

UNBC 2023

Research Week

Feb. 27 - Mar. 3

Learning Through Research



Monday, February 27

Research Week Welcome and Keynote Address

10:00 am–11:30 am | Bentley Centre 7-170/172

Lheidli T'enneh First Nation Welcome
Elder Darlene McIntosh

UNBC Welcome and Opening Remarks
Dr. Kathy Lewis – Interim Vice President Research and Innovation

Keynote Presentation – Using Strengths-Based Indigenous Research Methodologies: Addressing Climate Change during the COVID-19 Pandemic by TI'etinqox and Qwelminte Secwépemc Researchers

Speakers

Dr. Darlene Sanderson (UNBC Associate Professor, Chair, Indigenous Environmental Health)
Tamara Archie (Qwelminte Secwépemc Research Team)
Lynn Morrison (Qwelminte Secwépemc Research Team)
Blaine Grinder (TI'etinqox Researcher)
Paul Grinder (TI'etinqox Researcher)

Additional speakers online

Angelina Stump (TI'etinqox Research Team)
Dr. Johanna Sam (Assistant Professor, Faculty of Education, UBC), Patsy and Noeman Mirza

Detailed speaker bios available on our website.

This presentation will have an interactive panel of community-based researchers from TI'etinqox and Qwelminte Secwépemc Nations, describing their research experience. The COVID-19 pandemic and the associated restrictions have exacerbated the impacts of climate change issues on the health and well-being of Indigenous peoples. By using Indigenous research methodologies (IRM) with a strengths-based approach, our research reveals (1) the complex interplay between climate change, the COVID-19 pandemic, gender and intersectional perspectives, and health; (2) how this complexity has impacted Indigenous peoples' response to climate change refugees or evacuees; and (3) what sustainable community-led solutions be suitable for the current and future pandemics and health emergencies.

This is done through the direction and engagement of TI'etinqox and Qwelminte Secwépemc peoples. TI'etinqox and Qwelminte Secwépemc community members are the leads in designing and conducting the research, currently evaluating the outcomes, and will disseminate the research findings according to their culture. The communities control how the information will be used, archived or shared.

Break

11:30 am–11:45 am

Lunch and Learn – Public Panel BC Living Labs and On-Farm Climate Action Fund Program

12:00 pm–1:30 pm | Conference Centre 6-205

Lunch will be served beginning at 11:45 am

Panelists

Dr. Michael Preston (UNBC Assistant Professor)

Dr. Theresa Adesanya (UNBC Assistant Professor)

Dr. Jillian Bainard (Research Scientist, Agriculture and Agri-Food Canada) - virtual

Moderated by Serena Black, BC Forage Council.

Welcoming all researchers, students, farmers and ranchers to the Forage and Cattle Living Lab session on Extended Grazing Season and Winter-Feeding Strategies. The Living Lab project is a collaboration between UNBC researchers, TRU researchers, Agriculture and Agri-Food Canada and Forage and Cattle producers. Living labs create the opportunity for agricultural practices and technologies to be tested in the context and scale in which they will be adopted: on local farms under real agricultural production conditions. Our B.C. Forage/Cattle Living Lab is part of a larger provincial and National program focused on reducing greenhouse gas emissions and strengthening the climate resiliency of our nation's food systems.

This session will include a panel presentation featuring project partners and experts in the field, a discussion/Q&A period, followed by some time for networking and snacks post-discussion. Our panelists will share their knowledge and experience with the following grazing practices, and strategies to assess these practices for their effects on GHG emissions and soil carbon. The practices are: 1) Annual and/or Alternative Forage Cover Crops for Fall-Winter Grazing, 2) Standing Crop for Winter Grazing, 3) Fall Cover Crops for Extended Fall or Spring Grazing and 4) Bale grazing.

FISSSH Research Showcase: Motherhood and Matrifocality

1:30 pm–3:00 pm | Bentley Centre 7-170/172

Every human life was born from a woman and that unites us as a species: we all spent a period of about forty moons developing inside a person's womb. Because humans need intense care after birth and with the traditional patriarchal sexual division of labour, we spent the first moments of our extrauterine lives being cared for by a woman. In this relationship, meanings about motherhood are made, individually and collectively. In contemporary times, a series of norms about what it is, how and when to be a good mother has been historically crystalized into a compulsory, normative and naturalized path for women.

Motherhood studies indicate, on a different note, that it is a social and diverse phenomenon that should be studied where, how and by whom lives it, because what regulates its practice are local doings, knowledge, and technologies. Along these lines, this themed session will explore motherhood cross-culturally discussing the differences between the social imperative described as the patriarchal institution of motherhood and the mothering experiences of becoming. As an institution, motherhood is fixed through the repetition of acts, determined by cultural reproduction and expectations, enacted through sexual differences, social technologies, linguistic codes, and cultural representations. As a practice, maternal needs and concerns are the starting point for new meaning-making from women's experiences and are driven by ongoing actions with attention to the diversity of everyday practices and new skills that can be performed by anyone who identifies as a mother.

Presentations

1. "Mothering in transition houses: The Canadian plague", Chinedum Adebomi
2. "Single mothers' perspectives on the combination of motherhood and work", Grace AnaneNimako
3. "Borderland mothering, biosociality and diagnostic odysseys of Tay-Sachs disease: 'how I could walk without the earth opening up beneath my feet'", Júlia Campos Clímaco
4. "How foreign mothers in Canada continue with their cultural practices of mothering", Piumi Lakchani
5. "Motherhood representation in Bollywood's movies: a feminist perspective", Prapti Sarkar
6. "Access to justice for low to middle-income single mothers in British Columbia: A provincial policy review on government legal aid and recommendations for post-pandemic planning (2019 and beyond)",

Vibusha Madanayake

7. “Outcomes of the social constructions of motherhood upon single women”, Victoria Awodele

Poster Presentations – Session 1

3:00 pm–4:30 pm | Bentley Centre

Research Institute Exhibits will also be available for viewing in the Bentley Centre Alcove (Alumni Lounge)

Cameron Aird, MSc student, School of Health Sciences

Perceptions of Physical Activity in Indigenous Populations: A Narrative Review

Carmen Huang, Northern Medical Program student, Medicine

Cleft Palate Pathway Quality Improvement Project

Christiana Onabola, PhD candidate, School of Health Sciences

Ecosystem Impacts and Mental Health Risk in a Hydroelectric Dam Context: A Situational Analysis through the Lens of the SDGs

Connor Johnson, MSc student, Biochemistry

Optimization of Extracellular Vesicle Isolation Methods for Proteomic Studies

Hamza Nadeem, BSc student, Division of Medical Sciences, Biochemistry

The Effects of Mushrooms on Neural Cells

Hedieh Sarfjoo Kasmaei, MSc student, Health Science

XCO's Frailty Care System

Jason Morris, Senior Instructor, Political Science

Political Science 320 Canadian Politics and Policy Classroom Project

Jihanne Louise Sayson Dumo, Research Skills Development Trainee, School of Health Sciences

Context-Specific Programs and Strategies that Support Physical Activity in Rural and Northern Communities: An Environmental Scan

Jonathan Doyon, MSc student, Health Sciences

Learning to Bridge Knowledge Systems: Insights from a Scoping Review of Health Indicators in Indigenous Community Contexts

Serena Sanghera, BSc student, Division of Medical Sciences, Biochemistry

Epigenetic Regulation in Neurodevelopment

Benjamin Spitz, PhD candidate, Natural Resources and Environmental Studies

*Risk Assessment of Winter Tick (*Dermacentor albipictus*) Infestation on Moose (*Alces alces*) in British Columbia*

Sohail Akram, PhD student, Natural Resources and Environmental Studies

Impact of Stand Heterogeneity on the Resilience of Drought, Fire and Insect Outbreaks in Interior and Northern BC Forest

Mary Benoit, BSc student, Biochemistry and Molecular Biology

A Literature Review of Biodegradation of Polycyclic Non-Steroidal Anti-Inflammatory Drugs in Wastewater by White-Rot Fungi

Brendan Jacques, BHsc student, Department of Health Sciences
Physical Literacy Implementation Within Communities: An Evaluation of Sports Programs

Jessica Rylee Woskett, MA Student, Natural Resources and Environmental Studies; Outdoor Recreation, Conservation, and Tourism
Angler and Non-Angler Preferences and Diversity in the Omineca Region of Northern British Columbia, Canada

Kaylee Barnes, Research Assistant and student, Geography, Earth and Environmental Sciences
Assessing Thermal Habitat Conditions in The Parsnip River Basin, British Columbia

Kirsten Ward, PhD student, Department of Health Sciences
Barriers and Facilitators of Physical Activity in Rural Communities of Northern and Interior British Columbia, Canada

Mitzhilouise S. Baylous, MSc student, Biochemistry
Co-Cultivation of Fusarium Phytopathogens and Bacterial Isolates from Northern Dendroctonus Bark Beetles to Determine Novel Agrochemicals

Amy Klepetar, PhD student and Senior Instructor, School of Health Sciences/School of Nursing
The Missing Piece: Challenges of Environmental Health Research in Small Towns and Rural Areas

Tuesday, February 28

FISSSH Research Showcase: Research in Gender and Indigenous Studies

9:00 am–10:00 am | Bentley Centre 7-170/172

Panel Moderator: Dr. Kevin Hutchings, Professor, Department of English

There's Something Squishy about Mary

Alex Wagstaffe, UNBC Department of English sessional instructor; PhD candidate, McMaster University

In the twenty-first century, the issue of gender, societal experience of gender, and gender identity is at the forefront of social justice thinking. In the eighteenth century, gender and experience of gender is no less important and just as fraught as it is in today's "modern" era. I propose to explore what modern ideas of femininity and being female entailed during the eighteenth century through the analysis of Mary Robinson's poetry.

Specifically, I will be researching the complex interplay between female gender, concepts of nature and the environment, and the Gothic. I will focus on the poem "The Poor Singing Dame" and discuss how gender and identity function in a patriarchal domestic place versus in a natural or "green" environment. My argument will focus on the suggestion that through solidarity with nature, the female character's identity is not compromised. Further, Gothic vengeance allows this woman justice in an otherwise hostile patriarchal environment.

Canoe and Canoeing: Indigenous Resistance, Cultural Resurgence, and Identities

Alexandre Dantas e Sousa, MA student, Department of First Nations Studies

This research intends to focus on Indigenous resistance to colonialism and cultural resurgence experiences, taking into consideration the historical consequences and present-day threats of colonialism, examining one of the most iconic Indigenous cultural technical objects and experiences, the canoe(s), and the practice of canoeing. Canoes and canoeing, although affected by colonialism, have been a form of resistance by keeping and reviving the tradition of its production and the practice of canoeing together. Some Indigenous resurgence movements have the canoe as one of their main symbols and practice.

It has been a technical object made and used across what is now known as Canada for different peoples and cultural traditions. This presentation will focus on the canoe and canoeing material and symbolic relevance and its meanings and place within Indigenous knowledge systems. Examining the cultural process of making the canoe and canoeing together can shed light on local knowledge, material, and cultural heritage. Since the choice of the tree and the making of the canoe, there are cultural opportunities to transmit – and rebuild – knowledge and emic meanings, sharing and enjoying the trip: that is, the relationships that happen both when producing the canoe and in its use.

Land Acknowledgments: Enacting the Four R's

Cheri Brown, Department of First Nations Studies

Land acknowledgments prior to public events and other gatherings have become commonplace in Canada in present day, particularly in academic settings. Some feel this practice is merely a formulaic, empty gesture, while others believe it is beneficial. Twenty years ago, or even ten years ago, land acknowledgments were essentially unheard of. The Truth and Reconciliation Commission (TRC) and its 94 calls to action in 2015 created impetus for organizations including educational institutions for this and other reconciliatory acts, increasing their prevalence. As they have gradually become fairly standard protocol, critiques have arisen, by both Indigenous and non-Indigenous parties who feel that land acknowledgments are lacking in

some important ways.

Some find land acknowledgments to be helpful overall despite concerns about the details of how they are performed (Hergesheimer, 2016; Weston, 2021), whereas others find them inadequate or even call for outright refusal (Wark 203). This paper examines this argument, taking the position that land acknowledgments should continue to be performed in academic and other spaces, as they constitute a key aspect of reconciliation. The four R's of Indigenous research, of respect, relevance, reciprocity, and responsibility, provide a meaningful, culturally-based and appropriate theoretical framework with which to understand and enact land acknowledgments to ensure integrity and value of the practice rather than the increasingly common and problematic performative approach (Kirkness and Barnhardt 1).

Bemwewegiizhigokwe/Jane Johnston Schoolcraft: “On leaving my children John and Jane at School, in the Atlantic states, and preparing to return to the interior,” 1839

Dr. Kevin Hutchings, Professor, Department of English

In 1839, the famous American Indian agent and ethnographer Henry Rowe Schoolcraft, overruling the wishes of his Irish-Anishinaabe wife, Bemwewegiizhigokwe (Jane Johnston Schoolcraft), enrolled his children in boarding schools in Philadelphia and Princeton to ensure that they would learn the ways of the white man. Recording her response to this life-changing separation from her children, Bemwewegiizhigokwe wrote a short poem in Ojibwemowin, becoming in the process one of the first Indigenous literary authors on Turtle Island to write about the adverse effects of residential schooling.

My paper will examine a recent English-language translation of this poem while also briefly tracing the ideological foundations of Canada's Residential School system to contemporary writings by the prominent Anglican cleric and educator John Strachan (founder of the University of Toronto), who advocated the commencement of an “experiment” that would remove Indigenous children from their families in an effort to assimilate them into British-Canada's mainstream settler society.

Break

10:00 am–10:15 am

MATTER (Materials Technology & Environmental Research) Team Presentations

10:15am–11:30 am | Bentley Centre 7-170/172

CO₂ Cycloaddition of Propylene Oxide via Novel Nano Composite of Zeolite/ZIF

Hossein Zeinalzadeh, MSc student, Natural Resources and Environmental Studies – Environmental Science
This research demonstrated the successful use of ZIF-8 and SAPO-34 to fabricate novel composite. The epitaxial growth method led to the preparation of Z/S a catalyst. Synthesized catalysts were characterized by XRD, SEM, BET, and FTIR. It was found that Z/S75 acted as a suitable catalyst for the fabrication of propylene carbonates. The creation of Z/S composites led to an increase in conversion values, an increase in surface area, acid and active sites, and a long lifetime. In this study, TBAB was proposed as a possible co-catalyst for CO₂ cycloaddition reactions.

An experimental design was used to optimize the operational factors. The 90.9% of conversion was acquired at the pressure of 120 psi, and temperature of 100 °C at 240 min. Meanwhile, the catalytic activity was tested at the same conditions for six cycles, indicating a long lifetime of synthesized composite.

Using of Taguchi and Box Behnken Methods to Optimize Effective Parameters of alkaline fusion synthesis of zeolite X from Tunisi

Leila Doudey, Visiting Researcher, Chemistry

In Tunisia most of the dams have experienced siltation phenomena. Technology based on sediment dredging has been widely applied because it could fundamentally save dams. Consequently, the production of a lot of sludge and their disposal has become urgent problems to be solved. Therefore, this study aims to develop an innovative measure to solve this waste disposal problem by means of synthesizing zeolites from dredged sediment. The sediment used in this study was purchased from Lebna dam which was constructed in 1986 and located within an agricultural area in the northern part of the Cap Bon Peninsula.

Its initial capacity was 30 million m³ which reached 10.2 % of its fullness in January 2023. The main minerals phases present in this sediment are illite, kaolinite, calcite and quartz. The XRF results showed that the silica reached an amount of 81.3 wt.% in Lebna sediment which seems useful for the synthesis of zeolites. Alkaline fusion followed by hydrothermal reaction was implemented to synthesize zeolite faujasite X. Taguchi Orthogonal Array design consisting of 9 trails was carried out to optimize the alkaline fusion part conditions. The operational parameters considered were the melting temperature (750-850°C), melting duration (30-120 min), activator type (NaOH, Na₂CO₃ and NaOH/Na₂CO₃) and sediment type (raw sediment calcinated sediment at 850°C and acid leached sediment). Acid solubility was used to evaluate the efficiency of alkaline fusion. Then the optimized alkali-fused FA was dissolved in water and the experiment conditions were designed by the Response Surface Methodology (RSM).

The three factors which have been adopted were L/S ratio (10-20), crystallization temperature (60-90°C) and time (4-7 days). The Box-Behnken design was used with different levels of the factors, showing over its influence on yield percent of Zeolite X. The products were characterized using the Rietveld Refinement method. It was found that the optimum mix design with L/S ratio of 15, crystallization temperature of 75°C for 4 days produced the highest content of zeolite X. The optimum sample was characterized by X-ray diffraction, N₂ adsorption-desorption isotherm and thermogravimetric analysis (TGA). As a result, this dam sediment exhibits good zeolitization potential that leads to high amount of zeolite X.

Green and Facile Synthesis of a Novel Hybrid Biopolymer Metal-Organic-Framework for pH-Controlled Drug Release

Dr. Hoorieh Jahanbani, Postdoctoral Fellow, Department of Chemistry

The modified metal organic frameworks (MOFs) using alkali lignin as a biopolymer can be used as a promising carrier for drug delivery applications. In this work, we demonstrate a one-pot and green approach to synthesize a hybrid polymer/HKUST-1 nanocomposite using alkali lignin as a novel pH-responsive biopolymer nanocarrier for the oral delivery system. The drug loading capacity and drug-controlled release of HKUST-1 and L/HKUST-1 were examined using ibuprofen (IBU) as an oral drug model. L/HKUST-1 nanocomposite demonstrated pH-responsive behavior in the drug release tests while advanced drug stability at low pH like gastric medium and regulated the drug release at pH range of 6.8-7.4 similar to intestinal pH. The results reveal that the L/HKUST-1 could potentially function as an oral medication delivery carrier.

Sustainable and Plant-based Foam Composites

Dr. Nasim Ghavidel, Postdoctoral Researcher, Natural Resources and Environmental Studies

The Canadian packaging manufacturing market is currently estimated at a value of \$25 billion and is predicted to grow to \$31 billion by 2025. This includes the polystyrene foam trade, which is currently valued at \$135.3 on import and \$199.9 on export based on the Summary of Canadian Industry Statistics – 2019. Development and production of bio-based packaging foam originating from plants as a biodegradable resource will partially replace the existing significant market for oil-based expanded polystyrene (EPS) materials, which remain intake for decades causing significant environmental issues. In this research project, the aim is to formulate bio-polymer beads that can replace the existing EPS beads for the production of sustainable foam packages. This will substantially reduce the amount of waste, particularly in the seafood packaging industry, to improve land, air, and water quality in Canada and worldwide.

Designing of MOFs SPME Fiber for Environmental Technology

Fatemeh Nouroozi, PhD student, Natural Resources and Environmental Studies

Zirconium containing metal organic frameworks are a group of stable MOFs that has been selected to use in SPME coating as a novel SPME fiber for analysis of TVOCs. The Fiber designed using active adsorbent Metal Organic Frameworks engineered to reduce sampling time and to avoid high temperature treatment of fiber during analysis. Adsorption of TVOCs on commercial SPME fiber is based on polarity and physical interaction between adsorbate and adsorbent. Engineered porous structure of Metal organic frameworks (MOFs) can actively interact with TVOCs with a chemical interaction, reducing sampling duration and increasing its selectivity to take desired contaminant from complex matrix. To the best of our knowledge, using active adsorbent MOF as SPME tool is a novel and unique idea. Coating of Zr containing MOF on an electro-etched engineered surface of stainless steel fiber is applicable for analysis of four different VOCs using head space sampling method.

Break

11:30 am–11:45 am

Presentations – Cultural Safety, Truth and Reconciliation, and Positive Psychology

11:45 am–12:45 pm | Bentley Centre 7-170/172

Auntie-Work: Generational Healing

Vanessa Mitchell, PhD student, Health Sciences

In the disciplines of health and education there is a sense of recognition that every person has a role to play in relation to reconciliation and cultural safety. As settler sectors are being called to move beyond talking to taking real action, demands for both cultural safety and reconciliation training and education within settler sectors are increasing. My research is centred upon (re)connecting to the essence of Auntie as a way to decolonize and mitigate risks of contemporary colonial institutions that now asking Indigenous peoples to fix the harms inflicted and caused by Euro-white-settler coloniality. The central question of my doctoral research is thus: “How can Auntie-work foster wellness for Indigenous womyn during a time of increased pressure and demand on them by non-Indigenous settlers looking to advance cultural safety and reconciliation training and education within colonial spaces?”

My approach is to centre Indigenous principles of storywork (Archibald, 2008) and of enowkinwixw (Armstrong, 2008). My research also embraces the concept of “Auntie,” a concept that has deep resonance within Indigenous families and communities, which encompasses knowledge and caring and leadership and guidance, and is a concept that is not clearly understood or amply written about outside Indigenous circles. The intention of my research is to explore through conversation and the art of visiting what it means to embrace the essence of Auntie as an Indigenous womyn leader navigating colonial systems.

Be/Cause You Care Box: A Northern BC Cultural Humility Curriculum Pilot Project Embracing Creative Practices, Self-Reflection, and Good Ol’ Snail Mail

*Marion Erickson, Research Manager, Health Arts Research Centre; Lisa Striegler; Dr. Sarah de Leeuw; Kelsey Chamberlin; Katriona Auerbach**

Who doesn’t love getting a beautiful goody-filled box in the mail? Who amongst us doesn’t want to expand our understandings about combatting anti-Indigenous racism and strengthening our cultural humility skills? Especially in these times of Truth and Reconciliation (TRC) Calls to Action, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and the 2021 In Plain Sight Report. These are the broadest

underlying assumptions of the Be/Cause You Care Box, a project piloted by the Health Arts Research Centre (HARC) in the Northern Medical Program, a distributed site of UBC's Faculty of Medicine at the University of Northern British Columbia. Begun in 2020, and funded by UBC's Faculty of Medicine, Northern Health, and Indigenous Services Canada, the Be/Cause You Care Box is designed for healthcare learners and professionals, of all levels, who are committed to learning about Indigenous peoples, communities, and healthcare needs – including how Indigenous health is negatively impacted by coloniality and anti-Indigenous racism.

The boxes are filled with creative and educational activities that are low-barrier, self-directed, tangible, and supportive. This presentation, where examples of the box will be on display for “show and tell,” leads participants through the process of designing and peer-reviewing the boxes, crafting the box content, producing creative pieces of the curriculum contained in the box, and then sending out and receiving feedback on the box. Box production and evaluation have undergone diverse research and assessment, all of which participants will also learn about.

*Our diverse authorship team is comprised of Indigenous and non-Indigenous members of the Health Arts Research Centre (HARC), located on unceded traditional territory of the Lheidli T'enneh, part of the Dakelh (Carrier) nation.

A Healthier Way to Frame Pandemics: The Use of Conceptual Metaphor in COVID-19 Discourse

Leah Chambers, Lecturer, Department of Psychology

The impact of conceptual metaphors on our cognition epitomizes the power of language. Conceptual metaphors allow us to understand novel ideas by expressing them in terms of simpler or more familiar concepts. In particular, various ailments, diseases, and pandemics are often conceptually framed as “war” (consider the sentence: “He lost his battle to cancer”). However, linguists, medical professionals, and cognitive scientists have been calling for new ways to frame the recent COVID-19 pandemic because the extensive usage of such metaphors exerts adverse effects on people's well-being and coping strategies. Our empirical study takes a psycholinguistic approach and implements positive psychology tools to examine these concerns.

Break

12:45 pm–1:00 pm

Special Presentation – Learning Together About Koh: Reflections from the ‘Koh-Learning in our Watersheds’ Program

1:00 pm–2:30 pm | Bentley Centre 7-170/172

Featuring School District 91 student voices!

Presenters: Dr. Margot Parkes, Tavia McKinnon and School District 91 students

The Koh-Learning in our Watersheds program is a collaboration between UNBC and School District 91–Nechako Lakes (SD 91) that aims to connect SD 91 students with each other, their communities, and their local waterways through hands-on outdoor learning. Koh (waterways in Dakelh) provides a central, connecting focus that brings together students, educators, researchers, and local community members in unique learning environments throughout SD91 catchment, the Nechako watershed and beyond. Join UNBC's Koh-Learning team for a session of reflections on our learning about, with, and from our waterways, including the perspectives of SD 91 secondary students on their experiences contributing to research projects here at UNBC.

Break

2:30 pm–2:45 pm

Presentations – Mental Health, River Restoration, Geotechnical Engineering, Predation Risk, COVID-19 ICU Model, and On-Site Water Solutions

2:45 pm–4:15 pm (concurrent session) | Bentley Centre 7-170/172

Mental Health Outcomes and Psychosocial Risk Factors in Wildland Firefighters and Support Staff

Alex Lane, MSc student, Psychology

Mental health injuries were among the top three injuries reported by BC Wildfire Service (BCWS) employees in 2021 (BC Wildfire Service, 2022), yet research on wildland firefighter mental health in British Columbia (BC) is sparse. Non-suppression staff, who make up a large proportion of the wildland firefighting workforce, are excluded from the research narrative. High rates of suicidality (Stanley et al., 2018; O'Brien & Campbell, 2021), post-traumatic stress disorder (PTSD), depression, anxiety, binge drinking, heavy alcohol use, and heavy smokeless tobacco use have been identified in US wildland firefighters compared to both structural firefighters and the public (O'Brien & Campbell, 2021).

Significant differences between US wildland fire response agencies and BCWS in terms of organizational structure, crew structure, and wildland fire response limit the generalizability of research findings from the US. Existing literature also overlooks non-suppression support staff, who make up approximately 40% of the workforce. This proposed research uses multiple regression to explore the relationship between seven key mental health indicators (PTSD, depression, anxiety, stress, suicidality, problematic substance use, and post-traumatic growth) and thirteen psychosocial risk factors in BCWS wildland firefighters and support staff.

Experimental Study of Local Scour around Submerged Spur Dikes under Ice Cover and Implications in River Restoration

Guowei Li, PhD Student, Natural Resources and Environmental Studies

Local scour is a phenomenon leading to the localized lowering of the channel bed due to the imbalance of sediment transport. Functioning as engineering structures that protrude into the natural channels, spur dikes could trigger the local scour. Accurate estimation of local scour around spur dikes positively influences the effectiveness of erosion control and habitat enhancement of spur dikes, as structures such as spur dikes that are prone to local scour can improve aquatic habitats through sufficient provision of deeper, slower flowing water. In this study, we investigated the link between maximum scour depth as determined from experimental data obtained from an artificial flume and other spur dike design parameters.

Our results indicate that the maximum scour depth is controlled by changing flume parameters, spur dike dimensions, and sediment grain sizes. It is also necessary to consider ice cover in the scour process, as our findings demonstrate that ice cover has significant impacts on maximum scour depths and is commonly present in cold regions in winter. It is crucial to continuously investigate the local scour under ice-covered conditions, not only for engineering applications but also for stream ecologists and fluvial geomorphologists as the scour holes create simple aquatic habitats and change the river bed morphology significantly.

An LBM-DEM Coupling Model for Simulating Irregularly Shaped Particles in Granular Flow

Hassan Ahmadian, MSc. Natural Resources and Environmental Studies student, School of Engineering

In geotechnical engineering, studying granular flow is mostly associated with adopting a coupling method to simulate regularly shaped particles, like spheres, saturated in a fluid medium. While this approach has enhanced our knowledge about the underlying mechanisms that trigger geohazards like landslides and

internal erosion, the morphological impact of the particle's shape is neglected. Therefore, in this study, we utilized a coupling method of Lattice Boltzmann method (LBM) and Discrete Element Modeling (DEM) to simulate some benchmark cases of irregularly shaped particles.

For this purpose, the irregularly shaped particles are represented by multi-sphere clumps in DEM, and LBM is used to account for the fluid part interaction at the mesoscale. The benchmark cases considered in this study are a single particle settling in a single-phase fluid, settling of two particles, disk-shaped particles. Finally, the computer simulation outcome is compared against available experimental results from the literature. We believe this study could be one of the initial steps towards simulating real shape particles in granular flows.

Of Mice and Cats: Inter-Specific Variation in Prey Responses to Direct and Indirect Predator Cues

Dr. Ian Best, Postdoctoral Fellow, Department of Ecosystem Science and Management

Prey behavioral responses to predation risk cues may vary between species, and, moreover, the strength of these behaviors may differ depending on the risk cue. In northwestern Taiwan, we used the giving-up density (GUD) framework supported with camera trap observations to test how two wild murid rodents that differ by up to five-fold in body size (striped field mouse, *Apodemus agrarius* and lesser ricefield rat, *Rattus losea*) altered their foraging behavior depending on microhabitat characteristics (indirect predator cues) and exposure to predator odors (direct predator cues) of three felids: the native leopard cat (*Prionailurus bengalensis*), the introduced domestic cat (*Felis catus*), and the exotic bobcat (*Lynx rufus*).

GUD was not affected by predator odors, but rather by microhabitat type; rodents removed more seeds under cover of vegetation compared to exposed food stations, which may reflect a proactive approach to avoiding high risk areas in a heterogeneous environment. The smaller mouse *A. agrarius* spent more time foraging in the experimental food patches compared to the larger rat *R. losea*, irrespective of predator odor. Conversely, *R. losea* spent more time investigating the stations and exhibiting vigilance compared to *A. agrarius*. The species-level differences are consistent with behavioral phenomenon that smaller, "faster" species confer more boldness compared to larger, "slower" species, which reinforces the connection between behavior and pace-of-life, and further elucidates how the behavior of different prey species may not be interchangeable in contexts of risk.

Costing Covid-19 Isolated ICU Model-Using Operation Based Costing Approach

Dr. Balbinder Deo, Associate Professor, School of Business

Covid-19 isolated Intensive Care Unit (ICU) model related space, internal layout, equipment requirements, and staffing plans are in the process of evolution since the origin and spread of this disease. An isolated Covid 19 ICU space and staffing model, is relatively a new proposal proposed in recent literature for critical ill Covid 19 patients to minimize the spread of disease to other patients. Studies related to cost estimation of service to critically ill Covid 19 patients are generally based on micro-costing technique that counts the cost of direct resource use, such as direct medical expenses per symptomatic infection and thus underestimate the cost of services provided.

Other indirect resources used for service, such as ICU space, and medical staff that make up a significant part of the total cost is not included in micro-costing exercises. In this paper, a generic Operation-based costing approach is used to estimate the cost of indirect resources used for services provided through Covid-19 isolated ICU model. The Operation-based costing approach is useful in providing the cost of indirect resources along with direct resources used in Covid 19 ICU operations for service to each and every critically ill patients admitted and treated. Covid 19 isolated ICU model costing approach could be useful to entrepreneurs, researchers, practitioners and policy makers in health care services, for accurate assessment of indirect and direct resource cost for strategic as well as day-to-day decision-making processes.

A Gender Perspective on Socio-Technological Adoption of On-Site Water Solutions

Marianella Hernandez, MSc. Student, Natural Resources and Environmental Studies

Over 70% of water systems in rural and remote communities in Canada are at high or medium risk of contamination (Hu et al., 2022). On-site water and sanitation systems may be sustainable treatment and provision solutions in these areas. However, effective use and maintenance in time are key and may be achieved through a socio-technological adoption approach. From a gender perspective, women's roles in rural and remote households and learnings from technology adoption may require attention when designing and implementing water and sanitation technologies. This research will perform a literature review to explore the variables found in studies related to household technology adoption by women and will propose a model to predict water-related technology adoption in rural and remote areas in Northern British Columbia. The results may be relevant to contribute to future research or interventions focused on the gendered adoption of water and sanitation solutions in rural and remote areas in Canada.

Chemistry Magic Show

3:00 pm–4:00 pm (concurrent session) | Canfor Theatre 6-213

Presenters: Dr. Todd Whitcombe and the UNBC Chemistry/Biochemistry Club

The Chemistry Magic Show will feature a wide variety of chemical reactions in an entertaining and engaging presentation which will end with a bang!

Wednesday, March 1 – Green Day

Presentations – Resource Recovery, Community Engagement, Forestry Partnerships, Glyphosate, and Cumulative Pressure Mapping

10:00 am–11:30 am | Bentley Centre 7-170/172

Recovery of Curdlan from Aerobic Granular Sludge (AGS) Wastewater Treatment Systems

Adedoyin Adekunle, MAsc Student, Engineering

The prospects of resource recovery from wastewater and its potential have gained attention over the past few years. A circular economy within wastewater treatment systems appears to give a promising future and potential collaboration between the waste, resource, and manufacturing sectors. Curdlan, a neutral water-insoluble, biodegradable, non-toxic, bacterial exopolysaccharide, has been identified to be one of the resources that can be recovered from aerobic granular sludge (AGS)-based wastewater treatment systems. Curdlan has numerous industrial applications including sources of bio-thickener, stabilizer, and texturizer in food industries. Additionally, curdlan derivatives such as curdlan-sulphate and curdlan glucan oligosaccharide (GOS) have been revealed to be useful for biomedical functions such as treatment of viral infections and improvement of human intestinal health.

The possibility of resource recovery from AGS-based wastewater treatment systems has been assessed. However, issues surrounding quantification, optimization of production, recovery techniques and real-scale applications remain subjects of concern. The present study aims at optimizing the production of curdlan in AGS systems treating wastewater and developing suitable quantification and recovery protocols. In addition, the impact of recovery technologies on the treatment efficiency and stability of AGS systems and other resources would be assessed. In the long-term, the outcomes of this research will contribute to attaining the biorefinery concept in the wastewater management industry.

Identification of Socio-Technological Adaptive Capacities for Water and Sanitation in Northern BC Decentralized Communities

Avery Nystedt, BAsc student and Research Assistant, Environmental Engineering

Housing infrastructure deficits and challenges related to water and sanitation small systems, persist in Canada's remote/rural/ First Nation communities. In this work, surveying of communities to identify unmet water and sanitation needs and adaptive capacities, will aid in an understanding of context appropriate socio-technological solutions. With the support of our partner, the British Columbia Water and Waste Association (BCWWA), stakeholders and their representatives will be identified. These include community leaders, environmental activists, local Non-Government Organizations (NGOs), government agencies, businesses. This work will review existing off-grid infrastructure solutions applied in the region, highlighting their advantages and challenges.

In collaboration with these stakeholders, a database will be built of local housing infrastructure, with a specific focus on identifying on-site water and sanitation solutions. The data will be evaluated using a developed conceptual framework to determine the level of resilience of remote communities in Northern BC regarding water and sanitation.

Evolution of the Research Program at the John Prince Research Forest

Dexter Hodder, Adjunct Professor, John Prince Research Forest

For more than two decades, the University of Northern BC along with partners at Tl'azt'en and Binche

Whut'en First Nations, have worked together to build a multidisciplinary research program through their comanaged partnership in the John Prince Research Forest. In this presentation I will present an overview of this program and highlight the scope and scale of various research projects and the roles of UNBC faculty, graduate, and undergraduate students.

These projects range from community-based criteria and indicators for forest management to wildlife ecology and advanced silviculture; all in the context of increasing pressures from landscape and climate change. I will identify and discuss specific examples of projects that show the importance of partnerships in long-term research programs. I will then provide a perspective on current and future directions for the program and associated research opportunities.

Effects of Changing Environmental Conditions on Glyphosate Degradation in Wild Strawberries

Hariharan Sendamangalam Varudaraju, MSc student, Natural Resources and Environmental Studies – Biology

Glyphosate is a post-emergent, non-selective, broad-spectrum herbicide globally used in forestry and agriculture to control weeds. Earlier it was thought that glyphosate is environment-friendly and does not cause any harm to nontarget organisms present in the ecosystem due to its mechanism. The mechanism of action of glyphosate is to target the shikimic acid pathway that is present only in plants. The application of herbicide affects the targeted plants and reaches the non-target plants mainly due to spray drift, wind direction, and rainfall. The sublethal concentration doesn't kill the plants. However, it leads to the malformation of plant parts. To find how glyphosate affects and gets degraded by wild strawberry plants in a combination of temperature and photoperiod, they were exposed to different environmental conditions in three growth chambers.

The morphological changes were recorded to study the plant-glyphosate relationship. The results suggested that the glyphosate was effective at 12°C and 20°C. However, the efficiency of glyphosate changed at different temperatures. The degradation of glyphosate and its secondary metabolite AMPA was based on photoperiod and temperature, respectively. The efficacy of glyphosate was lower at eight °C because as the temperature is too low, it slows the plant metabolism, such as stomatal conductance and evapotranspiration, which reduces the translocation of glyphosate in the plants. The persistence of glyphosate residue was also found in the control samples, which is hard to explain as the persistence was not consistent in all trials. To conclude, the degradation of glyphosate was high at 20°C and low at 8°C.

Uncertainty and Sensitivity Analysis of Human Footprint Mapping

Miguel Arias, PhD candidate, Natural Resources and Environmental Studies

Human activities have disturbed biodiversity, ecosystems, and ecological processes over the last century. Given the growing trend of habitat loss and biodiversity decline, understanding patterns of human pressures has emerged as one of the analytical inputs for conservation planning. In this context, cumulative pressure mapping is used to quantify the extent and intensity of multiple pressures and their combined effects.

Despite cumulative pressure mapping integrates spatially explicit information, the assessment of how many layers are needed to depict an accurate state of human pressures, the assessment of the uncertainty of intensity scores, and the sensitivity of the cumulative function are still missing. Our research explored how the number of pressures mapped changes the outcome accuracy. In the Canadian province of British Columbia, we applied the Human Footprint Index (HF), one of the cumulative pressure mapping methodologies. Conducting a myriad combination among 16 input layers, using the bootstrap technique, we identified the key layers to represent an accurate state of human pressures. Additionally, we addressed the uncertainty of intensity scores since cumulative pressure mapping relies on expert knowledge, and the assigned scores are susceptible to biases and uncertainties. Our research assessed the difference between the most common cumulative functions associated with additive and antagonist models. Supported by a comprehensive validation process, we identified how the variation of intensity scores and cumulative functions influence the HF outcome.

Film Screening and Lunch

12:00 pm–1:30 pm | Bentley Centre 7-170/172

Pizza lunch will be served

Co-sponsored by the Pacific Institute for Climate Solutions

Screening of Beyond Climate plus virtual Q&A with Ian Mauro and David Suzuki

Directed by Ian Mauro, Director Pacific Institute for Climate Solutions

Narrated by David Suzuki

Cinematography by Len Peterson

Beyond Climate takes viewers beyond the headlines and into the heart of the issues. The film holistically connects the larger patterns of climate change with the human dimension, and what it looks like across BC from the top of the mountains to the depths of the oceans. Shot throughout the province over many years, the collective wisdom and perspectives of Indigenous leaders, local communities, scientists, and policymakers are featured.

Addressing many of the pressing issues facing BC - from pipelines, liquified natural gas, salmon, and Indigenous rights - the film is a timely contribution to the province and country as we grapple with climate change, the paramount issue of our time.

Green Day Market and Exhibits

2:00 pm–4:00 pm | Canfor Winter Garden and Agora Courtyard (weather permitting)

Prince George Electric Vehicle Society Display

On-going display of electric vehicles (outdoors with vehicles, weather permitting)

Green Market

Local green businesses selling goods:

- Homespun Refillery
- Clover Fields Apiaries
- Emily Wilson Art
- Students for a Green University (SGU) plant sale

Green Exhibits in Canfor Wintergarden

- Prince George Fibre Arts Guild
 - Including a mend and make your own clothing demonstration
- David Douglas Botanical Garden Society
 - Featuring a display of the botanical garden expansion
- Eco-living Community
- Recycling and Environmental Action Planning Society (REAPS) and Farm to School BC
- Prince George Electric Vehicle Society
- Conservation North

Emily Wilson Painting Event

2:00 pm–3:00 pm | Bentley Centre 7-170/172

Join Prince George artist, Emily Wilson, for a fun and collaborative painting event.

You will have the chance to paint a small piece of a larger artwork, depicting what nature means to you. These pieces will be put together to be displayed at UNBC. Supplies provided.

Poster Presentations – Session 2

3:00 pm–4:30 pm | Bentley Centre

Research Institute Exhibits will also be available for viewing in the Bentley Centre Alcove (Alumni Lounge)

Dexter Hodder, Adjunct Professor, John Prince Research Forest
Determining the Nutritional Importance of Kokanee to Grizzly Bears

Shannon Crowley, PhD student, Natural Resources and Environmental Studies
Habitat Ecology of Lynx Across Intensively Managed Forest Landscapes

Lauren Wheelhouse, MSc Student, Biology
Spatial and Temporal Species Overlap of Mustelids in the John Prince Research Forest

Lisa Koetke, PhD student, Natural Resources and Environmental Studies
Landscape Disturbance Alters the Diet Composition and Diversity of Moose, a Generalist Herbivore

Sue Grainger, Adjunct Faculty, Manager of the John Prince Research Forest
Adaptive Silviculture for Climate Change

Fatemeh Nouroozi, PhD student, Natural Resources and Environmental Studies
Utilizing ANN in Simulation and Prediction of Catalytic Activity of MOFs

Manveer Kaur, MASc student, Environmental Engineering
Recovery of Xanthan from Aerobic Granular Sludge (AGS) Wastewater Systems

Melissa Bates, Interdisciplinary Masters Candidate, Natural Resources and Environmental Studies
Who Speaks for The Trees? A Collaborative, Indigenous-Informed Exploration of the Environmental & Well-Being Co-Benefits of Community-based Participatory Research

Helena Mirzabeigi, MSc Student, Natural Resources and Environmental Studies – Environmental Studies
Development of an Environmentally Friendly Wood-Pulp-Based Foam for Industrial Packaging

Oliveth Orjiocha, MA student, International Studies
Impacts of Oil Spill on Niger Delta Ecological Zones

Habibollah Bahman, Visiting research student, Materials Technology & Environmental Research (MATTER) lab
Optimization of Flavonoid Dyes Adsorption on Zn/Al-LDH Using Response Surface Methodology

Cassandra Penfold, MSc Student, Natural Resources and Environmental Studies – Biology
*Developing RNA Interference (RNAi) as Biocontrol for Mountain Pine Beetle (*Dendroctonus ponderosae*)*

Farideh Barghak, Visiting Researcher, Chemistry
Simultaneous Ultrasound-Assisted Adsorption of Dyes in Environmental Water Samples with Magnetic Core-Shell Nanoparticles

Hariharan Sendamangalam Varadaraju, MSc student, Natural Resources and Environmental Studies – Biology
Effects of Changing Environmental Conditions on Glyphosate Degradation in Wild Strawberries

Dr. Hoorieh Jahanbani, Postdoctoral Fellow, Chemistry Department
Biopolymer/MOF Hybrid, an Efficient and Eco Friendly Catalyst for CO₂ Cycloaddition

Jeremiah DuBovis, MSc Student, Natural Resources and Environmental Studies – Environmental Science

Living Leaching Columns: A Novel Method to Understand Technosol Formation

Jibrael Odoom, MSc Student, Engineering
Oily Wastewater Treatment using Adsorption

Victor Po-Land Liu, Research Lab Manager, Division of Medical Sciences
Developing a Reliable qPCR and Western Blot Workflow for Detection of Myelin Genes in Murine Brain Tissue

Ahmad Jalil, Bachelor of Health Science Honours Student, Biomedical Studies
Particulate Matter-Bound Metals as an Assessment of Air Pollution in the City of Prince George

Holly M. McVea, MSc Student, Natural Resources and Environmental Studies – Biology
Revegetation of Aquatic Ecosystems in the Swan River Watershed (Wapsewsipi) to Support the Wellness and Cultural Preservation of the Swan River First Nation (SRFN)

Hui Jun Chew, MSc student, Department of Health Sciences
Technology Use in Northern British Columbia During the COVID-19 Pandemic: Perspectives of Staff Working in the Long-Term Care System

Claire Paillard, MSc Student, Natural Resources and Environmental Studies – Biology
The Taxonomic and Functional Diversity of Urban Ground Arthropods in Prince George, British Columbia

Shannon Werden, BSc student, Wildlife and Fisheries
Identifying Prey Species of Cougar Size-Age Classes in Southern British Columbia using Morphological and Molecular Methods

Aderonke Agboji, PhD candidate, Health Sciences/Nursing
Exploring the Impact of an eReader Technology on Apathy among Older Adults in Long-Term Care Facilities in Northern BC: A Pilot

Climate Cook-In: Local Roots 2

4:00 pm–7:00 pm | Agora Dining Hall

UNBC Food Services and Eco Living Community are partnering to run a series of Climate Cook-Ins.

Climate Teach-Ins have become a popular way of creating climate dialogues at universities across the world. Our take on this model, is to bring climate discussions together with one of the main drivers of GHG emissions- food production and consumption.

These events will focus on local food production, processing, and consumption as ways to take action and cultivate hope in the face of anthropogenic climate change.

Each event will contain three parts: a discussion on food production and climate, a demonstration of how to cook a sustainable meal, and the sharing of that meal.

Registration required. Link to register is available here: <https://www2.unbc.ca/events/73056/climate-cook-local-roots-2>

An Evening on the Nechako: A Virtual Update and Interactive Discussion with UNBC's Integrated Watershed Research Group

5:30 pm–7:00 pm | Virtual on Zoom

Join us for a virtual “Evening on the Nechako” with the members of UNBC’s Integrated Watershed Research Group (IWRG). The evening will feature updates from IWRG researchers Drs. Déry, Owens, Parkes and Petticrew and new team member Dr. Eduardo Martins, along with students and research team members who will share and profile recent developments in the IWRG team’s research and connections in the Nechako Watershed. The evening will feature presentations and break-out discussions, with opportunities to interact with research team members and hear more about their research, spanning climate change and water security, sediment sources and fluxes, as well as approaches to connecting across environment, community, health and well-being priorities in the watershed.

The evening event is one of the activities being profiled as part of the “Koh-learning in our Watersheds” Khit/Khui Winter festival in partnership with School District 91 (February 13-March 15).

The evening will include:

An overview and update from the Integrated Watershed Research Group:

- **Speakers:** Dr. Stephen Déry, Dr. Phil Owens, Dr. Margot Parkes, Dr. Ellen Petticrew and new team member Dr. Eduardo Martins

Research updates and discussions with members of the IWRG Team:

- **Trivia Night in the Nechako:** Dr. Stephen Déry, Kirsten Calder-Sutt, Justin Kokoszka, Jade Reynolds, Tamar Richards-Thomas, Bruno Sobral, Jingwen Wu
- **Earth, Rain and Fire: sediment sources and dynamics in light of the increased incidence of forest fires:** Kristen Kieta, Dr. Phil Owens and Dr. Ellen Petticrew
- **Portal Party! New connections for learning with the Nechako Watershed Portal:** Aita Bezolla, Jonathan Doyon, Scott Monroe, Dr. Margot Parkes

Registration required. Please see the online schedule for the registration link here: <https://www2.unbc.ca/office-research-and-innovation/research-week-schedule>

Thursday, March 2

Presentations – Standards of Living, Constructed Wetlands, Cross-Laminated Timber, and Perinatal Well-Being

9:00 am–10:00 am | Bentley Centre 7-170/172

A Foucauldian Study of How Illiteracy Can Affect the Standard of Living of Arab Minority Women in the Region “Ahwaz”

Maedeh Saki, graduate student, Gender Studies

I started my career as a social worker in a social service association in one of the poorest areas in our region, “Mahshahr”. I started my project by introducing both mental and physical health monitoring programs for women. Due to being treated as second-class citizens, this particular group did not take these important health programs seriously. Being traumatized by an unjust educational system that has never recognized them as a minority, many of them had to quit school at an early age; consequently, they were pushed to arrange marriage and premature pregnancy. In my view, this topic has never been studied from a feminist perspective. Furthermore, as an educated woman, I believe that educating women about their rights can have a significant impact on their lives.

As part of my research on this topic, I would like to focus on the main reasons that this specific group did not participate in social service associations’ health programs. Furthermore, as an intersectional feminist, studying minority women’s struggles has always been my passion and I’m eager to contribute to this field through this research. In foucauldian sense, there are many power relations among all of our relationships, with the one that has the knowledge and the other which is deprived of it. As an indigenous woman, I have the advantage of being able to ask a question in Arabic, the respondents’ native language, so that I can connect with them on a more personal level using our native languages.

Adaptive Strategies for Constructed Wetlands in Cold Climates

Erik Groenenberg, MASC student, Engineering

Constructed wetlands are established as affordable wastewater treatment solutions worldwide for rural communities where land is available and maintenance needs to be minimal. Despite this, northern communities have low implementation due to cold winters which can reduce treatment efficiencies and risk failure from freezing. Design alterations are needed to allow operation at cold temperatures while retaining the low-maintenance benefits. Innovative design and operational strategies aim to push this climate barrier, including floating insulative covers, effluent recirculation, buried dosing systems, mulch, high loading rates, bio-augmentation, and even greenhouses. This work evaluates and compares these strategies to better understand their performance and implementation ranges.

Connection Solution for Point-Supported CLT-Concrete-Composite Floor Systems

Hamidreza Chaboki, MASC student, Engineering

The application of cross-laminated timber concrete composite (CLTCC) floors is increasing thanks to their structural and non-structural advantages over pure wood floors. Timber-concrete composite (TCC) floors can address some of the inefficiencies associated with traditional light wood frame floors considering strength, section depth, stiffness, and vibration performance. The use of cross-laminated timber (CLT) in TCC floors is growing as it is capable of transferring loads in two directions. CLT panels can be used in point-supported flat-plate systems, which provide large open spaces utilizing the biaxial span capability of CLT panels. However, there is a need to develop minor axis panel-to-panel connections to take advantage of the two-way span capability of CLTCC.

Therefore, the selection of a proper panel-to-panel connection and the two-way shear connection system play a significant role in the mechanical behaviour of the composite and help to achieve 2-way systems with point supports. The purpose of this study is to experimentally investigate CLTCC floors utilizing steel plates as in-plane and out-of-plane shear connectors. The steel plates will be embedded in CLT to a depth of 35 mm of five-layer 175 mm thick CLT panels and a 50 mm topping concrete. This research will contribute towards exploiting the two-way span potential of CLTCC floors, as well as provide guidance for panel-to-panel connections subjected to out-of-plane and in-plane loads.

Promoting Perinatal Well-Being of Young People in Rural, Northern, and Indigenous Geographies

Kelsey Chamberlin, MA student, Interdisciplinary Studies

Early age (≤ 24) birth rates in northern British Columbia (BC) are the highest in the province. Compared to adults, young people navigating pregnancy, birth, and early parenting are at risk of experiencing a host of adverse outcomes. Despite this, little is known about how to promote perinatal well-being of northern and Indigenous young people. This presentation introduces my current master's thesis research that attends to this gap, by asking: What promising practices promote perinatal well-being of young people in rural, northern, and Indigenous geographies? My research transpires in the Widzin Kwah/Bulkley Valley watershed in connection to a community organization currently building a supportive housing program for young mothers and birthing people. This presentation discusses my process of weaving a methodology best suited to the peoples and places at the centre of my research.

In this way, I weave together anti-colonial and intersectional praxis, critical place inquiry, and community-driven and strengths-based approaches, which collectively value living/ed experience as legitimate forms of knowledge in developing evidence-based care. I also discuss preliminary findings from 10 land- and story-based interviews I conducted with knowledge holders, as well as my plans for knowledge translation. This presentation contributes to growing conversations about place-based and action-oriented solutions to achieve health equity and reproductive justice for northern and Indigenous young people.

Knowledge Translation Workshop

10:00 am–1:00 pm (concurrent with other events) | Conference Centre 6-205

This workshop is aimed at Graduate Students but open to advanced undergraduates interested in the topic.

This workshop will introduce Knowledge Translation (KT), explain what it is, and why it matters. It will go over the varied terminology for KT, describe KT models and frameworks, and discuss how to plan and enact impactful KT.

Bring questions about your own research and be ready to get engaged in a fast paced and practical session where you will learn how to design your own KT plan to maximize research impacts.

This workshop will be in-person and is designed for in-person instruction; however, there might be virtual Zoom access for those off campus. Please contact the hri@unbc.ca to request virtual attendance.

Registration is required for planning & catering purposes, Lunch is included!

For registration information, please see the online Research Week schedule here: <https://www2.unbc.ca/office-research-and-innovation/research-week-schedule>

FISSSH Research Showcase: Emerging UNBC Researchers Roundtable Discussion on Theatre for Development (TfD): A Creative and Transformative Methodology in Action

10:00 am–11:00 am | Bentley Centre 7-170/172

This roundtable covers the varied paths which our interdisciplinary panelists – faculty members and graduate members of UNBC’s Faculty of Indigenous Studies, Social Sciences and Humanities – took to becoming interested in Theatre for Development (TfD) as a qualitative research tool in their work. The event highlights their experiences and contributions to applied anthropological and/or international development work using similar approaches to theatre in different parts of the world, such as, Nigeria, Bangladesh and Ethiopia. This discussion introduces and invites those who might – or might not be –familiar with the possibilities and constraints of TfD approaches to share their own experiences and to join in on the discussion.

The roundtable highlights the recent work of emerging FISSSH scholar (and co-founder of the South Omo Theatre Company), Dr. Shauna LaTosky (Department of Anthropology) and graduate students, Ekpeno Ukut (script writer, TfD practitioner and founder of The Adams Project Africa), Musfiq Tajwar and Rosarydasan Rozanna Devamalar (Dept. of Global and International Studies) and their plans to collaborate in creative ways in the future. Moderated by Dr. Gabrielle Daoust (Dept. of Global and International Studies), who, together with Dr. LaTosky and Mr. Ukut, was recently awarded a SSHRC General Research Fund grant for a project titled “Building Connections between Indigenous Theatre and Theatre for Development (TfD) in Canada, Nigeria and Ethiopia”, the roundtable emphasises how theatre is the central creative discipline that drives this multi-disciplinary team’s common interests in sustainable development and social justice.

Moderator: Dr. Gabrielle Daoust, Global and International Studies

Participants include:

Dr. Shauna LaTosky, Anthropology

Ekpeno Ukut, Global and International Studies

Musfiq Tajwar, Global and International Studies

Rosarydasan Rozanna Devamalar, Global and International Studies

Break

11:00 am–11:15 am

MATTER (Materials Technology & Environmental Research) Team Presentations

11:15 am–12:30 am | Bentley Centre 7-170/172

Development of a Dual-Functional Adsorbent for Simultaneous Removal of Cationic and Anionic Nutrients from Contaminated Waters

Dorna Sobhani, MSc Student, Natural Resources and Environmental Studies – Environmental Science

In this research work, a variety of adsorbent materials, including natural and modified zeolite and clay minerals, as well as synthetic inorganic cation/anion exchangers, including Polonite and Umix will be studied and compared in terms of their adsorption efficiencies with regard to both cationic and anionic forms of nutrients (mainly N and P). Effect of various operational parameters, such as Adsorbent Dosage, Initial Solution pH, Initial Nutrient Concentration, and Contact Time on the sorption performance of both adsorbents and adsorbent mixtures will be studied. Eventually, after exploring the sorption potential of different mixtures of the adsorbents of interest, a dual-functional adsorbent will be developed. Adsorption kinetics and isotherms will also be studied to better understand the mechanisms involved in adsorption.

Validating the use of a Multi-Fraction Sampler for Recovering Inhalable and Respirable Dust Mass, and Metals in Workplace Air

Ann Duong, PhD candidate, Natural Resources and Environmental Studies – Environmental Science

The Disposable Inhalable Sampler (DIS) holds several advantages to the traditional inhalable sampler (IOM) it was designed to replace. It negates the issue of wall deposits, and cross-contamination, since the whole capsule can be digested and can be used in combination with a polyurethane foam insert to capture respirable fractions. A variation of the DIS is known as the Disposable Respirable Sampler (DRS). In the DRS, the filter and capsule are separated and there is a size-selective foam insert. The hypothesis of this study is that the DRS can be used for determining both the inhalable and respirable aerosol fraction masses and metal constituents in a single sample. There are, however, several knowledge gaps requiring investigation before the DRS can be considered validated for practical use in the field. The research goals are to validate the performance of the DRS against reference method samplers in the laboratory and field.

Simultaneous Pre-concentration and Determination of Food Dyes by Yolk-Shell Magnetic Metal Organic Framework in Foodstuffs

Farideh Barghak, visiting researcher, Chemistry

Food dyes are used widely to change, improve, maintenance, optimize and compensate of color appearance in foods. In recent years, these dyes have been increasingly used for the consumer preference because Color is the first sensory quality by which foods are judged, and food quality and flavour are closely associated with color. Fast Green, brown HT and Erythrosine are synthetic dyes which highly used as food additives to improve the appearance, color, and texture of foods [8]. Generally, synthetic dyes contain azo (N=N) functional groups and aromatic ring structures, so they are harmful to human health and unfavorably effect on children's behaviour. They can be causes of many pathogenic problems including clinical asthmatic patients, depression and a potential risk of negative influences on the thyroid, when added in excess.

To ensure food safety, World Health Organization (WHO) has imposed rigorous standards on the permitted levels for various synthetic food colors. For the same reason, it is important to develop effective methods for analyzing synthetic colors in food. several analytical methods and techniques have been developed for determination and quantification of synthetic food colorant such as liquid chromatography (LC), capillary electrophoresis, differential pulse polarography, high-performance liquid chromatography (HPLC), immunoassay and spectrophotometric techniques. spectrophotometry is the most used and attractive in these techniques because it is simplistic and has lower operational cost than other instrumental technique and also rapid method for determination of dyes separately and simultaneously. In this study, ultrasound assisted dispersive solid-phase micro extraction combined with spectrophotometry method based on Magnetic Yolk-Shell nanoparticle was developed for simultaneous pre-concentration of Fast Green, Erythrosine and brown HT in foodstuffs. This adsorbent was fully characterized by Fourier Transform Infrared (FT-IR) spectroscopy, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), and Energy Dispersive X-ray (EDX) analysis. 0.04 g of adsorbent were added to the aqueous solution containing specific concentration of each dye (pH 6.5); then, the mixture was sonicated for 4 min in water. The supernatant was poured, and then, the isolated nanoparticles were eluted with 405 μ L Ethanol to desorb the adsorbed dyes.

The effects of various parameters including pH, amount of adsorbent, sonicate time and eluent volume were optimized by Central Composite Design (CCD) in response surface methodology (RSM). Under the optimal conditions the enhancement factors (EFs) were 55, 29 and 14 for the Fast Green, Erythrosine and Brown HT dyes respectively. The pre-concentration factors were 62 and relative standard deviations (RSD, n=5 sample, at 0.5 mg L⁻¹ level of the analytes) of the method for under study dyes determination were 1.3%, 1.4% and 2.14%, respectively. Acceptable limits of detection of 0.00061, 0.00125 and 0.00275 mgL⁻¹ for Fast Green, Erythrosine and Brown HT dyes, respectively and high accuracy and repeatability are unique advantages of present method to improve the figures of merit for their accurate determination at trace level in complicated materials.

Developing an Analytical Method for Chromium (III) and Chromium (VI) in Workplace Air

Mya Schouwenburg, MSc student, Materials Technology & Environmental Research (MATTER) lab

Due to their potential toxicity, hexavalent and trivalent chromium have defined exposure limits in workplace air. The objective of this research is to develop an analytical procedure to resolve two separate species and different solubilities of chromium in individual environmental samples, to independently determine the amount of trivalent and hexavalent chromium present, in a manner that is accurate and with sufficient sensitivity to address lower detection limits pertinent to the Threshold Limit Values (TLVs) adopted by the American Conference of Governmental Industrial Hygienists (ACGIH) in response to rising health concerns in industrial and workplace environments.

Particulate Matter-Bound Metals as an Assessment of Air Pollution in the City of Prince George

Ahmad Jalil, Bachelor of Health Science Honours student, Biomedical Studies

Particulate matter (PM) constitutes a mixture of small particles and liquid droplets that have toxicological and environmental effects. While PM comes in many sizes, PM_{2.5}, or PM classified as having a particle size diameter of less than 2.5 µm, is of the highest health concern since they can be inhaled and cause wide-ranging negative impacts on the pulmonary and cardiovascular systems. With the increasing incidence of PM_{2.5} emitting sources such as forest fires, industrial waste, and automobile exhaust, monitoring the PM_{2.5} in the atmosphere is imperative to developing strategies for managing and improving air quality.

In this study, year-round PM_{2.5} bound heavy metals data gathered from downtown Prince George, BC, a location concentrated in industrial and road dust activity, will be assessed for contamination factor (Cf), contamination degree (Cd), and enrichment factor. The data are divided into two temporal categories, “Warm” and “Cold” and compared to urban and rural ambient reference concentrations. The Cf, Cd, and enrichment factor pollution indices will be useful in providing comprehensive information on the state of the air quality in Prince George, BC. As the results indicate, there are some metals that exhibit a high degree of contamination (Co, Cr, Mn) and are enriched by anthropogenic sources - requiring corrective measures to reduce its impact on human health and the environment.

Break

12:30 pm–1:30 pm

Three Minute Thesis (3MT®)

1:30 pm–4:00 pm | Bentley Centre 7-170/172 and Online

Join us to watch this exciting competition. UNBC graduate students rise to the challenge of presenting their research in 3 minutes with only one static slide!

To view the online event, please use the link on the UNBC 3MT® webpage here: <https://www2.unbc.ca/three-minute-thesis>

MC

Natalie Linklater – Senior Lab Instructor, Faculty of Science and Engineering

Judges

Cheri Brown – 2022 UNBC 3MT® winner

Dr. Jacqueline Holler – Chair, International Studies

Dr. Joseph Shea – Associate Professor, Geography

Mayor Simon Yu – City of Prince George

Lori Cruddas – Realtor, Team Powerhouse Realty

Participants

Tanvi Guhagarkar, Faculty of Indigenous Studies, Social Sciences and Humanities

The Intersection Between Caste and Gender in Exploring Hate-Based Crimes Against Dalit-Queer Individuals

Akifa Rahman, Faculty of Business and Economics

Water on Lotus Petals: Job Engagement in Post-pandemic Hybrid Workplace

Hui Jun Chew, RD, Faculty of Human and Health Sciences

Covid-19 Challenged Connections: Stories of Technology Use by Long Term Care Staff in Northern BC

Ronja Frank, Faculty of Indigenous Studies, Social Sciences and Humanities

The Secret Garden, Posthumanism, and Victorian Children's Fiction in an Era of the Anthropocene

Sunny Tseng, Faculty of Environment

Acoustic Recording as A Potential Tool to Monitor Individual Owls

Erik Groenenberg, Faculty of Science and Engineering

Adapting Constructed Wetlands for Cold Climate Wastewater Treatment

Jessica Woskett, Faculty of Environment

Tackling Diversity and Inclusion in Recreational Fishing

Hariharan Varudaraju Faculty of Environment

Effects of Changing Environmental Conditions on Glyphosate Degradation and Melatonin Production in Wild Strawberries

Houman Ganjali, Faculty of Science and Engineering

A New Prescription for Timber Buildings

Vibusha Madanayake, Faculty of Indigenous Studies, Social Sciences and Humanities

Access to Justice for Low to Middle-Income Single Mothers in British Columbia

Guowei Li, Faculty of Environment

Local Scour: One Discipline's Trash is Another Discipline's Treasure

Jeremiah DuBovis, Faculty of Environment

Observing Soil Formation on Ultramafic Mine Tailings

Hamidreza Chaboki, Faculty of Science and Engineering

Concrete Layers Help Wood Floor Work Better

Jhoan Chavez, Faculty of Environment

Beyond Waste in Agriculture Through Pyrolysis

Juls Budau, Faculty of Human and Health Sciences

User Perspectives on Prescribed Stimulant Safe Supply

Kamran Hassani, Faculty of Science and Engineering

Prevention of Scaling in Geothermal Field

Mahtab Gheisari, Faculty of Science and Engineering

Improving the Design Code of Timber Structures

Marianella Hernandez, Faculty of Environment

Women's Relationship with Water and its Relevance in Decision-Making Processes Related to Water and Sanitation Issues in Rural and Remote Communities in Canada

Mario Salinas Toledano, Faculty of Science and Engineering
Modelling Constructed Wetlands for Household Wastewater Treatment

Mostafa Dorosti, Faculty of Environment
Electrochemical Technology: Application for Water Treatment in Rural and Small Communities

Musfiq Tajwar, Faculty of Indigenous Studies, Social Sciences and Humanities
Nexus Between Prolonged Refugee Presence and Diminishing Social Cohesion: A Case Study of Rohingya Refugee Living in Bangladesh

Sami Mohammadyzadeh, Faculty of Environment
Dynamic Behavior of Tall Timber Buildings

Sorour Nasimi, Faculty of Environment
Adsorption of Heavy Metals Using Modified Naturally-Based Materials

Pacific Institute for Mathematical Sciences-UNBC Distinguished Colloquium Series: Arithmetic and Transcendence

2:30 pm–3:30 pm (concurrent session) | Virtual on Zoom

Speaker: Dr. Cameron Stewart, Professor, University of Waterloo

Abstract: Techniques developed for transcendental number theory have had many surprising applications in the study of purely arithmetic questions. The aim of our talk will be to discuss this phenomenon.

Speaker Bio: Dr. Cameron L. Stewart is a University Professor in the Department of Pure Mathematics at the University of Waterloo. He received his PhD from the University of Cambridge in 1976 under the supervision of Alan Baker. Dr. Stewart is one of Canada's most distinguished number theorists with outstanding contributions in Diophantine approximation and Diophantine equations. He is particularly recognized for his work on the abc conjecture. He has held a Canada Research Chair (tier 1) since 2003.

Dr. Stewart is a Fellow of the Royal Society of Canada, the Fields Institute and the Canadian Mathematical Society. He presented the 27th Isidore and Hilda Dressler Lecture at Kansas State University in 2015. Among the many honours and prestigious awards that he has received are the J.T. Knight Prize (1974), Killam Research fellowship (1990) and Excellence in Graduate Supervision Award (2019).

Registration required. Please see the online schedule for the registration link here: <https://www2.unbc.ca/office-research-and-innovation/research-week-schedule>

Friday, March 3

Making the Most of Data at UNBC

9:00 am–9:30 am | Bentley Centre 7-170/172

Presenters: Susie Wilson, Data Services Librarian and Dr. Shannon Freeman, Academic Director, Research Data Centre

This presentation will introduce the range of data services available to students and researchers at UNBC, from using the Research Data Centre to access confidential Statistics Canada Data to individual data consultations for that hard-to-find data.

Presentations – Bird sounds, Brexit, Rock Properties, Social Work Practicum, Youth, and Leadership

9:30 am–11:00 am | Bentley Centre 7-170/172

Passive Acoustic Recording as A Potential Tool for Monitoring Individual Barred Owls

Yi-Chin (Sunny) Tseng, PhD candidate, Natural Resources and Environmental Studies

Many studies suggest acoustic recording of owls coupled with identification of individuality in vocalizations can be used to monitor populations, though, few explicitly test this potential. We assessed the prospect of identifying individual Barred Owls (*Strix varia*) through detections using passive acoustic monitoring. We set up autonomous recording units from Feb. to April 2021 throughout the John Prince Research Forest (54° 27'N, 124° 10'W, 700 m a.s.l.) and surrounding area. The study area is 357 km² with a minimum of 2km between the 66 recording stations. During this period, we collected 454 Barred Owl calls from 10 recording stations.

We measured 30 song features, 12 temporal features and 18 frequency features, from each song. Using forward stepwise discriminant function analysis, the model correctly identified 84.4% of the songs based on a 5-fold cross validation. The model achieved a Kappa statistic of 0.77, which showed substantial agreement between predicted individual versus observed individual categorization. The most important discriminating features include song length, interval between the 4th and the 5th notes, interval between the 6th and 7th notes, and the duration of the 8th note. Our results suggest that passive acoustic monitoring can be an effective tool for identifying individual Barred Owls and be useful for population censusing.

Collateral Damage? The Consequences of Brexit for Crown Dependencies in the British Isles

Dr. Gary Wilson, Professor, Political Science; Will Hanlon, undergraduate student, Political Science and Geography

In January 2020, the United Kingdom (UK) formally ceased to be a member state of the European Union (EU), following a national referendum and a protracted series of negotiations, a process that has come to be known as Brexit. Self-governing Crown Dependencies in the British Isles, such as the Isle of Man and the Channel Islands, did not participate in the referendum but were affected by the UK's decision to leave the EU. Even though they were not members of the EU, their access to the European Single Market was facilitated and governed by protocol arrangements that were tied to the UK's 1973 accession agreement and membership in the EU. This presentation will explore the consequences of Brexit for Crown Dependencies, including the immediate economic impacts of losing tariff-free access to the European Single Market and the longer-term processes that could change their political and legal relationship with the UK.

Quantification of mineralogical characteristics and mechanical properties of Montney Formation by SEM and indentation test

Huan Yu, PhD candidate, School of Engineering

The rocks are heterogeneous and anisotropic in nature, and the mechanical properties are controlled by the mineralogical characteristics and microstructures of the rock. The conventional methods to obtain the mechanical properties of the rock are the uniaxial test, triaxial test and Brazilian test et al. However, conventional tests have some shortcomings. On the one hand, these tests have usually broken the rock after the test, which is expensive and time-consuming to make numerous specimens for repetitive tests. On the other hand, specimens for these tests are inch-size, while the mineral grain size ranges from millimetre to micrometre size, the testing scale cannot match the study scale. In order to study the influence of mineralogical characteristics and microstructures of rock upon rock mechanical properties, the observation scale needs to be narrowed to microscopic size.

This research conducts the non-destructive testing methods, instrumented indentation test and SEM analysis on the core samples underneath two thousand from the Montney Formation and introduces a method of image processing for SEM images. The instrumented indentation test is used to obtain the mechanical properties of rock. In addition, based on the chemical formulas of different minerals, the method combines the pixel matrix of SEM element images to acquire the mineral distribution map, which is consistent with the loading area of the indentation test. The results of the mineral distribution map and instrumented indentation test are used to analyze the relationship between minerals and microstructures of rock and mechanical properties.

Practicum Experiences during COVID-19: What Can We Learn from What Worked?

Dr. Lisa Kyle, Assistant Professor, Social Work

This research was conducted with Master of Social Work (MSW) students who completed all or part of a graduate practicum between March 2020 and April 2022, which has so far been the height of the COVID-19 Pandemic.

Semi-structured interviews were conducted with 11 participants, revealing three themes: 1. Advantages from flexibility around completing practicum requirements, 2. Enhanced connections, and 3. Richer learning experiences. This research offers suggestions for how those involved with post-secondary professional programs (i.e., post-secondary faculty and staff, university administrators, community organizations and professionals, accreditation bodies) can use what was learned from the unprecedented time around the COVID-19 Pandemic to improve field education programs.

Connecting People, Place, and Time: Youth Insights on Relationships with Land and Place in the Nechako Watershed

Tavia McKinnon, MSW student, School of Social Work

Scholars have been calling for increased integration of the natural environment within social work for the past twenty years. However, social work literature provides little insight on youth perspectives on this topic, particularly in rural and remote communities. During my Master of Social Work thesis research in fall 2022, I learned from secondary students in Fort St James about their experiences spending time outdoors. Insights from these youth have pushed beyond my initial interest in “youth relationships with land and place” to shed light on the myriad ways people and communities are connected (to each other, themselves, and the land) through place and time. By student choice, half of our interviews took place outdoors, prompting my own additional reflections on the role of land and place in research and the effects of our immediate environment on research experiences, interactions, and results.

Leadership for Reconciliation: Exploring Advanced Leadership in a Public Service Indigenous Relations Environment

Stewart Dickson, PhD student, Human and Health Sciences

Addressing the systemic disparity between Indigenous and non-Indigenous populations within Canada is a human security issue that calls for reconciliation (Final Report of the National Inquiry into Murdered and Missing Indigenous Women and Girls [MMIWG], 2019). Leadership is often cited as an antidote (Final Report from Canada's Truth and Reconciliation Commission [TRC], 2015); yet leadership is socially constructed, and successful reconciliation, peacebuilding leadership practices are undefined (Olonisakin, 2015). In response to this concern, am conducting a research project in British Columbia, Canada, in 2023. The purpose of the study is to explore the experiences and conceptualizations of provincial government staff as they pertain to advanced leadership practices that include perceptions of contributing to the achievement of reconciliation in a public service Indigenous relations environment. Qualitative case study methodology (Merriam, 1998) will be used to explore this phenomenon within the Negotiations and Regional Operations Division (NROD) of the Ministry of Indigenous Relations and Reconciliation (MIRR) from the perspective of staff who work to achieve reconciliation with Indigenous Peoples in BC.

Theories underpinning this research are drawn from integrated leadership approaches. Research questions include: 1) How is leadership conceptualized by NROD staff who are asked to lead reconciliation? 2) What practices do staff explain as being associated with advanced leadership within NROD's context? and 3) How is leadership evident in organizational documents intended to inform and guide the actions of NROD staff? Data collection methods include semi-structured interviews with NROD employees from and participant observation and document review of organizational texts.

Lunch and Learn – BC Network Environments for Indigenous Health Research (BC NEIHR) in the North

11:00 am–12:00 pm | Bentley Centre 7-170/172

Lunch will be served

Host: Laura McNab Coombs, BC NEIHR Indigenous Health Research Facilitator

Please join us for lunch and to hear about BC Network Environments for Indigenous Health Research (BC NEIHR) activities in the north. Host Laura McNab-Coombs, BC NEIHR Indigenous Health Research Facilitator for northern and interior BC, will be joined by some of the amazing student's and communities who have previously received BC NEIHR funding to support their health and wellness research.

BC NEIHR is one of nine Indigenous-led networks across Canada that supports research leadership among Indigenous (First Nations, Métis and Inuit) communities, collectives and organizations (ICCOs), facilitates community-led research partnerships between ICCOs, students, researchers and organizations, and supports Indigenous student research through graduate & post doctorate grants and fellowships.

The purpose of the Network Environments for Indigenous Health Research Program is to establish a national network of centres focused on supporting Indigenous-led health and wellness research through providing funding and mentoring opportunities, capacity bridging, and contributing to the decolonization of research spaces. The BC NEIHR strives to provide supportive and safe research environments for Indigenous health research led by, and grounded in, Indigenous communities in Canada.

Global Fridays Speaker Series – Mussolini's Ghost: Post-Fascism and the Remaking of Italy's Far Right

12:00 pm–1:30 pm | Room 7-150 and Online

Speakers: Dr. Robert A. Ventresca, Academic Dean and Professor of History at King's University College at Western University (in-person) and Dr. Jacopo Pili, University of Leeds (virtual)

The rise of Giorgia Meloni to power in Italy, the country's first female prime minister and leader of one of the most far-right parties in the history of the post-fascist Republic, has drawn worldwide concern about the return of Fascism to Italy. But is Giorgia Meloni a Fascist? Does the recent electoral success of far-right parties signal a decisive rejection of liberal democratic norms and of the so-called 'anti-Fascist paradigm' that has defined Italian political life and national identity since the fall of Mussolini? Historians Jacopo Pili and Robert Ventresca join Global Fridays to help us historicize the recent resurgence of Italy's far-right. They examine how the legacy of fascism continues to haunt the country's governing structures as well as popular memory, but in more complex ways than is commonly understood. Seen through a historical lens, the rise to power of the far-right does not signal a return to fascism so much as the adaptation by far-right leaders like Giorgia Meloni of a coherent if historically flawed narrative of Italy's post-Fascist history. For the online link, please see the Global Fridays webpage here: <https://www2.unbc.ca/global-and-international-studies/global-friday-speakers-series>

NRESi Colloquium – Camera Trap Science to Support Human-Wildlife Coexistence

3:30 pm–4:30 pm | Room 7-212 and Online

Speaker: Dr. Cole Burton, Associate Professor & Canada Research Chair, Department of Forest Resources Management, University of British Columbia

Human-wildlife coexistence represents a major challenge for the Anthropocene. Effective strategies for coexistence are needed in landscapes where we live, work and play—from backyards with bears, to cutblocks near caribou, to mountain trails passing mountain goats. Developing and testing these strategies requires rigorous evidence on wildlife responses to human activities and management actions. In this talk, I will provide an overview of ways in which the WildCo lab and partners are using camera traps (i.e., remotely triggered infrared cameras) to measure mammal responses to human impacts and interventions. I hope to convey some of the promise and pitfalls of camera trap science, and outline a vision for how it can support the pressing need for evidence-based wildlife management on a crowded planet.

This presentation is sponsored by the Wildlife Society Student Chapter at UNBC.

For the online link, please see the colloquium webcasts page here: <https://www2.unbc.ca/nres-institute/colloquium-webcasts>