INSPIRE

RESEARCH SYMPOSIUM

BOOK OF ABSTRACTS

2025

CONTENTS

Hello and welcome to the second INSPIRE Research Symposium! We are *so* excited to bring this opportunity to the University of Regina. INSPIRE is an interdisciplinary graduate initiative which is led by a team of graduate students. INSPIRE strives to promote academic success and professional development among graduate students, as well as the greater student body.

The main goal of the *INSPIRE Research Symposium* is to function like an academic conference. This way, students can gain exposure to an academic conference setting, but within a friendly and encouraging atmosphere.

We want to thank everyone for engaging in this symposium and wish everyone continued success in their academic journey.

Best wishes,
The INSPIRE Team

MEET OUR TEAM
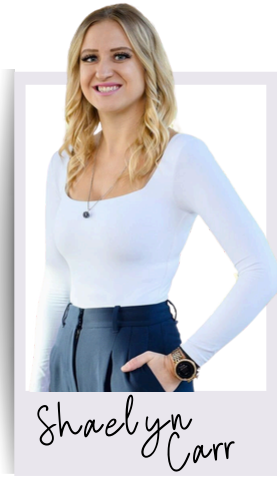
Shaelyn is a second-year PhD student in Experimental and Applied Psychology and completed her Master's degree at the University of Regina in 2023. Shaelyn has received a SSHRC Doctoral Award for her studies. Shaelyn's Master's thesis focused on a novel eyewitness lineup technique to use with children and her doctoral dissertation aims to explore a new mechanism to distinguish between truthful and deceptive alibi witnesses. As a co-founder of INSPIRE Shaelyn is passionate about students sharing knowledge with one another. student success, and student mentorship. Shaelyn hopes that INSPIRE can provide students with a network to help them succeed.

Andy is a PhD student in the clinical psychology program at the University of Regina. As a mixed-method researcher, his interests span across topics of aging and chronic illness (e.g., dementia, cancer). Some of his recent work has explored the effect of mind-body therapies for cancer survivors, and the assessment of pain in older adults with severe dementia. As a co-founder of INSPIRE, Andy is passionate about student engagement and interdisciplinary collaboration. He hopes to help create pathways for students to work together and learn from one another in their academic and professional pursuits.

Priya recently completed her MSc Interdisciplinary in Kinesiology & Health Studies and Biology. Her thesis examined the impact of lifestyle on gut microbiota and implications for health in aging and chronic disease (i.e., type 2 diabetes). Currently Priya is investigating the effects of physical activity on food intake regulation mechanisms in aging and type 2 diabetes. From her own research, Priya recognizes the importance of multidisciplinary work and through her involvement in INSPIRE hopes to promote interdisciplinary collaboration.

Priya Verma

Joshua Adams
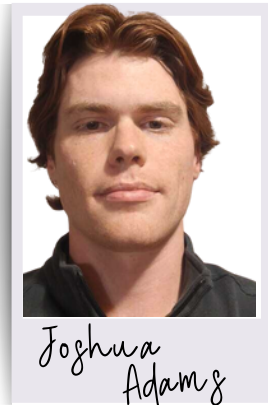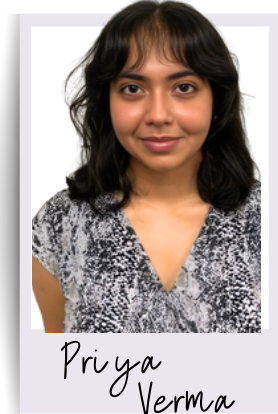
Joshua is a PhD student in the El-Halfawy Lab at the University of Regina, where his research is focused on the global antimicrobial resistance crisis. His research employs an interdisciplinary approach, integrating advanced biomolecular techniques and chemogenomics to uncover novel antibiotic resistance mechanisms under host mimetic conditions. Through his involvement with INSPIRE, Joshua aims to help support an environment that promotes opportunities for people from diverse backgrounds to share their research.

Kailey is a first-year student in the Master of Science in Experimental and Applied Psychology program. Kailey's Master's thesis focuses on factors that influence children's detection of grooming behaviours. Her other research interests include interviewing techniques used with children as well as the memory and accuracy of witnesses. Kailey's research is funded by a SSHRC Canadian Master's Fellowship. Through INSPIRE Kailey hopes to help foster a collaborative community of graduate students.

Kailey Thompson

Alexandra
Apesland

Alexandra is an interdisciplinary masters student in anthropology and psychology as well as a University Teaching Fellow for ANTH 100. She has designed and led both in-person and online courses and has been a TA for over 20 courses. She excels in fostering engaging and ethical learning environments that challenges others critically. Her research, "Evil Unframed", explores the cultural and psychological experience of viewing art that depicts themes of torture, genocide, and rape. Recently she has received a CGS-M, finaled in the 3MT, and has presented work at diverse international conferences. Alexandra is interested in research concerning aesthetics, ethics, and the psychology and anthropology of visual art.

Tilar is a master's student in the Experimental and Applied Psychology program. Her research areas include police psychology, victimology, police legitimacy, and social psychology. Her master's thesis examines the opinions and experiences of Canadian police officers during human trafficking investigations. This includes understanding the barriers faced during investigations, methods for building rapport and conducting victim interviews, and challenges to prosecuting human trafficking cases in the Canadian justice system. Tilar joined INSPIRE because she enjoys leadership and student mentoring!

Tilar
Steinke

KEYNOTE: DR. EMILY DUNCAN

Emily Duncan PhD

**SSHRC Postdoctoral Fellow,
University of Regina**

Dr. Emily Duncan is SSHRC Postdoctoral Fellow in the Department of Sociology and Social Studies at the University of Regina. She holds a Bachelor of Arts and Science (Honours) in Environment from McGill University and obtained her Masters and PhD in Geography from the University of Guelph. Her current research investigates the social consequences of digital agricultural technologies and connects the trends of digitalization in agriculture to on-going issues related to consolidation, financialization, and climate change. Ultimately, Dr. Duncan's research aims to produce knowledge that will advance the resiliency and sustainability of agri-food systems. She is the recipient of the D.F. Forster Doctoral Medal and was awarded the Vanier Graduate Scholarship.

COLLABORATORS WANTED: INTERDISCIPLINARY RESEARCH FOR MEANINGFUL IMPACT

Dr. Emily Duncan's keynote address at 1:30 p.m. will highlight her experiences navigating interdisciplinary collaboration during the research process and provide insights on how working across disciplines can ensure that research has a greater impact and solves real-world problems.

Same School, New Degree: The Benefits and Drawbacks of Staying for Grad School

At 1:00 p.m. Dr. Chris Oriet Associate Dean of the Faculty of Graduate Studies and Research will be discussing the benefits and drawbacks of continuing your education at the University of Regina. The session will include a question period with Dr. Oriet and Dr. David de Montigny who has completed their entire education at the University of Regina.

INSPIRE

2025 Research Symposium Itinerary

Time	Location	Event
9:00– 9:15	**CW 113**	Opening Ceremony
9:15– 10:15	**CW 113**	Paper Session
10:30– 11:30	**CW 113**	Data Blitz
11:30– 1:00	**RIC ATRIUM**	Poster Session / Lunch
1:00– 2:00	**RIC ATRIUM**	FGSR / Key Note Speaker: Emily Duncan
2:15– 3:15	**RIC 209** / **CW 113**	Paper Session / Paper Session
3:30– 4:30	**RIC 209**	Data Blitz
4:45– 5:00	**RIC ATRIUM**	Closing Ceremony

CW = College West, Main Campus
RIC = Research and Innovation Centre, Main Campus
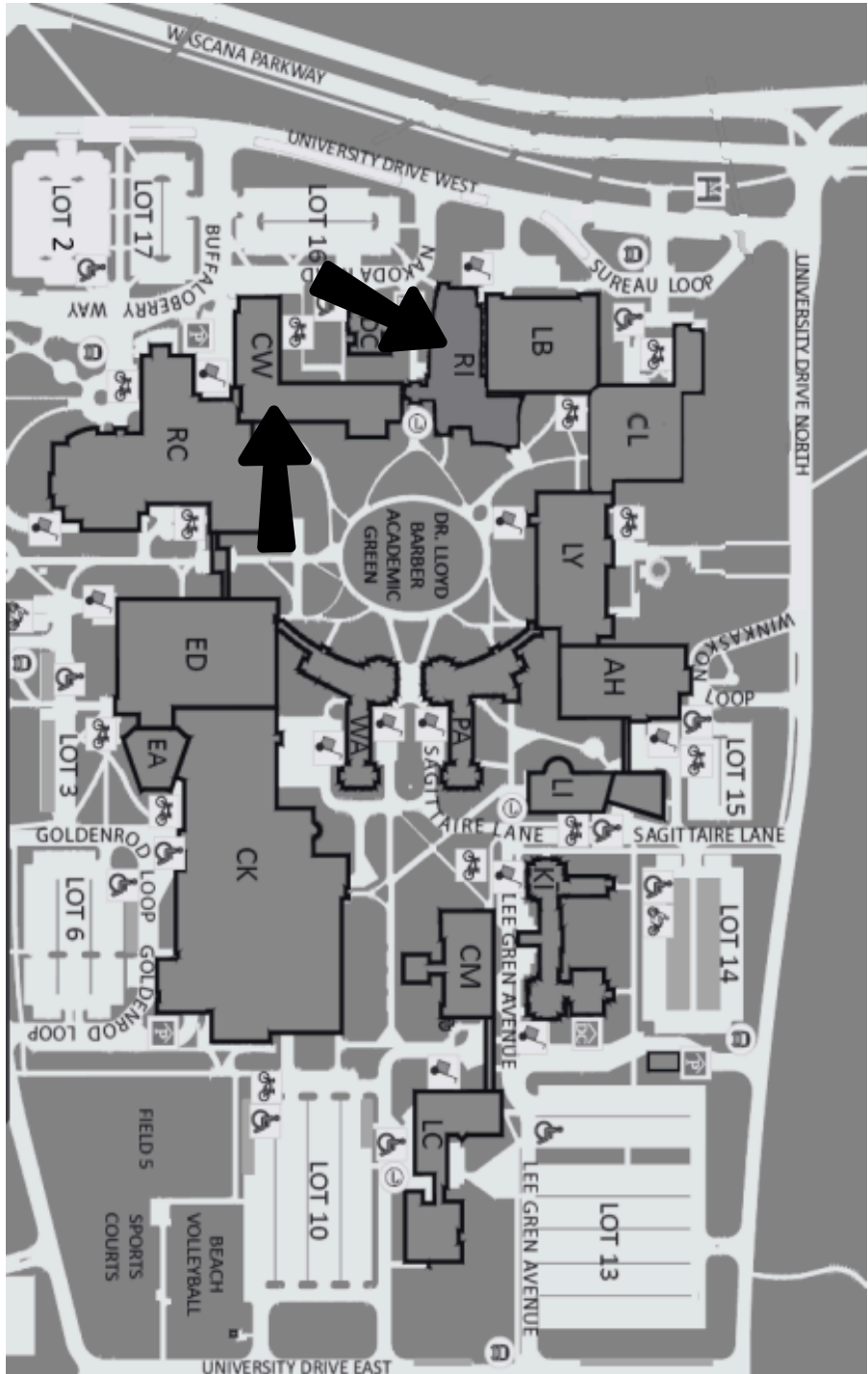
9:15-10:15 PAPER PRESENTATIONS (CW 113)

/ JOHNNA PARENTEAU
ON THE BEHAVIOUR OF THE ROOTS OF THE WEIGHTED MATCHING POLYNOMIAL

/ RUMPA CHOWDHURY
ASSESSING REGIONAL VARIATIONS IN COLLECTION EFFICIENCY FOR EMPTY SEEDS AND PESTICIDE BAGS ACROSS CANADA

/ KUFRE ARCHIBONG
ABSORPTION AND DESORPTION ACTIVITIES OF AMINE SOLVENTS AT DIFFERENT CO2 CONCENTRATIONS AND THE DEVELOPMENT OF STRUCTURE-ACTIVITY RELATIONSHIPS USING MACHINE LEARNING MODEL

ON THE BEHAVIOUR OF THE ROOTS OF THE WEIGHTED MATCHING POLYNOMIAL

Johnna Parenteau
Mathematics and Statistics
Supervised by Dr. Shaun Fallat

Understanding matchings in a discrete graph is essential in many theoretical and applied problems involving graph models. To any graph, we can associate a weighted matching polynomial which is an important algebraic object for analyzing properties of a graph. In this talk, we will discuss how the roots of the weighted matching polynomial can change with respect to vertex deletion. That is, when a vertex is deleted from a graph whose roots are defined by the weighted matching polynomial, the multiplicity of a given root can either increase by one, decrease by one, or stay the same.

ASSESSING REGIONAL VARIATIONS IN COLLECTION EFFICIENCY FOR EMPTY SEEDS AND PESTICIDE BAGS ACROSS CANADA

Rumpa Chowdhury
Environmental Systems Engineering
Supervised by Dr. Kelvin Ng

This study assesses regional disparities in Empty Seeds and Pesticide Bags (ESPB) collection across Canadian provinces from 2015 to 2023. Grouping eight provinces by geographical and agricultural traits, it excludes British Columbia and Newfoundland due to absent programs. ESPB collection relative to GDP in agriculture tripled from 2015 to 2020, with Central provinces achieving the highest rates (73%-100%) and Atlantic provinces the lowest (0%-4%). Prairie provinces showed promising initial efficiencies (14%-25%). The findings underline the necessity for region-specific strategies to boost collection and recycling, given the sharp differences in regional collection efficiencies and agricultural outputs.

ABSORPTION AND DESORPTION ACTIVITIES OF AMINE SOLVENTS AT DIFFERENT CO2 CONCENTRATIONS AND THE DEVELOPMENT OF STRUCTURE-ACTIVITY RELATIONSHIPS USING MACHINE LEARNING MODEL

Kufre Archibong
Process Systems Engineering
Supervised by Dr. Raphael Idem

This study is focused on developing machine learning models for predicting the CO2 capture performance of amine solvents, which are typically challenging and expensive to determine experimentally. Forty amines were used for CO2 absorption and desorption experiment to generate experimental data under fixed conditions, and some structure – activity relationships were established. The result showed that machine learning models such as CatBoost, Linear Regression, and Gradient Boosting are successful in predicting CO2 capture activities of mines with high accuracy. These models offer a faster, cost-effective alternative for evaluating amine solvents in CO2 capture processes.

10:30-11:30: DATA BLITZ (CW 113)

ASHRAF ALSADAT MOUSAVI RINEH

COMBINATORIAL OPTIMIZATION AND CONSTRAINED PROGRAMMING FOR MODELING NEURONAL RESPONSE PATTERNS

SHARMIN JAHAN MIM

ANALYZING HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION AND MANAGMENT USING EFFICIENCY METRICS

TAHSIN AZIZ

DOES SIZE MATTER? EFFECTS OF COMMAND ICONS' SIZE VARIATION ON SPATIAL LEARNING OF COMMANDS IN GRAPHICAL INTERFACES

JAMES FROH

HEALTH LITERACY FOR SURVIVORS: ASSESSING THE VALUE OF SUPPORT GROUPS FOLLOWING LOCALIZED PROSTATE CANCER TREATMENT

MIR NABILA ASHRAF

DIGITAL HEALTH INTERVENTIONS IN OLDER ADULT POPULATIONS LIVING WITH CHRONIC DISEASE IN DEVELOPED COUNTRIES: A SCOPING REVIEW

COMBINATORIAL OPTIMIZATION AND CONSTRAINED PROGRAMMING FOR MODELING NEURONAL RESPONSE PATTERNS

Ashraf Alsadat Mousavi Rineh
Science
Supervised by Dr. Tim Oleskiw and Dr. Sandra Zilles

This project aims to model the visual neural cortex of the brain using machine learning methods, specifically focusing on the V1 and V2 areas. The objective is to develop a model that accurately simulates the neural activity in these regions by finding a set of weights that minimize the objective function which is the prediction mean square error. This is a combinatorial optimization problem because the model involves exploring numerous possible weight configurations to find the optimal solution. Given that the model uses a neural network, which is commonly applied in this area, it contains many weights, and each weight can take a wide range of values. As the network size increases, the number of possible configurations grows exponentially. Thus, the optimization process requires searching through this large space to find the best combination of weights. Additionally, the problem is a constrained optimization problem because the weights need to be both sparse and local. By the sparsity constraint the model should eliminate many weights, and locality ensures that neighboring neurons have similar weight values, reflecting the biological structure of the brain. By solving this problem, the project aims to create a more accurate and biologically realistic model of the brain's visual processing.

ANALYZING HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION AND MANAGMENT USING EFFICIENCY METRICS

Sharmin Jahan Mim
Environmental Systems Engineering
Supervised by Dr. Kelvin Ng

The proliferation of household hazardous waste (HHW) necessitates effective management strategies to mitigate environmental risks. Despite collection programs in industrialized nations, their efficiency remains underexplored. This study introduces two innovative metrics—Collection Ratio (CollectRat) and Recycling Ratio (RecylRat)- to evaluate HHW collection and recycling performance. Using predictive models, it identifies household characteristics, that influence HHW management programs. Results reveal higher collection rates in densely populated regions, while recycling remains underutilized. The study highlights the transformative potential of Extended Producer Responsibility (EPR) frameworks in enhancing public awareness and sustainable HHW practices across jurisdictions.

DOES SIZE MATTER? EFFECTS OF COMMAND ICONS' SIZE VARIATION ON SPATIAL LEARNING OF COMMANDS IN GRAPHICAL INTERFACES

Tahsin Aziz
Computer Science
Supervised by Dr. Md. Sami Uddin

Efficient command selection in GUIs relies on spatial learning, but dense interfaces hinder memorization. While external landmarks like color blocks aid spatial memory, they may not be feasible in cluttered interfaces. We investigated whether icon size variations enhance spatial learning through a controlled study (N=16) with four interfaces: Baseline, Baseline+Large, Baseline+Small, and Baseline+Mixed. Results showed spatial learning across all interfaces, with improved selection performance when icon sizes varied. Our findings highlight the role of icon size in spatial memory development, offering insights for designing GUIs that support efficient command selection.

HEALTH LITERACY FOR SURVIVORS: ASSESSING THE VALUE OF SUPPORT GROUPS FOLLOWING LOCALIZED PROSTATE CANCER TREATMEN

James Froh
Johnson Shoyama Graduate School of Public Policy
Supervised by Dr. Justin Longo

This study examines the benefits of prostate cancer support groups and how to enhance them for survivors. With rising survivorship, understanding health literacy's impact on long-term outcomes is vital. Key questions: 1) What benefits do survivors gain from support groups? 2) How can these groups be improved? Employing a health literacy framework, mixed methods include a survey and focus group with 10 survivors, as well as expert input from a nominal group technique interview. Policy implications focus on person-centered care, targeted health information, and support groups' role in healthcare. Findings may inform health literacy interventions to improve outcomes.

DIGITAL HEALTH INTERVENTIONS IN OLDER ADULT POPULATIONS LIVING WITH CHRONIC DISEASE IN DEVELOPED COUNTRIES: A SCOPING REVIEW

Mir Nabila Ashraf
Aging Studies
Supervised by Dr. Natasha Gallant

Globally, 80% of older adults aged 65 years+ one chronic condition, and 68% have two or more, necessitating accessible healthcare. The scoping review identifies available digital health interventions for chronic disease management for older adults in developed countries. Studies were eligible if they included older adults with at least one chronic condition living in developed countries Out of 13281 records 67 papers were included: telehealth (n=35), followed by mHealth (n=27), and eHealth (n=5). Major outcomes highlighted improved health outcome, feasibility, quality of life and lifestyle modification. Findings indicate need for evidence-based research to understand feasibility and limitations of digital intervention.

2:15-3:15: PAPER PRESENTATIONS (RIC 209)

STEPHEN DARKO

EMPIRICAL APPLICATION OF KINGDON'S THREE STREAMS THEORY TO THE SMALL MODULAR REACTORS DEPLOYMENT POLICY IDEA IN SASKATCHEWAN, CANADA

ALI MOLAEITABARI

BLOCKING AROMATIC AMINO ACIDS UPTAKE AND BIOSYNTHESIS: A NOVELANTI-CANDIDAL STRATEGY

ANGEL CHOW

"ELECTRIC VEHICLES DO NOT WORK IN THE WINTER": EXPLORING THE INFLUENCE OF MISPERCEPTIONS OF BATTERY ELECTRIC VEHICLES AND SOCIO-PSYCHOLOGICAL FACTORS ON ZERO-EMISSION VEHICLE ADOPTION WITH EMPIRICAL EVIDENCE FROM SASKATCHEWAN

BEN EGAN

BLOCKING AROMATIC AMINO ACIDS UPTAKE AND BIOSYNTHESIS: A NOVELANTI-CANDIDAL STRATEGY

EMPIRICAL APPLICATION OF KINGDON'S THREE STREAMS THEORY TO THE SMALL MODULAR REACTORS DEPLOYMENT POLICY IDEA IN SASKATCHEWAN, CANADA

Stephen Darko
Johnson Shoyama Graduate School of Business
Supervised by Dr. Margot Hurlbert

This study explores why the policy window is open for Small Modular Reactor (SMR) deployment as a climate change mitigation strategy in Saskatchewan. Using a case study approach and Kingdon's Three Streams Framework, it analyzes factors shaping climate and energy policies. Through document analysis and semi-structured interviews, findings reveal that increasing energy demand, emissions targets, SMR readiness, and strong political and public support align to enable policy action. The study offers insights into conditions influencing SMR adoption within broader energy and environmental sustainability goals. Keywords: Small Modular Reactors, Window of Opportunity, Climate Change, Saskatchewan, Kingdon's Three Streams.

BLOCKING AROMATIC AMINO ACIDS UPTAKE AND BIOSYNTHESIS: A NOVELANTI-CANDIDAL STRATEGY

Ali Molaeitabari
Chemistry and Biochemistry
Supervised by Dr. Tanya Dahms

Among Candida species, Candida albicans is the leading cause of candidemia and invasive candidiasis, which can lead to morbidity and mortality in immunocompromised patients. Growing resistance to existing anticandidal agents necessitates the discovery of novel antifungals and targets. Here, for the first time, we show how simultaneously blocking the aromatic amino acids biosynthesis through ARO1 gene repression, and disrupting aromatic amino acid uptake by carvacrol perturb C. albicans cell membrane and cell wall and prevent C. albicans biofilm formation. This dual antifungal attack is an interesting and effective strategy for combination therapy to help overcome antifungal resistance.

"ELECTRIC VEHICLES DO NOT WORK IN THE WINTER": EXPLORING THE INFLUENCE OF MISPERCEPTIONS OF BATTERY ELECTRIC VEHICLES AND SOCIO-PSYCHOLOGICAL FACTORS ON ZERO-EMISSION VEHICLE ADOPTION WITH EMPIRICAL EVIDENCE FROM SASKATCHEWAN

Angel Chow
Johnson Shoyama Graduate School of Public Policy
Supervised by Dr. Margot Hurlbert

This study aims to examine the influence of misperceptions of electric vehicles and socio-psychological factors on zero-emission vehicle adoption in Saskatchewan. Based on a sample of 590 Saskatchewan households, we find that attitude towards zero-emission vehicles, subjective norms and perceived behavioural control are statistically significant in influencing intentions to purchase electric and plug-in hybrid electric vehicles. Misperceptions negatively affect intention to purchase electric vehicles. Tendency to adopt solar panels is positively related to intentions to purchase electric and plug-in hybrid electric vehicles. Tendency to adopt heat pump is statistically significant in predicting intention to purchase plug-in hybrid electric vehicles.

BLOCKING AROMATIC AMINO ACIDS UPTAKE AND BIOSYNTHESIS: A NOVELANTI-CANDIDAL STRATEGY

Ben Egan
Earth Sciences
Supervised by Dr. Maria Velez and Dr. Ryan McKellar

Carbon isotopes have been used to reconstruct the diets of extinct animals; when applied to plant eating dinosaurs, carbon isotopes seem to falter, potentially suggesting dinosaurs possessed a unique dietary system. Our research suggests the carbon isotope values of ancient plants, rather than dinosaur dietary systems, is the cause of this misconception. By looking at fossil tree resins, amber, we see carbon isotope values which suggest that plants at this time shifted their isotopic values. By comparing amber and dinosaur remains at the same site we hope to quantify the magnitude of this shift and better reconstruct dinosaur diets.

2:15-3:15: PAPER PRESENTATIONS (CW 113)

BREEANN PHILLIPS
THE CELL FATE AND ELECTROPHYSIOLOGY OF NEURAL STEM CELLS UNDER HYPOXIA

YAREN KOCA
CROWDING THE FACE SPACE: THE ATTRACTOR FIELD HYPOTHESIS AND WITHIN-PERSON VARIABLITY

PARUL SACHDEVA
THE GERM GAME DESIGN FRAMEWORK FOR USER ENGAGMENT, RETENTION, AND MONETIZATION

HEMANTH REGI
JET BROADENING IN A VISCOUS NUCLEAR MEDIUM

THE CELL FATE AND ELECTROPHYSIOLOGY OF NEURAL STEM CELLS UNDER HYPOXIA

Breeann Phillips
Biology
Supervised by Dr. Buttigieg

Neural stem and progenitor cells (NSPCs) are a more differentiated stem cell line, capable of differentiating into neurons and glial cells. As these cells can repair damaged neuronal tissue, there is much interest in better understanding their basic physiology. Depending on the oxygen concentration, with 2.55-5% being physiologically normative, neural progenitor cells proliferate and alter their differentiation according to O2 availability. This population of cells exists in a perpetual balancing act of both differentiation and maintaining their overall self-renewing population. Lowered oxygen results in commitment to neuronal differentiation and the quiescence of stem cells.

CROWDING THE FACE SPACE: THE ATTRACTOR FIELD HYPOTHESIS AND WITHIN-PERSON VARIABLITY

Yaren Koca
Experimental and Applied Psychology
Supervised by Dr. Chris Oriet

While different faces share the same basic configuration (i.e., two eyes, a nose, and a mouth), there is great variation within different looks of one individual (e.g., lighting, facial expressions, or age) that needs to be amalgamated so we can recognize the people we know. How does the visual system reconcile differentiation and amalgamation for face recognition? In this study, we trained people to learn individuals' faces among people that look similar to them. We found that exposure to a face's variability among highly similar distractors yielded recognition performance that is worse than not having seen the face at all.

THE GERM GAME DESIGN FRAMEWORK FOR USER ENGAGMENT, RETENTION, AND MONETIZATION

Parul Sachdeva
Computer Science
Supervised by Dr. Howard Hamilton

This thesis presents the GERM framework to enhance user engagement, retention, and monetization in video games. The framework is named GERM—short for Game Engagement, Retention, and Monetization—to emphasize its primary focus on strengthening these three foundational areas. The framework elements are a Multi-Objective Goal Generator, Reward System, Timer Scheme, Social Dynamics, Enhancers, Obstructors, Monetization Design, Analytics Design, Impression Design, and Novelty. The framework was devised following experience in the video game development field, a comprehensive review of successful video games, and a study of the psychological factors relevant to game success.

JET BROADENING IN A VISCOUS NUCLEAR MEDIUM

Hemanth Regi
Physics
Supervised by Dr. Gojko Vujanovic

Heavy-ion collisions have reached energies high enough to melt the nucleus into its fundamental constituents, the quarks, and gluons, making a Quark Gluon Plasma (QGP). In addition to creating the QGP, these collisions can transfer large momenta to a small subset of quarks and gluons (also known as partons), thus promoting these partons to a highly excited state, which will subsequently radiate a collimated spray of particles called a jet. Jet showering has been studied extensively in electron-positron collisions where no QGP is formed (i.e. in the vacuum), thus making them a calibrated probe to study the QGP. Interactions between partons of the jet and the surrounding medium cause Brownian diffusion of the momentum of jet partons through collisions with the QGP, which is the main topic studied herein. Specifically, we compare the scattering rate and transverse momentum diffusion of jet partons within an inviscid as well as viscous QGP, thus allowing the use of jets to constrain the viscosity of the QGP.

3:30-4:30: DATA BLITZ (RIC 209)

KIMEYA ORIN

ORGANIZING FOUND INFORMATION IN PUBLIC DIGIRTAL LIBRARY SEARCH

ANGELE POIRIER

GOVERNANCE FOR RESILIENT FOOD SYSTEMS IN SASKATCHEWAN

KATIE ENGEL

UNVEILING BIAS: HOW CYBERSEX CRIME TYPE, VICTIM AGE, AND EDUCATION INFLUENCE JUROR PERCEPTIONS OF CYBERSEX CRIMES

JOHNNA PARENTEAU

SIMPLE + EXTREME = ONE (1)

SADAM ADEBAYO

ENHANCING THE EFFICIENCY OF COMPUTING CARBON-13 ISOTROPIC CHEMICAL SHIFT VALUES UNDER GIPAW DFT FOR POWDERED PHARMACEUTICALS

ORGANIZING FOUND INFORMATION IN PUBLIC DIGIRTAL LIBRARY SEARCH

Kimeya Orin
Computer Science
Supervised by Dr. Orland Hoeber

This research explores how public library searchers make sense of information during cross-session exploratory searches. We introduce a search interface with workspaces that enable searchers to organize and manage resources more effectively. By allowing users to create both top-level and nested workspaces, they can better plan and monitor their search activities. Generative AI generates summaries for both nested and top-level workspaces, enhancing users' ability to evaluate progress and the relevance of findings. This study examines how these features support searchers in conducting exploratory searches on assigned tasks, helping them manage complex information needs across multiple sessions.

GOVERNANCE FOR RESILIENT FOOD SYSTEMS IN SASKATCHEWAN

Angèle Poirier
Johnson Shoyama School of Public Policy
Supervised by Dr. Kathleen McNutt and Dr. Jim Farney

How resilient is Saskatchewan's food system? Our food system is incredibly complex, with multiple human, institutional, and ecological parts. We must study and understand this complex social-ecological system so that we can adapt to changes. My research will set out to understand the governance arrangements of Saskatchewan's food system, and see if we can learn lessons from other food systems which are resilient and adaptive. In this data blitz, you'll learn about resilient and non-resilient food systems, by the numbers. And, I'll give you tools to evaluate food-related statistics you might hear on the radio sometimes.

UNVEILING BIAS: HOW CYBERSEX CRIME TYPE, VICTIM AGE, AND EDUCATION INFLUENCE JUROR PERCEPTIONS OF CYBERSEX CRIMES

Katie Engel
Experimental and Applied Psychology
Supervised by Dr. Kaila Bruer

As technology advances, cybersex crime is simultaneously rising (Savage, 2024). Cybersex crimes are generally perceived by the public as less serious than contact sexual offences (Fissel & Lee, 2023), which can prevent victims from reporting these crimes (Cybertip, 2025). Research has called to educate the public on cybersex crime seriousness to mitigate the rising rates of cybersex crime prevalence (Fissel & Lee, 2023); however, no research has explored educational interventions. This study seeks to understand how the existing stigma held by adults is influenced by victim age and cybersex crime type, and whether exposure to education about cybersex crime alters those perceptions.

SIMPLE + EXTREME = ONE (1)

Johnna Parenteau
Mathematics
Supervised by Dr. Shaun Fallat

The most universal way to model data is to visually represent it as a graph. Since raw data is often perplexing, a set of numbers, called roots, is used to express patterns in the behaviours of the underlying data. Using the weighted matching polynomial to express the underlying data of a graph, the multiplicities of its roots play an important role in deciphering graphical properties. In this talk, we will introduce the concept of a multiplicity list and discuss how the multiplicity of the largest root plays a key role in understanding the connectivity of a graph.

ENHANCING THE EFFICIENCY OF COMPUTING CARBON-13 ISOTROPIC CHEMICAL SHIFT VALUES UNDER GIPAW DFT FOR POWDERED PHARMACEUTICALS

Sadam Adebayo
Chemistry and Biochemistry
Supervised by Dr Cory M. Widdifield

There is a need to develop new antibiotics as antimicrobial resistance will render presently used therapeutics useless. Developing new pharmaceuticals is a lengthy and expensive process (~1 billion dollars (CDN) / 10 years). My research centres around one aspect of this development process, which is characterizing the solid-state structure. Crystal structure determination is important but can be challenging at times. We seek to combine computational and experimental data and hypothesize that this will allow us to efficiently arrive at crystal structures while reducing resources required. In particular, we focus on carbon, as carbon atoms are omnipresent in pharmaceuticals

11:30-1:00: POSTER PRESENTATIONS (RIC ATRIUM)

CELYNE COOK

PALEO CLIMATIC CHANGES WITH DIATOMS IN A DRY ENVIRONMENT ECOSYSTEM FROM THE PATIA-1 AND PATIA-2 SWAMP LOCATED IN COLUMBIA

AMY WARK

ADULTS' AWARENESS OF COACHING IN CSA CASES

JOANNE LEXINE MANTES

SPATIAL AND TEMPORAL VARIATION IN TREE FALL RATES, DIRECTION, AND BIOMASS LOSS

ERIKA REICHEL

FACE MEMORY AND EXECUTIVE FUNCTION IN ADULTS

BAHAR SADEGH EHDAEI

EFFECT OF 12 WEEKS EXERCISE AND LIFESTYLE MODIFICATION PROGRAM ON THE APPETITE RESPONSIVENESS TO AN ACUTE BOUT OF EXERCISE IN TYPE 2 DIABETES INDIVIDUALS

PAIGE SIVELL

THE SUITABILITY OF INTERNET DELIVERED COGNITIVE THERAPY FOR SUBTHRESHOLD PUBLIC SAFETY PERSONNEL (PSP)

POSTER PRESENTATIONS

JOHNNA PARENTEAU

DETECTING "MATCHES" USING COMPANION TESTING

AMIR YAHYA RAJAEI

EFFECTS OF CANNABIDIOL ON HUMAN MOTOR CORTEX CIRCUITRY

JORDYN GUNDERSON

DECORATING PHENALENE: AN APPROACH TOWARDS BENZANNULATED PEROPYRENES

ZAID ISMAIL

INDIGENOUS TRADITIONAL PLANTS AND THEIR MEDICINAL PROPERTIES

PALEO CLIMATIC CHANGES WITH DIATOMS IN A DRY ENVIRONMENT ECOSYSTEM FROM THE PATIA-1 AND PATIA-2 SWAMP LOCATED IN COLUMBIA

Celyne Cook
Geology
Supervised by Dr, Maria Velez

We are using core samples from the early and middle Holocene to decipher why this area was a dry environment ecosystem. We are looking at diatoms and seeing what caused these changes by seeing different genes of diatoms and how they survived or didn't. Types of rocks found were Pyroclastic flows, limestone and clay stone were indicated at the sight and can help to determine what was happening. We also know this area is affected by El Niño and the inter tropical convergence zone which also makes it a very interesting area for a dry environment ecosystem.

ADULTS' AWARENESS OF COACHING IN CSA CASES

Amy Wark
Psychology
Supervised by Dr. Kaila Bruer and Shaelyn Carr

CSA victims often withhold disclosure, with the perpetrator coaching the child to deny the abuse being a prominent contributor to this secrecy (Kellog, 2016; Münzer et al., 2016; Schaeffer et al., 2011). Coached reports are suggested to be believable because of their consistency, while CSA victims are perceived as credible by adults (McCauley & Parker, 2001; Nunez et al., 2011; Gillingham, 2023). Taken together, this suggests that a child coached to deny sexual abuse would be perceived as highly believable. However, believability may be influenced by their relation to the perpetrator. This study explores how adults' perceptions of CSA victims differ as a function of their consistency of statements throughout questioning and their relationship to the perpetrator.

SPATIAL AND TEMPORAL VARIATION IN TREE FALL RATES, DIRECTION, AND BIOMASS LOSS

Joanne Lexine Mantes
Biology
Supervised by Dr. Mark Vanderwel

This research investigates how tree fall rates, direction, and biomass loss vary over time and space in relation to wind, stand density, and species composition in Cypress Hills Interprovincial Park. Using UAV imagery and allometric equations, I will analyze tree falls from 2016-2023 to assess how factors like wind speed, species diversity, and topography influence tree fall patterns and biomass loss. Findings will improve our understanding of the various factors affecting forest dynamics to predict tree falls.

FACE MEMORY AND EXECUTIVE FUNCTION IN ADULTS

Erika Reichel
Psychology
Supervised by Dr. Kaila Buer

We measured Face Memory and Executive Function (EF) in adults to examine how individual differences may impact facial memory. Measures of working memory, inhibitory control, and metamemory were used to measure executive function. Face memory was measured with an old/new facial memory task. Results showed a statistically significant F change on one of the working memory tasks, the List Sorting Working Memory Test (LSWM). This is likely because of the use of the visual working memory system required for the LSWM. This research has the potential to inform other memory research.

EFFECT OF 12 WEEKS EXERCISE AND LIFESTYLE MODIFICATION PROGRAM ON THE APPETITE RESPONSIVENESS TO AN ACUTE BOUT OF EXERCISE IN TYPE 2 DIABETES INDIVIDUALS

Bahar Sadegh Ehdaei
Biology
Supervised by Dr. Julia Totosy de Zepetnek and Dr. Andrew Cameron

This study explores the effects of exercise on appetite regulation in individuals with type 2 diabetes (T2D). It examines how episodic gut hormones (acyl-ghrelin and active GLP-1) respond to acute moderate-high intensity exercise and their correlation with insulin, glucose, lactate, IL-6, and BDNF. Participants in a 12-week Diabetes Wellness Series will undergo blood sampling pre- and post-exercise to analyze hormone changes. Subjective appetite ratings, dietary intake, and body composition will also be assessed. Statistical analyses include repeated-measures ANOVA and correlation testing to evaluate intervention effects on appetite signals and metabolic responses, providing insights into exercise's role in appetite control.

SUITABILITY OF INTERNET-DELIVERED COGNITIVE THERAPY FOR SUBTHRESHOLD PUBLIC SAFETY PERSONNEL (PSP)

Paige Sivell
Clinical Psychology
Supervised by Dr. Heather Hadjistavropoulos and Dr. Jill Price

Public safety personnel (PSP) face a high risk of developing mental health challenges due to frequent exposure to potentially psychologically traumatic events (PPTEs). Subthreshold PSP, who experience symptoms that do not meet diagnostic criteria, may benefit from proactively using mental health programs such as the PSP Wellbeing Course, an internet-delivered cognitive behavioral therapy (ICBT) program tailored for PSP. This mixed methods study examines the suitability of the PSP Wellbeing Course for subthreshold PSP by investigating engagement, symptom changes, resilience improvements, treatment satisfaction, and client feedback. Quantitative data from pre-existing clients will be analyzed using descriptive statistics and one-sample t-tests, with Hedges' g reported for effect sizes. Qualitative data from semi-structured interviews with current clients will be analyzed using reflexive thematic analysis to gain insights into their experiences and feedback. Findings are anticipated to inform ICBT development for subthreshold clients and highlight its potential as a proactive mental health resource for PSP.

DETECTING "MATCHES" USING COMPANION TESTING

Johnna Parenteau
Mathematics
Supervised by Dr. Shaun Fallat

(No abstract submitted)

EFFECTS OF CANNABIDIOL ON HUMAN MOTOR CORTEX CIRCUITRY

Amir Yahya Rajaei
Kineseology and Health Studies
Supervised by Dr. Cameron Mang

Cannabinoids impact the nervous system which leads to potential applications for pain management. Studies using transcranial magnetic stimulation (TMS) indicate that cannabis use and chronic neuropathic pain are linked to changes in excitatory and inhibitory neural circuits in the human motor cortex. Yet, no prior research has specifically considered the effects of cannabidiol (CBD), a key compound in the cannabis plant, on human brain excitability. The purpose of this work is to determine whether oral administration of CBD influences the excitation and inhibition in the human motor cortex. The research is part of a larger dose-escalation placebo-washout study of CBD administration in young, healthy male contact sport athletes.

DECORATING PHENALENE: AN APPROACH TOWARDS BENZANNULATED PEROPYRENES

Jordyn Gunderson
Chemistry
Supervised by Marc MacKinnon

Peropyrene and graphene fragments, in general, have generated considerable interest due to their electronic and optical properties. One synthetic approach for the synthesis of peropyrene systems is through selective dimerization of phenalenyl radicals followed by oxidative coupling and aromatization. This talk will highlight recent progress and discuss the formation of interesting intermediate olympicene derivatives.

INDIGENOUS TRADITIONAL PLANTS AND THEIR MEDICINAL PROPERTIES

Zaid Ismail
Organic Chemistry
Supervised by Dr. Vincent Ziffle

Observing the medicinal properties of traditional Indigenous plants reveals specific chemical compounds, such as flavonoids, that are present in modern medicine. These compounds are extracted from the plants and tested against particular pathogens to observe how they eliminate them and what pathogens they eliminate. The Indigenous Elders have kindly shared their knowledge and are responsible for knowing which plants to observe precisely and what healing properties they may contain. Sharing their traditional uses of the plants has helped foster a respectful relationship between contemporary sciences and Indigenous knowledge.

THANK YOU

We hope that you have enjoyed attending our symposium as much as our team has enjoyed putting it together! The *INSPIRE Research Symposium* started as a simple idea. Our team was entirely unsure of how much engagement and how successful it would be. Needless to say, we are *blown away* by the level of engagement from the students, faculty members, supervisors, and other professional staff.

First, we would like to say a huge and special thank you to **all the presenters**. Simply put, without you, this symposium would not have been a success.

We would also like to thank our keynote speaker **Dr. Emily Duncan**. Thank you for sharing your knowledge and guidance with everyone. Your academic success is a strong motivation for students.

Thank you to **Dr. Chris Oriet** and **Dr. David de Montigny** for your presentation on continuing graduate studies at the University of Regina.

We would also like to extend a huge thanks to the **Faculty of Graduate Studies and Research** and the Dean, **Dr. Aziz Douai**. Without your continued support and guidance, this *INSPIRE Research Symposium* would not have happened.

We would also like to thank Dr. Chris Yost for your support and your remarks.

This concludes the second *INSPIRE Research Symposium.* Stay tuned for more future events from **INSPIRE!**

Best wishes,
The INSPIRE Team

University of Regina

Go far, Together.

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