got self-control? Investigating inhibitory control in North American red squirrels (Tamiasciurus hudsonicus)

By: Marko Muselin

Inhibitory control is the ability to prevent or alter innate responses to stimuli. This has been widely studied through prepotent feeding behaviors with several different animal species. Research on Eastern gray squirrels and Eurasian red squirrels indicates that both of these species may engage in inhibitory control of a prepotent feeding response, specifically picking up food. North American red squirrels (Tamiasciurus hudsonicus) forage in the same way as both gray and red squirrels and therefore may also be able to inhibit the innate bias to picking food up with their mouths. Our research will investigate inhibitory control in the North American red squirrel through a food selectivity task and a detour cylinder task. The selectivity task will examine inhibitory control through the ability to inhibit optimal food choice (high calorie food vs. storable food) The detour cylinder task will test whether squirrels are able to inhibit their prepotent feeding response (picking food up with their mouths) and instead reach into the tube with their paw to obtain the reward. Based on previous research with closely related species , we predict Red squirrels will successfully inhibit both types of prepotent feeding responses. This will provide insight into inhibitory control abilities of wild red squirrels, which will inform both the building body of literature on animal inhibitory control as well as interactions of red squirrels with their environment.

Faculty Mentor: Dr. Shannon Digweed

The Effects of Priming Stigma on Retrieval Memory in Canadian Undergraduate Students

By: Adam Nichols

Dementia is a progressive disease process leading to impairments in memory, problem solving, language, and emotional regulation. The label of dementia carries a significant stigma, which negatively affects both patients with dementia and their caretakers. The effects of priming on dementia stigmas is poorly researched. If cognitive priming changes the way we remember past events, then priming may also be able to reduce dementia related stigmas as well. Our study will attempt to demonstrate that cognitive priming effects can increase or decrease the retrieval of dementia stigma consistent items, depending on the way the dementia label is communicated in a vignette. This would potentially suggest new tools to help patients with dementia communicate their disorder without suffering from the effects of stigma.

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

Social Dominance and Security in High, Low, Peacock, and Mouse Materialists

By: Khulda Noor

Materialism is the belief that it is important to acquire wealth, possessions, and social status, and that these acquisitions are central to one's success and happiness. Individuals can be either high or low in materialism, but there are two distinct types of materialists: peacocks and mice. Peacock materialists are hedonistic and spend ostentatiously, while, mouse materialists are anxious, insecure, and tighter with money. Because people use materialism for social impression management, this study investigates whether the social function of materialism varies for the types of materialists in terms of social dominance (better than the group) versus social security (equal to the group). Different types of materialists (high materialist, low materialist, peacock, mouse) will attend an in-person lab in groups of four; each person will receive the exact same luxury pen, however, one person's pen will not be functional and will be switched out for a cheap pen in front of the group. Participants will then complete a series of computer trials designed to measure social dominance and security; where they choose from a list of material items before and after being told that the item they chose is either higher, equivalent, or lower in value compared to the group. We expect that peacocks and high materialists will exhibit social dominance, while mice will demonstrate social security. This study could reveal that the social motivation of materialism varies in types of materialists, further predicting their behavior profiles.

Faculty Mentor: Dr. David Watson

"Automatic" online corrections during a reaching task are associated with individual differences in executive function.

By: Branden Otte

Previous research has demonstrated that the dorsal visual stream can execute rapid movement corrections following target perturbations. This "automatic pilot" can operate without visual awareness and under circumstances where participants are instructed not to correct their movements. In the current study, we examined how these "automatic" corrections might be related to individual differences in executive function (EF). To examine this, healthy adult participants (n=80) completed two versions of the automatic pilot task (APT) on a touch screen: 1) a "correct" condition, requiring participants to correct their movements to the new target location following target jumps, and 2) an "ignore" condition, requiring participants to ignore target jumps and instead point to the initial target location. Participants also completed measures of executive attention, such as the Sustained Attention to Response Task (SART) and the Cognitive Failures Questionnaire (CFQ), and measures of EF, including the Adult ADHD Self Report Scale (ASRS) and the Behavioural Rating Inventory of Executive Function for Adults (BRIEF-A).

Our results indicated that participants made significantly more corrections to target jumps in the "correct" condition than the "ignore" condition. Importantly, "automatic" unintended corrections in the "ignore" condition were significantly correlated with poorer ASRS, CFQ, and BRIEF-A scores. However, unintended corrections were not correlated with errors or reaction times on the SART. These results suggest that the APT is sensitive to individual differences in EF and

may be useful as a visuomotor measure of response inhibition and cognitive control in both healthy and clinical populations.

Faculty Mentor: Dr. Chris Striemer

Traversing the darkness of depression: Exploring the spatial cognitive biases present in major depressive disorder.

By: Branden Otte

Cognitive models of depression posit that numerous cognitive deficits influence the maintenance and etiology of major depressive disorder (MDD). For instance, individuals with MDD typically display deficits in working memory, which are thought to arise given difficulties inhibiting one's attention to negative information. This inability to shift away one's attention from such information leads to a negative attentional bias. Further, research has noted that the cognitive biases in MDD are interrelated. However, it is currently unclear if these cognitive biases translate into other domains, such as spatial cognition.

Therefore, this study seeks to examine the spatial cognitive abilities of individuals higher in depressive symptomatology. Specifically, given the ubiquity of negative processing biases, this study wishes to examine if individuals higher in depressive symptomatology will rely more heavily on negatively valenced affective than neutral valenced affective landmarks to traverse through a novel virtual environment compared to those lower in depressive symptomatology. Additionally, we wish to examine if one's level of brooding rumination accounts for any observed biases. If depression is linked with differing spatial navigation abilities, we expect to see that those higher in depressive symptomatology will have poorer navigational abilities overall and rely more heavily on negatively valenced affective landmarks than neutral valenced affective landmarks compared to those lower in depressive symptomatology, as measured by a landmark direction task, landmark sequence recall task, and a scene landmark recognition task.

Faculty Mentor: Dr. Eric Legge

Influence of Lifestyle Factors vs. Study Tactics on Academic performance

By: Neerali Panchal

The study aims to explore the relative impacts of self-management tactics and lifestyle factors on academic achievement among students. Initially, it seeks to replicate ,the results of a previous study which revealed the efficacy of certain self-management strategies—specifically, the use of a dedicated study environment, implementation intentions, and contingent self-rewards—on enhancing students' study behaviors and academic outcomes. Insofar as this previous study was conducted prior to the pandemic, the present study will also examine whether these strategies are still significantly associated with studying behavior and academic performance following the pandemic.The subsequent phase of the study investigates the influence of lifestyle factors—namely, healthy eating habits, sleep patterns, and regular exercise—on students' self-control and academic performance. We hypothesize that these lifestyle dimensions will significantly predict academic success, independent of the self-

management practices previously examined. Our analysis will determine the extent to which behavioral tactics versus lifestyle factors contribute to academic achievement.

Faculty Mentor: Dr. Russell Powell

Pluralistic Mating Strategies: Examining Sexual Orientation with CNM, Jealousy, Sex Drive, and Sociosexuality

By: Crystal Pavlis

Studies on jealousy show robust and replicable gender differences in the experience of jealousy toward infidelity, though how bisexuality or CNM affects this remains to be explored. In this study, sexual orientation was explored with sociosexuality, openness to consensual non-monogamy (CNM), and sexual desire, along with predictors of jealousy and openness to CNM. Participants (n=764) from MacEwan University, the Pride Centre of Edmonton, and online groups completed surveys on Qualtrics. Data was analyzed in JASP using correlational, linear regression, and MANOVA models.

(H1) Ambiphilics had more permissive sociosexuality and greater openness to CNM than both androphilics and gynephilics, and more solitary sexual desire than androphilics.

(H2) Openness to CNM was predicted with the regression equation: Openness to CNM = 22.17 + 0.370*(sociosexuality) +0.269*(solitary sexual desire) -0.095*(dyadic sexual desire).

(H3) Sexual jealousy was predicted using the regression equation: Sexual jealousy = 3.295 - 0.169*(orientation). Gynephilics had greater sexual jealousy than androphilics and ambiphilics. Sexual jealousy did not differ significantly between ambiphilics and androphilics.

People with pluralistic sexual orientation and openness to CNM differ in their mating strategies when compared to monosexual and monogamous people. These findings suggest that bisexual and non-monogamous individuals use differential mating strategies that may increase their mating opportunities.

Faculty Mentor: Dr. Lynne Honey

AI and Musical Authenticity

By: Crystal Pavlis & Brielle Lamash

Our study aimed to examine the connection between perceived authenticity and the evaluation of a musical piece in the context of Artificial Intelligence-generated music. People's active music engagement influences their attitudes toward and emotional responses to music and their overall cognitive, perceptual, and memory abilities. As AI has been increasingly used in creative outlets in recent years, such as in generating visual art and music, we believe that someone's active engagement in music will affect their perceptions and appraisals of music generated by AI. Our research aims to explore whether revealing the song's origin, composed by a human artist or generated by AI, affects listeners' evaluations. We hypothesized that listeners' awareness of the song's authenticity would influence their evaluation. Participants informed that a human artist created the song were expected to exhibit more positive reactions. In contrast,

those informed that AI-generated the song were anticipated to have less positive responses. This study on music perception is significant because it identifies how artificial intelligence (AI) affects individual's perceptions of music authenticity, an area of research that is relatively underexplored. This research informs our understanding of technology's growing influence on creative industries and cultural norms, offering valuable insights into the longevity of AI in music.

Faculty Mentor: Dr. Rodney Schmaltz

Does objectification/empowerment of women affect perceived consent?

By: Nyala Pittel

Consent is more nuanced and complex than popular culture might have you believe. Like any interpersonal communication, signals occur across multiple channels and require interpretation. In addition, signals may be missing or unclear, and context is a source of information that, usually unconsciously, shapes this interpretive process. Imagine "guy meets girl for coffee, she's bubbly and gregarious and excited, and they find they have a lot in common." One eventual outcome of this brief story could be that they discover a mutual romantic interest in one another over multiple interactions. However, the eventual outcome we envision is probably quite different if the exercise opens with "guy meets girl wearing a nun's habit for coffee." Given the persistent role of context in shaping human cognitions and behaviours, we can ask how consent exchanges might be influenced by a context that encourages the objectification or empowerment of women. In this research, participants will be exposed to stimuli in a first task that primes either objectification or empowerment of women compared to a control condition. Participants will be exposed to media with ambiguous consent signals in a second task. Participants' perceptions of consent will then be measured based on interpreting their reactions. We anticipate that participants may overinterpret consent after exposure to objectifying media and that exposure to empowering media could correct this overinterpretation of consent.

Faculty Mentor: Dr. Aimee Skye

The Visual Categorization of Handwritten Letters

By: Adia Redekopp

Handwriting is a complex visual pattern that is unique to each individual. While the majority of research on handwriting has concentrated on its motor production and its potential interference with letter generation, little attention has been paid to the visual perception of handwriting. Previous research has suggested that the motor production of straight letters (e.g., j, k, w) disrupts the visual perception of these letters, but not of curvy letters, suggesting a categorical difference between the two. For our research, we have developed a unique procedure to quantitatively evaluate handwritten stimuli using psychophysical techniques with a novel set of standardized stimuli. Participants discriminated handwriting samples that varied in author strength using a 2 alternative forced choice procedure. Performance was evaluated as the just-noticeable-difference (JND), which reflects the variation in author strength required for reliable discrimination. Psychometric functions were measured for four observers with a wide range of psychophysical experience. We found that performance in all observers was well described with a cumulative Gaussian psychometric fit, validating the efficacy of our paradigm. However, we

found that stimulus manipulations such as word length, word type, and letter types (ie., curvy vs. straight letters) had negligible effects on the JND. We suspect that this may reflect a 'ceiling effect' in our task, and future research will focus on adjusting the experimental paradigm to increase task difficulty. Overall, our research demonstrates that classical psychophysics techniques offer a novel metric for quantifying handwriting perception and may provide a valuable tool for broader research in reading and literacy.

Faculty Mentor: Dr. Nicole Anderson

Fame and Blame: Celebrity Status and Evidence Directionality in Judgments of Sexual Assault Cases

By: Nadia Reid

In recent years, there has been an increase in reported sexual assault cases. This was partially due to the #MeToo movement, spearheaded by celebrities who came forward as survivors of sexual violence. These allegations were often accepted as fact, and victim blaming was minimized. However, the influence that celebrity status has on perceptions of credibility is unclear. In some cases, celebrity victims were believed, yet in others, celebrity defendants were viewed as more credible (especially when victims were not famous). While celebrity status is associated with likeability and credibility, it is unclear how this influences blame perceptions. The current study was designed to test the effect of celebrity status of the victim (famous/not famous), the perpetrator (famous/not famous), and the directionality of evidence (guilty/ambiguous/not guilty) on perceptions of credibility and legal decision-making. Participants will be randomly assigned into a vignette condition depicting a sexual assault case summary that varies accordingly, and complete measures of victim and perpetrator credibility, case outcomes, just world beliefs, and rape myth acceptance. We predict that celebrity status will be more predictive of victim relative to perpetrator credibility (i.e., not famous = less credible), especially in cases where the perpetrator is famous. That said, evidence directionality may override celebrity status effects, except in cases where the evidence is ambiguous. These results have important implications for how judges and jurors view allegations when fame or status is at play, and whether blame is influenced by fame.

Faculty Mentor: Dr. Kristine Peace

Collective Narcissism and Reactions to Political Issues

By: Lucia Rittammer

Collective narcissism, the belief that one's ingroup is exceptional and deserving of exceptional treatment, has been linked to ideological conservatism and right-wing authoritarianism. Individuals higher in collective narcissism lack responsiveness to social action for disadvantaged individuals; however, individuals tend to show a reflexive defensiveness to personally-framed political issues, as relationally-framed issues are seen as less targeted. To further elucidate the relationship, we will explore whether the interaction between political ideology and collective narcissism will determine reactions to politically charged issues. We predict that individuals higher (vs. lower) in collective narcissism will align with more

conservative ideology; this relationship leads to a stronger emphasis on issues relational (vs. personal) to oneself. As these issues are liberally framed, conservative individuals are likely to express a reactionary instinct toward personally framed issues. To test this, participants will complete a measure of collective narcissism, political ideology, and a questionnaire on politically charged issues framed either as personally related (e.g., “I benefit from a provincially mandated minimum wage.”) or relationally related (e.g., “Canadians benefit from a provincially mandated minimum wage.”). We expect that conservative (vs. liberal) participants will exhibit higher levels

of collective narcissism and report more extreme responses to relationally framed (vs. personally framed) politically charged issues. These findings would further researchers' understanding of collective narcissism and how it moderates individual reactions to politically charged issues.

Faculty Mentor: Dr. Miranda Giacomin

Do Opposites Attract: The Effect of Self-Perceived Masculinity-Femininity on Attraction

By: Marilyn Robbins

Gender influences perception of attractiveness for both physical (Perrett et al, 1998) and behavioural (Schudson et al, 2018) characteristics. Mate-choice research in Western countries typically demonstrates that feminine women and masculine men are perceived as more attractive as potential heterosexual partners, but responses by non-Western and non-heterosexual participants is more varied (e.g., Zheng & Zheng, 2016; Scott et al, 2014). Existing heteronormative research often confounds gender identity with gender expression so that, for example, being a woman is not distinguished from being feminine. Research with non-heterosexual samples reveals that gender expression (e.g., being more 'femme' or more 'butch) is an important factor in mate preferences, and there is some suggestion that ones own gender expression influences those preferences (Hoffman et al, 2005; Schudson et al, 2018). Further, attraction to behavioural traits may be more affected by traits that are ungendered, like kindness or reliablity (Schudson et al, 2018. The proposed study is a 2 (participant gender expression) x 2 (masculine/feminine photo) x 3 (masculine/feminine/neutral description) between groups design. We will present participants with a photo and description of a potential partner, and they will provide a series of ratings of that person. Photos and descriptions will vary in terms of masculinity/femininity. Participants will also rate their own self-perceived gender expression. We predict a main effect of self-perceived gender expression, and a main effect of gender cues in photos. We do not predict a main effect of behavioural descriptions. Specifically, we expect that more-feminine participants will be attracted to more-masculine photos, and vice-versa.

Faculty Mentor: Dr. Lynne Honey

STOP! That's Stalking! Or Is It? Identification of Stalking Behaviours Based on Type and Intensity

By: Natasha Robinson

Perceptions of stalking are highly variable, and depend upon the form, duration, and intensity of behaviours. Social media stalking is often viewed as acceptable, and popular culture has romanticized stalking as a method to obtain a desired relationship. Given that stalking is a victim-defined crime predicated on fear, understanding the circumstances in which stalking is identified and reported is critical for awareness, support, and prevention. The present study evaluated stalking identification in relation to form (online, offline, or both), intensity and escalation (using variations of low or high at differing points). Participants (N ~ 500) were provided a stalking scenario and asked to identify specific points in which the behaviours should be classified as stalking, fear-inducing, and warranting police intervention. Data collection is currently in progress and will be complete by Spring 2024. We anticipate that participants will identify stalking behaviours in the offline or 'both' conditions earlier and more frequently than those in the online only group. Further, low intensity stalking behaviours that are stable or

escalate over time will be associated with lower and delayed rates of identification. Empirical studies on how stalking is perceived remain limited, despite widespread implications for victims, support, and criminal justice.

Faculty Mentor: Dr. Kristine Peace

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

How Empathy Influences Online Dating Selection

By: Chella Robles

Previous research has found that the presence of dogs can facilitate social interaction between individuals and influence how one is perceived by others. Additionally, pet ownership significantly correlated with the development of empathic traits, such as being responsive, taking on another person's perspective, and having concern for others. It was found that individuals who owned pets during childhood had greater empathy towards animals and humans in adulthood. Empathy has also been shown to be a crucial contributor to social interactions and developing positive relationships. For instance, having empathic traits in a romantic relationship is associated with less conflict, improved marital adjustment, and greater relationship satisfaction. As such, the present study intends to use mock online dating profiles to examine whether 1) dog presence in the dating profile influences the perceived level of empathy of the person; and 2) the perceived level of empathy plays a role in partner selection based on their motivations (seeking short vs. long-term relationships). It is hypothesized that dog presence will impact the selection behaviour of those seeking long-term relationships far more than those seeking short-term relationships. Additionally, it is hypothesized that dating profiles with higher levels of perceived empathy will result in more successful matches for those seeking long-term relationships, compared to those seeking short-term relationships. Findings from this study will be beneficial in understanding how the presence of dogs in dating profile photos impacts online dating judgments, as well as the role of empathy and dating motivations in partner selection.

Faculty Mentor: Dr. Eric Legge

A Comparison of Profiles and Sentencing Outcomes of Three Violent Offending Groups

By: Chella Robles

Intimate partner sexual violence (IPSV) has been historically examined as a set of behaviours that are grouped into either intimate partner violence (IPV) or general sexual violence (SV). However, this is concerning, especially since previous research suggests that sexual violence against partners is more physically violent and highly coercive than other forms of interpersonal violence. Yet, individuals who have sexually assaulted or offended against their partners are more likely to receive lighter sentences compared to those with non-intimate partner victims. The present study examined whether the three types of interpersonal violence cases (i.e., IPSV, IPV, and SV) differed in the characteristics of the perpetrators, victims, and the index occurrence, aggravating factors, mitigating circumstances, and the severity of sentencing outcomes. Additionally, we examined whether some of the aggravating and mitigating factors are associated with the severity of sentencing decisions more than the other factors. Our findings revealed significant differences in some index occurrence variables, sentence outcome, and sentence severity among the three groups of perpetrators. Moreover, sentence severity was significantly positively associated with the total number of aggravating factors, but did not correlate with the total number of mitigating factors. Contrary to our expectations, no significant differences were found in the characteristics of the perpetrators and victims, as well as the presence of aggravating and mitigating factors considered in sentencing among these three types of offences. The implications of these findings will be discussed.

Faculty Mentor: Dr. Sandy Jung

Examining Derived Relational Frames of Opposition Across Arbitrary Stimuli.

By: Joel Roy

Understanding how language is involved in shaping psychopathologies for certain conditions and the role of language in “talk therapies” is an important area of research (Hayes 2004; Stewart 2018). According to Hayes (2004), Skinner stated that “a scientifically valid study of language and cognition was possible,” and therefore, “a door was opened by Skinner” (Hayes, 2004) into the development of a behaviour-analytic account of language and cognition: Relational Frame Theory. In Relational Frame Theory, different relations can be formed, such as sameness, comparison, opposition, distinction, and more (Stewart, 2018). Frames of Opposition hold the ability to shape avoidance behaviours towards ongoing mental struggles that prevent engagement in meaningful activities. This study examines the development of frames of opposition between different concepts (i.e. hot and cold) and emotions (i.e. love and hate) across arbitrary stimuli. Participants will be taught to match an image of a concept to an arbitrary stimulus and then asked to match one arbitrary stimulus to another that was trained as its conceptual opposite. We hypothesized that following training, participants would match the arbitrary stimuli as opposites, signifying that the relation of opposition is transferred from the concept to the arbitrary stimuli through combinatorial mutual entailment.

Faculty Mentor: Miranda Macauley & Dr. Russ Powell

Generative AI in Post-Secondary Education

By: Joel Roy

Research has shown that behavioural-based teaching methods, such as the Personalized System of Instruction (PSI; Keller, 1968), can lead to greater mastery and retention of the course material. Unfortunately, creating such a course can be extremely time-consuming, requiring the development of quizzes, exams, and programmed readings. With the rise of generative AI, the hurdles to creating such a course utilizing PSI are significantly reduced. In this poster, we present three practical applications utilizing ChatGPT by OpenAI to develop materials for a personalized system of instruction. We demonstrate 1) how ChatGPT can quickly generate multiple-choice and short-answer questions, 2) how students can utilize ChatGPT to quiz themselves endlessly, and 3) how ChatGPT can generate readings based on the principles of programmed instruction.

Faculty Mentor: Dr. Russ Powell

Increasing variety food Intake in picky eaters

By: Katerina Rubachuk

Many impacted children struggle with rigid food preferences, which can limit their nutritional diet. Through the use of reinforcement, the goal is to increase food consumption in several participants. Preffered foods (food the participant accepts) and nonpreffered target foods (food the participant refuses but the guardian wants to increase consumption of) will be presented to

the participant, along with a designated reinforcer to increase consumption of nonpreffered target foods.

Faculty Mentor: Miranda Macauley

Sexpectations: Interpretations of Coercive Control in Relation to Sexual Identity

By: Aly Shurvell

Research has demonstrated that sexual minorities experience exacerbated rates of sexual violence, yet studies on coercive control within these relational contexts are lacking. At present, it is unclear as to whether there are different forms of coercion that exist across identity groups, and how coercion is interpreted by others when factors associated with relationships (i.e., length and sexual identity) and coercion are considered. Participants (N = 500+ currently) completed measures of their own lived experience with sexual coercion. They were then randomly assigned into a vignette condition depicting sexual interactions that varied according to sexual identity (heterosexual/gay/lesbian/bisexualFF/ bisexualMF), level of sexual coercion (low/high), and relationship context (stranger/ acquaintance/dating/established), and provided ratings of consent, coercion, and perceptions concerning the incident. Participants also completed measures of beliefs/bias in relation to sexuality, sexual violence, and relationships. In general, we anticipate that participants will minimize sexually coercive behaviours when individuals depicted are members of a sexual minority, independent of whether the coercion was low or high. Further, we predict that sexual identity will interact with relationship status concerning victim blaming, where more established relationships will impact judgments of heterosexual couples more than other sexual identities. This study has implications for how the experiences of sexual minorities are interpreted, and will elucidate additional barriers to reporting sexual violence.

Faculty Mentor: Dr. Kristine Peace

Inappropriate Sexual Behaviour: Intervention and Education

By: Aly Shurvell

It is common for individuals diagnosed with developmental disabilities (DDs) to display an excess of inappropriate social behaviours, including inappropriate sexual behaviour (ISB). ISB generally refers to sexual behaviours that are performed in excess and/or in situations that are deemed inappropriate by society. However, there exist many different topographies, or types, of ISB that are highly individualized to the individual engaging in the behaviour. There further exist many barriers to treating ISB, including the shame and stigma surrounding the topic, as well as the potential difficulties and ethical concerns around performing a functional analysis that will inform treatment. In the current study, we conducted multiple literature reviews regarding the functional analysis and treatment options for ISB, followed by designing an upcoming trial-based functional analysis to possibly inform a future intervention efforts for a 15-year-old child with DDs who displays ISBs. This study aims to discuss how to conduct an ethical functional analysis that can be used to assess and treat highly complex ISBs, and the necessity for these types of discussions due to potential future occurrences of ISB as adults that could lead to

victims on both sides of the scenario. The individual that was offended towards and the individual with complex developmental disorders possibly facing criminal actions against them.

Faculty Mentor: Miranda Macauley

Undergraduate Student Opinions Regarding Aging: An Exploratory Study

By: Sophia Slade

In 2020, the global population of older adults was projected to more than double over the next three decades. Despite this international phenomenon, ageism remains ubiquitous (e.g., mass media and institutional policies). It has been found that younger adults hold negative attitudes and low expectations of aging, which has been linked to worse mental, cognitive, and physical health outcomes when they reach older adulthood. Fortunately, these beliefs are malleable, and interventions, including education about successful aging and the negative impacts of ageism, may improve younger adults' expectations regarding aging. This study aimed to investigate undergraduate students' expectations regarding aging and whether such expectations can be influenced by receiving knowledge on the topic. Participants (n = 362) completed a series of demographic questions, the 38-item Expectations Regarding Aging (ERA) survey, the Fraboni Scale of Ageism (FSA), and the Big Five Personality Inventory. The ERA was positively associated with the personality traits extraversion, conscientiousness, and agreeableness and negatively associated with neuroticism. Participants who indicated that they believe they have control over their aging process and look forward to aging score higher on the ERA. People who have not thought about their aging and feel burdened by an aging society have higher scores on the FSA. The results of this study serve to increase peoples' understanding of stereotypes and prejudices regarding aging and older adults. The more ageism is studied and discussed, the more we can do to reduce its prevalence.

Faculty Mentor: Dr. Lori Harper

Visuomotor Adaptation and the Role of the Cerebellum: Enhanced Aftereffects Due to Hand and Visual Shift Congruency

By: Sophia Slade

Spatial neglect is a potential consequence of unilateral damage to the right temporoparietal cortex, commonly caused by stroke. Neglect is characterised by an inability to attend to, orient to, or respond to, to stimuli located to the contralesional (left) side. There is no universally accepted treatment approach for spatial neglect; however, prism adaptation can help manage this disorder. Prism adaptation is a technique in which patients wear horizontal visual displacing prisms and perform reaching movements. In healthy participants, "neglect-like" behaviour can be induced via prism adaptation procedures using leftward shifting prism glasses. This study examined the effects of congruent and incongruent hand and prism shift combinations on measures of pseudoneglect in healthy adults, using a within-subjects design, to explore a "congruency effect" (i.e., when there is a larger magnitude of aftereffect when the hand use and direction of prism shift are the same versus opposite). This effect is likley due to the cerebellums processing of ipsidirectional visual errors during prism adaptation. Measures included straight-

ahead pointing, landmark, and line bisection tasks. The straight-ahead pointing tasks demonstrated a congruency effect, with a larger magnitude of aftereffects when the hand and prism shift were the same. Landmark and line bisection tasks yielded aftereffects but no congruency effects. The findings of this study may be applicable to clinical settings and could be beneficial in treating patients with spatial neglect.

Faculty Mentor: Dr. Chris Striemer

Neuroticism to GAD: The Influence of Thought Processes and Metacognitions

By: Kevin Styba-Nelson

Generalized anxiety disorder (GAD) consists of chronic, distressing worry across multiple areas. Neuroticism, the personality trait of negative emotionality, has been proposed to contribute to GAD through several maladaptive thought processes. One such process is anxiety sensitivity (AS); the fear of anxiety and its consequences. Another is intolerance of uncertainty (IU); the perceived inability to cope with uncertain events. Two metacognitions known to be related to GAD are positive beliefs about worry (PBW), which are beliefs that worrying is beneficial, and negative beliefs about worry (NBW), which are beliefs that worrying is harmful or uncontrollable. Our first study investigated if PBW and NBW would moderate the relationship between AS and GAD. Based on data from 573 students, several negative moderations were found. However, these data were affected by students' high scores on the GAD measures. Our second study addressed and built upon this by sampling 624 participants from the Canadian general population. Here we found that neuroticism led to AS and IU, which led to GAD symptoms and higher worry severity. These results are consistent with past research on the pathways between neuroticism and GAD. Further, when examining worry severity, NBW positively moderated the effect of a subfactor of IU, while PBW negatively moderated the effect of a subfactor of AS. These findings expand upon past research by suggesting that metacognitions may moderate the relationships AS and IU have with GAD. This suggests that metacognitions may be an important component of treatments for GAD that target AS or IU.

Faculty Mentor: Dr. Alexander Penney

Seeing and Feeling the Difference: Developing a Time-Based Measure of Executive Functioning in a Three-Dimensional Object Sorting Task.

By: Adam Szybunka-Ostopowich

The goal of the proposed project is to develop a reaction time measure to assess executive function performance in a three-dimensional object sorting task. A customized apparatus incorporating a digital weight scale will be constructed to track real-time information of object sorting over time. This time-based measure is expected to be more sensitive to age differences than accuracy measures used to assess executive function performance from sorting and rule-switching behaviours in the traditional card-sorting task. Additional goals are to expand previous work in the object sort version by developing novel geometric sort objects and to develop an apparatus that will enable us to manipulate the sensory cues available to the participant. This

will allow us to assess the relative contribution of visual and tactile cues on object sorting and rule-switching performance.

We predict that the availability of visual and tactile cues will facilitate participants' sorting rate and rule-switching performance, as seen in shorter reaction times compared to when visual cues are eliminated. The outcomes of this project are expected to expand our ability to assess age-related changes in performance and to determine more precisely the perceptual contributions to executive function in sort tasks.

Faculty Mentor: Dr. Tara Vongpaisal

Just Keep Breathing: Can Biofeedback Promote Use of Deep Breathing as a Stress Coping Strategy in Undergraduate Students?

By: Darby Tarrant

University students face high stress and often do not cope effectively. Typical barriers to students' use of effective coping strategies include: (1) lack of awareness, (2) forgetting, (3) lack of time, (4) lack of knowledge. Further, people with a fixed mindset (i.e., belief that traits are not modifiable), are less likely to engage in efforts to change traits, suggesting students with a fixed stress mindset will engage in fewer coping efforts. In our study, we address student coping barriers through education and biofeedback to promote more adaptive coping. Specifically, students either received no information about deep breathing (control), deep breathing education (video), or education plus heart rate and blood pressure measurements before and after performing deep breathing (education + biofeedback). We also measured students' anxiety mindset. Students reported frequency of deep breathing use at baseline and at a two-week follow up. Changes in deep breathing use from baseline to follow-up are compared across groups using ANOVA. We hypothesized that students in the biofeedback + education group would be most likely to uptake deep breathing. We use regression to determine if students with a fixed stress mindset are less likely to uptake deep breathing regardless of group. Results of this study will help inform effective stress interventions for university students.

Faculty Mentor: Dr. Michele Moscicki

Children's peer play and science, technology, engineering, and mathematics (STEM) behaviours with loose parts: a study proposal

By: Keirsten Taylor

Children's play and STEM education intersect throughout early childhood as children immerse themselves in sensory exploration, item manipulation, and problem-solving. From a young age, children are naturally inclined to explore, experiment, and question their environment, forming the foundation for STEM education. Within this context, play emerges as an avenue for facilitating cognitive self-regulation and executive function, with loose parts serving as a particularly powerful medium. Loose parts, such as acorns and sticks, are everyday items characterized by open-ended, manipulable materials that offer children diverse opportunities for exploration, fostering cognitive development through problem-solving during unstructured play. By providing an assortment of unstructured, movable materials, we cater to this exploratory

instinct, thereby fostering a positive and proactive attitude toward learning. While educators and policymakers endorse the benefits of loose parts, research has yet to explore the relationship between loose parts and STEM behaviours in young children's unstructured peer play. This review synthesizes empirical literature on peer play and play types, namely pretend, symbolic, and constructive. It focuses on how children may benefit from using loose parts to explore STEM ideas, allowing children to engage in unstructured and open-ended activities such as building, constructing, experimenting, and exploring, in a variety of ways.

Faculty Mentors: Dr. Ozlem Cankaya & Dr. Tara Vongpaisal

Screening Politics: How Internet Usage Modulates Attentional Biases and Vigilance among Liberals and Conservatives

By: Arshdeep Vaid

The present research investigates the cognitive and emotional consequences of worldview conflict, with a focus on the impact of political ideology cues on cognitive vigilance and attentional bias. While previous studies have highlighted the psychological stress and negative emotions resulting from experiencing worldview conflict, this study extends the inquiry to cognitive effects by employing the Dot-Probe Task. This task is designed to measure attentional biases toward political ideology cues by presenting participants with various images that evoke different political ideologies. We propose that people will demonstrate attentional bias towards opposing political ideologies in general, but especially for those who have certain personality traits or behavioral tendencies. In addition to the Dot-Probe Task, participants completed a series of surveys assessing constructs such as social dominance orientation, right-wing authoritarianism, political social media participation, social networking usage, and political participation. The aim is to correlate these psychological and behavioral metrics with attentional biases to understand how ideological exposure influences cognitive vigilance differently based on these factors. The study's outcomes are anticipated to offer new insights into the cognitive dynamics underpinning political ideological conflicts, illustrating how such exposures may enhance cognitive vigilance and induce attentional biases. By integrating findings on the emotional toll of worldview conflict with cognitive responses to political cues, this research aims to contribute to a more nuanced understanding of the interplay between psychological wellbeing and political ideology in shaping cognitive processes.

Faculty Mentor: Dr. Craig Blatz

Think Harder: The Perils of Pseudoscientific Beliefs

By: Dawson von Stein

As platforms such as social media become more ingrained in our daily lives, we are constantly bombarded with misinformation. Knowing how individuals' thought processes affect how they approach misinformation could be vital in creating interventions that slow the spread of misinformation. Therefore, this study aims to investigate whether metacognition (i.e., thinking about thinking) is correlated with actively open-minded thinking and pseudoscientific beliefs. Past research has shown that metacognitive reflection increases individuals' ability to sort

between accurate and inaccurate information. Moreover, research has also shown that those with higher levels of actively open-minded thinking are less susceptible to pseudoscientific beliefs. We predict that those who are more metacognitively aware will be more likely to engage in actively-open minded thinking while holding less pseudoscientific beliefs. Further understanding how metacognition impacts individuals' thought processes and their susceptibility to misinformation may provide a foundation for future interventions that help people make informed decisions when faced with misinformation.

Faculty Mentor: Dr. Rodney Schmaltz

Communicating Consent: The Influence of Educational Infographics on Sexual Consent Awareness and Application

By: Shannon Walters

Previous research has found that our understanding of sexual consent influences how it is practiced. Educational campaigns about sexual consent are a pivotal part of preventative strategies to reduce the widespread prevalence of sexual violence, yet gaps in awareness and understanding remain. The present study assessed sexual consent knowledge and application using a longitudinal design where pre-posttest measures were administered before and after exposure to an infographic during Phase 1. These same measures were readministered during Phases 2 (one week later) and 3 (one month later) to evaluate longer-term retention of sexual consent education. Undergraduate students participated in Phases 1 (n = 148), 2 (n = 104), and 3 (n = 60) for course credit, with an overall rate of attrition of 59.46% between Phases 1 and 3. Based on the above, we express concerns about discrepancies between what students report they know relative to their sexual consent application. Findings suggest that the accuracy of the application of nonconsent is poor, and some elements of consent are better understood than others. In addition to how sexual consent campaigns present content, we will discuss broader implications concerning positive directions, targeted audiences, and suggestions to make content more applicable to everyday life.

Faculty Mentor: Dr. Kristine Peace

Social Media Intensity and Materialism: Can Consumers Avoid Negative Outcomes by Re-Evaluating Their Approach?

By: Emily Woods

The present study investigated whether the motivation behind social media usage impacted an individual’s propensity to engage in social comparison. The study compared two types of smartphone usage: process and social. Process-oriented smartphone usage is smartphone usage for predominantly non-social entertainment purposes, such as entertainment and relaxation, while social-oriented smartphone usage is smartphone use for social activities, including networking, messaging, and phone calls. It was predicted that individuals engaging in high social media usage with a social orientation would have a higher social comparison orientation than those with a process orientation. Moreover, it was examined whether orientation towards social media predicted parasocial relationship intensity and four emotional responses:

envy, schadenfreude, happy-for-ness, and sympathy. Parasocial relationship intensity is a one-sided relationship experienced by an audience member for a celebrity. Envy is a desire for what someone else has, schadenfreude is pleasure in someone else's misfortune, happy-for-ness is joy for someone else's fortune, and sympathy is pain in someone else's misfortune. It was predicted that a social orientation would predict envy, schadenfreude, and higher parasocial relationship intensity, while a process orientation would predict sympathy, happy-for-ness, and lower parasocial relationship intensity. The results indicated that a process orientation significantly predicted social comparison orientation in those with high social media usage. The results also found that a process orientation significantly predicted sympathy but did not otherwise find significant effects, suggesting that a person's orientation towards social media was not a significant predictor of parasocial relationships and emotional outcomes.

Faculty Mentor:

The Effects of Eastern Singing Bowl Music Listening on Visual Attention in Children with Autism Spectrum Disorders

By: Krystal Yik

Autism spectrum disorder (ASD) is characterized by difficulties with social and emotional communication and a tendency to engage in rigid and repetitive behaviours. Because attentional problems also occur in children with ASD, there may be common processes underlying attention and ASD symptoms.

Previous research has found that music can enhance children's problem-solving, creativity, and emotion regulation. In Eastern traditions, singing bowl music has been shown to promote relaxation and result in other health benefits. We assessed whether exposure to singing bowl music during art play could enhance children with ASD's attention in a subsequent visual search task as shown by higher accuracy and shorter reaction time.

Fifteen children with ASD (n=15) participated with their parents in two sequential art play sessions, one with singing bowl music played in the background and the other without music, the order of which was counterbalanced across participants. Following each art play task, children played a computerized visual search task in which they searched for a target item among distractor items.

Children with ASD achieved shorter overall task duration and higher accuracy scores in the visual search test following exposure to singing bowl music in comparison to their performance without music. ASD children with greater severity also seemed to benefit more from music exposure in comparison to those with a less severe diagnosis. We attribute ASD children's enhanced performance to the increased focused attention and relaxation promoted by their exposure to singing bowl music.

Faculty Mentor: Dr. Tara Vongpaisal

Pet food for thought: Analyzing the relationship between pet ownership and disordered eating behaviours.

By: Isabella Yip

Disordered eating is the subclinical manifestation of eating disorders and generally presents as a fear of weight gain or a desire for thinness. It commonly includes restriction, purging, and/or excessive exercise (Shreyer et al., 2016). Like eating disorders, disordered eating behaviours (DEBs) can affect anyone of any age, gender, socioeconomic status, or ethnicity and can lead to severe physiological damage or high mortality. Moreover, DEBs may present alongside other psychological disturbances, such as anxiety, depression, or loneliness. Due to the stringent nature of eating disorders and inaccessible treatments, the present study aims to examine protective factors, such as pet ownership, against DEBs. Previous research has demonstrated that pet ownership is associated with lessened symptoms of loneliness, anxiety, and depression (Friedmann & Thomas, 1985). Participants (N = 200+) will complete questionnaires measuring anxiety, depression, loneliness, DEBs, and pet attitudes and ownership. We anticipate that primary caregivers of pets (specifically dogs or cats) will have decreased levels of anxiety, depression, and loneliness and, therefore, fewer DEBs. That being said, those who only live with the pet will not yield the same results. The literature on the relationship between pet ownership and DEBs is limited despite the dangerous health impacts of disordered eating.

Faculty Mentor: Dr. Eric Legge

Social Work

Through Their Lens: Rural Homelessness and Photovoice Narratives on Stigma

By: Glenda Gallardo, Avarey Undershute & Kennedy Higginbotham

No abstract available.

Faculty Mentor: Kealey Dube

Developing Simulations to Assist Students at Practicums with the Student as an Active Partner

By: Dennis Huseinovic & Eli Yaschuke

Simulations are an effective way of supporting students with disabilities in practicum settings. Using an interdisciplinary approach with the faculty of social work and a bachelor of fine arts student, the team ran simulations of practicum scenarios to better prepare students for practicum work. The team consists of two faculty members, an educational developer, a learning specialist, and two students, one majoring in theatre and the other in the Bachelor of Social Work. The student expressed disability-related barriers that prevented them from fully participating in the practicum. As such, a unique simulation was designed. Hopefully, the results of this study will lead to a case example that can be used to support students experiencing similar disability-related barriers in their practicum or community field placements. Over the

course of the fall 2023 semester meetings were held with simulations to address the learning outcomes of the field placement practicum. Each scenario was done three times over the course of the fall semester. This presentation is made to show the results of the simulations and the impact that they had on practicum.

Faculty Mentor: Kealey Dube

Sociology

A Critical Discourse Analysis of Canadian News Media Coverage of Immigration And Multiculturalism During the First Wave of the 2019 Global Pandemic (COVID-19)

By: Angelika Jalyn Arroyo

This paper aims to examine how Canadian news media framed immigration and multiculturalism during the first wave of the pandemic, between January and July of the year 2020, focusing on determining and identifying patterns in the media coverage of three different major Canadian news outlets (CBC, the National Post, and the Globe and Mail). This study utilized critical discourse analysis (CDA), employing media framing as one of its theoretical frameworks, to deconstruct underlying meanings in the selected articles, conceptualize thematic descriptions, and better understand the representation of ethnic and racial minorities in Canada within the construction of the text.

Faculty Mentor: Dr. Kalyani Thurairajah

Exploring Social Isolation Among Black Parents Who Have Children with Autism Spectrum Disorder

By: Jojo Boateng

According to Dis/ability critical race studies (DisCrit), inequalities based on disability do not exist separately from those in other domains of life, such as race. Instead, they intersect, building upon our identity in ways that amplify one's discrimination and the discrimination of those with disabled adjacent identities (e.g., parents) (Annamma et al., 2013; Pearson et al., 2023). This literature allowed me to marry my interests in race and health to explore the (social) implications that autism has in the parenting community. As such, through my partnership with Autism Edmonton, I explored how inequalities (i.e., ableism and racism) present within Canada exist in a multitude of ways that impact the lived experiences of those with disabled adjacent identities, specifically Black parents of children with autism spectrum disorder (ASD).

This presentation summarizes a research proposal that was developed for Autism Edmonton as a community partner for a fourth-year independent study course. Which explores the subjective experience of parenthood and how it becomes impacted by social factors such as race and disability. In order to study this topic, we propose future research that uses phenomenology and vignettes to center the voices of Black parents of children with autism (Creswell, 2014; Creswell,

2018; Starks & Trinidad, 2018). This will give researchers and community organizations such as Autism Edmonton a deep understanding of the experiences of Black parents of children with ASD.

Faculty Mentor: Dr. Kalyani Thurairajah

Impacts of the Covid-19 Pandemic on Indigenous Mental health.

By: Layla Dekin

The COVID-19 pandemic has highlighted the disproportionate impact on minority populations, particularly Indigenous peoples in Canada, exposing underlying racial health disparities. This study investigates the effects of the pandemic on anxiety levels among visible minority populations in Canada, aiming to understand the unique factors contributing to anxiety within this demographic group. Using data from the "Impacts of COVID-19 on Canadians - Mental Health" dataset collected in 2020 by Statistics Canada, this study employs regression analysis to assess the relationship between visible minority status and anxiety severity, while controlling for demographic and regional factors. Results indicate that visible minority status is significantly associated with higher anxiety levels, highlighting the need for targeted interventions and support strategies for minority populations during public health crises. This research contributes to the understanding of mental health disparities among minority populations and informs public health policies aimed at addressing these disparities.

Faculty Mentor: Dr. Andrew Patterson

“Things Need to Change” - Two Opposing Camps: A Content Analysis of Online News Articles

By: Merranda Felker

Throughout 2023, news articles from the Canadian Broadcasting Organization (CBC) cumulatively tell a story about the conditions of being homeless from various angles. Historically, academic literature suggests that scrutiny of news coverage and its portrayals of homelessness occurs infrequently; as a result, there has been insufficient investigation of media representation of homelessness, especially since the onset of the pandemic resulted in an increase in people experiencing homelessness. Further investigation is needed to assess how portrayals of homelessness and factors affecting vulnerable people might vary in news coverage depending on who is being interviewed. In this project, I do a qualitative analysis of CBC news coverage on homelessness and related subjects over the course of 2023 by analyzing and coding relevant articles to identify themes in the ways homeless people, shelters, policing practices, and encampments are portrayed in the media. I found that government and agency representatives are most referenced in news coverage concerning the homeless population and that they have opposing opinions on topics like shelters and the dismantling of encampments. In addition to this, people experiencing homelessness are underrepresented when it comes to commenting on key issues directly related to them. Keywords: news media, homelessness, encampment(s), shelters, policing practices, framing

Faculty Mentor: Dr. Amanda Nelund

Systemic Racism and Hockey: How do the NHL and PWHL Bargaining Agreements Reflect the Hierarchy of Racialization and Privilege?

By: Aaron Glen

In Canada there are two identifiers that are commonly used to describe Canadian identity: multiculturalism and a love for hockey. What happens, however, when the two mix? Focusing on the intersection where hockey meets both race and culture, I will be examining the existing Collective Bargaining Agreement (CBA) in both the National Hockey League (NHL) and the Professional Women's Hockey League (PWHL) to see how it addresses racism, and therefore how it relates to the maintenance or abolition of the hierarchy of racialization within professional ice hockey. Adopting a theoretical framework based in critical race theory, I will be doing a critical discourse analysis of the existing Collective Bargaining Agreements to see how language, or lack thereof, as well as the accessibility of the document, is used to reinforce or abolish normalized power dynamics that stem from the policy makers to the players within the games. This study is positioned at an important transitional time as the National Hockey League's Collective Bargaining Agreement ends at the conclusion of the 2026 season

Faculty Mentor: Dr. Kalyani Thurairajah

Medical Racism in Canada: Examining the Influence of Medical Curriculum

By: Shahad Hassan

This presentation will focus on providing you with a deeper and broadened sociological understanding of how Canadian Medical education can either contribute to promoting Medical Racism or alternatively promoting Health Equity, Social Accountability, Anti-Racism efforts among other sociologically informed learning outcomes. A discussion of the findings and research done for my honours study will be presented and the aim is to recognize the importance of critiquing and modifying Canadian Medical Education in order to arrive at a more health equitable future. Overall, attending this presenting will equip you with a stronger understanding of how race and racism are embedded in our healthcare system largely as well as in the curriculum of our Canadian Medical Schools specifically.

Faculty Mentor: Dr. Alissa Overend

Reclaiming Justice: Assessing Canada's efforts to address Indigenous incarceration

By: Ashu Kito

Objectives:

The Office of Correctional Investigator has been producing annual reports which span decades and provide wealth of information about Indigenous incarceration that has not been examined. Therefore, examining these annual reports will provide new insight and better

understanding about how the Canadian government is addressing Indigenous overincarceration.

Data/Methods:

I conducted a content analysis for 14 annual reports written by the Office of Correctional Investigator (OCI) spanning 10 years from 2009-2023.

Results:

Six themes emerged around Indigenous overincarceration: over-representation, Gladue sentencing principles, Healing lodges, bureaucracy, theory and practice, cultural and spiritual, and Elders. Sub-themes included measuring healing/success, two-tier system, privilege vs rights, no connection to Indigenous community, barrier to cultural and spiritual access, and cultural insensitivity. In aggregate, these findings suggest that current and ongoing efforts are insufficient to address indigenous overincarceration, and bold new directions are necessary.

Conclusions/implications:

The issue of over-incarceration of Indigenous people has often been framed as a “problem” need a “fix,” however the themes emerging from the OCI’s annual reports suggest that it is a deeper, systematic problem that requires the government to reevaluate the methods being utilized. The actions taken by the government including the application of the Gladue principle has not made a progress in reducing over-incarceration. Thus, the government needs to examine the bureaucracy and practice that hinders reconciliation efforts such as the development of Healing lodges.

Faculty Mentor: Dr. William Schultz

International Injustice and the International Criminal Court

By: Natalie Mamo

The International Criminal Court (ICC) is an international legal body tasked with the pursuit of justice in cases of international crimes against humanity. However, it is heavily influenced by other international institutions that are inherently political, such as the United Nations Security Council (UNSC). This reliance raises questions about the ICC’s independence and efficacy. This Honours research project uses the Russia-Ukraine war as a case example to provide both contemporary and historical context to the operation of the ICC.

Faculty Mentor: Dr. Daniel Alati

"Being Without Restriction": Contemporary Sociological Theory and the Gender Anti-Binary

By: Ezra Richards

Canada and the US have seen recent increases in transphobic attitudes and policies, under the guise of “parental rights” or adherence to tradition. Trans people are often painted as predators attempting to indoctrinate children into "gender ideology," and any deviance from the cisgender, male-female binary are seen as inherently dangerous or inappropriate, misconstruing and preventing trans liberation. Using sociological theories from Maurice Merleau-Ponty, the Frankfurt School, and Judith Butler, I propose a path beyond this transphobic discourse: redefine gender devoid of any and all labels and categories. This anti-binary attitude puts the emphasis on embodied experience, such that gender is centred around personal joy and self-awareness rather than external, societal criteria. With this anti-binary in place, gender liberation will extend not only to trans individuals, but to all individuals facing pressure from the gender culture industry.

Faculty Mentor: Annaliese Pope

Theatre

Audrey II Puppet

By: Nathan Behnke

This project is an interpreted design and creation of an Audrey II puppet from Little Shop of Horrors. The Audrey II is a carnivorous plant of mysterious, alien origin that feasts on blood and humans and grows throughout the play. This project is an actor-sized, puppeted, costume, roughly five to six feet in height. The design is constructed so that a puppeteer can sit inside the puppet and control it with their body. The project consists of two sections: the plant body/head and the garden pot it sits in. The Audrey II is made primarily of soft foam, PVC pipe and painted fabrics, while the garden pot is constructed of plywood and contains a seat in the center for the puppeteer to sit in. This project is a part of my THPR 422 Artisan Crafts VIII: Capstone Project and is solely costed for and built by myself. On top of the course requirement, this project's objective will be to better practice and engage myself with forms and techniques of prop making, scenic painting and costuming in new and expanded ways. I am learning about puppetry, large-scale costuming and buying for a large-scale project.

Faculty Mentor: Daniela Masellis