



Inspiring Change, Education, and Awareness

March 24, 2023

## Intercultural Dialogue on ENVIRONMENT & SUSTAINABILITY

University of Western Ontario

Hybrid Conference

Schedule	
Time	Session
9:00 am – 9:15 am	Welcome Address
9:15 am – 10:45 am	Online Panel Discussion
10:45 am – 11:00 am	Break
11:00 am – 12:00 pm	Graduate Student Talks 1
12:00 pm – 12:10 pm	Break
12:10 pm – 1:00 pm	Graduate Student Talks 2
1:00 pm – 2:00 pm	Lunch Break
2:00 pm – 2:50 pm	In-person Keynote speaker
2:50 pm – 3:00 pm	Closing Remarks

**Panel Discussion:**  
**Intercultural Dialogue on Environment & Sustainability**

9:15 am – 10:45 am

**Panelists:**

**Annie Booth**



University of Northern British  
Columbia (UNBC)

Tenured professor at the  
University of Northern British  
Columbia in Environmental &  
Sustainability Studies

**Bruno Takahashi**



Michigan State University  
(MSU)

Associate professor of  
environmental journalism and  
communication at Michigan  
State University

**Aranya Iyer**



University of Western Ontario  
(UWO)

Associate Specialist at World  
Wildlife Fund Canada (WWF),  
Co-founder and Director at Field  
Research in Ecology and  
Evolution Diversified (FREED)

**Moderator: Andre Wolmer de Melo**

**Join us for a discussion with professionals to hear about our panellists' experience of Interdisciplinary perspectives on environment and sustainability.**

**Topics areas to be addressed include:**

- Gender studies
- Indigenous studies
- Environmental Ethics
- Journalism
- Media studies
- Wildlife

## Graduate Student Talks: Presentation Schedule

11:00 am – 1:00 pm

Graduate Student Talks 1 11:00 am – 12:00 pm			
Room 1	Room 2	Room 3	Room 4
Canadian Context	Climate Justice and Environmental Accountability	Connections to Nature	Global Environmental Health
'Constructing British Columbia': the Role of the Environment in the notion of British Columbian Identity, 1890-1970. <b>Adrian Wawrejko</b>	By Any Means Necessary: Violence, Responsibility and Climate Justice <b>Victor Babin</b>	Modeling the Relationship Between Biodiversity and Traditional Food Dietary Diversity in First Nations Populations Across Canada <b>Hannah Klassen</b>	Mapping Climate and Malaria: Climatic factors and plasmodium falciparum prevalence among children in Ghana <b>Kamaldeen Mohammed</b>
Exploring Water Co-Governance in Canada <b>Jan Rosete</b>	Climate Change and Moral Responsibility <b>Alper Güngör</b>	Naturalization of indigenous plants for phytoremediation in decommissioned quarries in Ontario <b>Karen Koornneef</b>	Investigating global air pollution patterns with their associated health implications: a case study of Nigeria <b>Munriat Idris</b>
Marginalized Diasporas in Taylor-Massey, Toronto: Impacts of Sustainability - Initiatives on Developing Communities <b>Zeina Seaifan</b>	Ecological grief among Smallholder Farmers in Semi-Arid Ghana: A Study on the Emotional Toll of Climate Change. <b>Daniel Amoak</b>	Food as Commons on Colonized Indigenous Lands <b>Amal Javed Abdullah</b>	Radionuclides as a Driving Factor of Arctic Amplification <b>Katelyn Mountjoy</b>
Sustainable Menstruation: Examining the social, environmental and structural barriers to adopting reusable menstrual products in Canada <b>Karen Farley</b>	The Voices of Environmental Communication: from the Brazilian Salt Industry to New Environmental Justice Perspectives <b>Andre Wolmer de Melo</b>	Youth attitudes and preferences for carbon labels on food products: Insights from Argentinian and Canadian consumers <b>Sebastian Roa-Goyes</b>	The absence of habitat on farms creates a significant difference between density of insect pests and predators in farm crop monocultures <b>Aleksandra Dolezal</b>

<b>Graduate Student Talks 2</b> <b>12:10 pm – 1:00 pm</b>			
<b>Room 1</b>	<b>Room 2</b>	<b>Room 3</b>	<b>Room 4</b>
<b>Canadian Context</b>	<b>Climate Justice and Environmental Accountability</b>	<b>Connections to Nature</b>	<b>Global Environmental Health</b>
Packaging Intention-Behaviour Gap in Canadian Consumers' Food Purchasing Decisions <b>Karen Farley</b>	The Last of Us: Alienated Environments, Alienated People <b>Ryan Haddad</b>	What is holding up progress in countering ecosystem decline and infrastructure service failure with natural asset management? <b>Sawroop Sandhu</b>	Uncool urbanism: exploring sustainable alternatives for urban cooling in Qatar <b>Hassan Bashir</b>
Micro-Scales of Production and Consumption in the Circular Economy in London, Ontario, Canada <b>Martha Paiz-Domingo</b>	You are what you eat, from your head to your feet <b>Ashar Mobeen</b>	Environmental Education in School Gardens: A Ground to Blossom? <b>Mariam Takkouch</b>	Linking Blue Carbon Ecosystems <b>Navya Vikraman Nair</b>
Knowledge On Tap: Measuring Sustainability Impacts of Ontario Craft Brewers, <b>Patrick Bosworth</b>		The Experience of Connection With Nature While Forest Bathing: An Interpretative Phenomenological Analysis <b>Shawn Slade</b>	

## **Graduate Student Talks**

### **Abstracts**

**11:00 am – 12:00 pm, 12:10 pm – 1:00 pm**

**Daniel Amoak, University of Western Ontario**

*Ecological grief among Smallholder Farmers in Semi-Arid Ghana: A Study on the Emotional Toll of Climate Change*

Ecological grief is an emerging mental health concern and is projected to increase as climatic stressors worsen. Climate change and variability pose significant threats to the mental health of smallholder farmers residing in harsh ecological zones in SubSaharan Africa that rely solely on rain-fed agriculture. These farmers experience feelings of grief, despair, distress, and uncertainty related to climate-change-induced ecological losses. As extreme climate change events increase in intensity and frequency and reinforces existing vulnerabilities such as poverty and poor health, climate induce ecological grief will worsen among smallholder farmers due to their low adaptive capacities and resilience. Yet, ecological grief is largely unexplored within a Sub-Saharan African context as most studies have concentrated on high-income countries. Using data from semi-structured interviews with farmers (n=60), we examine ecological grief among smallholder farmers in the harshest agro-ecological zone of Ghana in the context of a rapidly changing climate and agrarian regime. Our findings indicate a range of climate-related contexts in which ecological grief has been reported, including grief associated with physical ecological losses and grief attributed to loss of environmental knowledge, eroding culture and tradition, rising insecurity, and perceived emasculations. Additionally, we find gender differences in the triggers of ecological grief between men and women. This paper recommends that environmental policies should include measures that support farmers' mental health as climate change stressors worsen in agrarian areas.

**Victor Babin, Université de Montréal**

*By Any Means Necessary: Violence, Responsibility and Climate Justice*

Imagine that a large and powerful company pollutes a lake that is the only source of drinking water for the residents. It is making huge profits from it. As the damage grows, the company refuses to cooperate with the residents. The residents have tried many courses of action to no avail: dialogue has failed, advocacy has failed, demonstrations have failed, lawsuits have failed, democratic change has failed, and so on. Worse, democracy has failed because it is the policy makers themselves who subsidize the polluting enterprise to ensure the continued operation of the toxic facilities. Scientists agree that if nothing is done quickly enough, present and future generations of residents will suffer and die. Our situation with the fossil fuel industry is similar. In the face of the threat of human extinction, the climate justice movements almost universally follow the same motto: we must always remain peaceful.

In this paper, I examine whether it is legitimate to deviate from this motto in the context of the fight for climate justice. I therefore analyze the main pacifist arguments, which consider violence to be illegitimate. I then examine the opposite position in two senses: (i) violence against people, and (ii) violence against property. In light of these considerations, I develop the idea that there

is a kind of responsible uncivil resistance, that is, a form of resistance that does not reject outright the possibility of employing violence when done reasonably and in an effort to fulfill a collective responsibility towards a structural injustice. I argue such resistance can and ought to employ violence to preserve or restore the possibility of justice.

**Hassan Bashir, University of Waterloo**

*Uncool urbanism: exploring sustainable alternatives for urban cooling in Qatar*

According to the UN, there will be a sharp rise in urban heat stress by 2050. This rise in urban thermal vulnerability has serious implications for the three dimensions of sustainable development: economic, societal, and environmental. Yet, cooling remains a critical blind spot in current sustainability debates as no cooling-related term features in the text of the 17 SDGs or their 169 targets. The thermal comfort of societies has always been intimately connected with notions of modernity, progress, and civilizational development. The fastest urban growth is taking place in the Global South where newly minted cities are often the hotspots of thermal vulnerability. In the oil-rich countries of the Persian Gulf, the state provides heavy energy subsidies to residents and businesses in order to urbanize. These subsidies have created an apathy towards notions of efficiency and conservation. Air conditioning, therefore, has become the invisible backdrop to everyday life. This linkage is most visible in the case of Qatar, which has invested heavily in hosting prestigious international sporting and cultural events such as the 2006 Asian Games, the 2022 FIFA world cup, and the upcoming 2030 Asian games. In hosting these events, Qatar has progressed from cooling indoor spaces to air conditioning the outdoors, (i.e., stadiums, parks, outdoor shopping malls, etc.) which signifies an increased reliance on energy-intensive solutions as the preferred option to deal with local heat. Achieving sustainable urban cooling (SUC) in Qatar is not possible by focusing on a single policy, social program, or new technology because thermal management transcends sectoral boundaries. This presentation delineates the complexity involved in achieving sustainable urban cooling in Qatar and proposes adopting a cross-sector partnerships (CSP) approach.

**Patrick Bosworth, University of Waterloo**

*Knowledge On Tap: Measuring Sustainability Impacts of Ontario Craft Brewers*

Small businesses, which account for 98% of all employer businesses in Canada and employ two-thirds of the labor force, have largely unknown impacts on their host communities' economic, social, and environmental attributes. This is despite their significant contributions to the Canadian economy. Environmental regulations and corporate social responsibility paradigms typically only apply to medium- and large-sized businesses, resulting in a lack of knowledge of sustainability impacts on resource-intensive small businesses in North America. The Ontario craft beer industry, which is small by definition and resource-intensive, is a suitable industry for analysis. The research aims to uncover the sustainability impacts of small businesses by answering two questions: how can the sustainability impacts of craft brewers be measured, assessed, and predicted, and what craft brewery characteristics modify host community impacts?

The research will build and analyze datasets to discover sustainability impacts and create recommendations that facilitate sustainable brewing in Ontario. Phase 1 involves collecting and harmonizing a spatiotemporal dataset combining brewery attributes and community sustainability variables at a high degree of geographic granularity. Phase 2 involves statistical analyses of the dataset using a cohort event study approach with staggered difference-in-

differences methods. In Phase 3, the author will interpret the mathematical results to develop recommendations for governments and brewers in Ontario and beyond.

**Aleksandra Dolezal, University of Guelph; Andrew MacDougall, University of Guelph**

*The absence of habitat on farms creates a significant difference between density of insect pests and predators in farm crop monocultures*

Arthropod pests in industrialized agriculture are regulated by interactions among plant resources, arthropod predators, and chemical spraying, with significant implications for crop damage if one or more of these factors fail to prevent outbreaks. Despite significant control especially spraying, annual losses to pests in crop monocultures are growing globally with threats to food security. Here, we test pest regulation and crop damage along a factorial gradient of management intensity, from “fully industrialized” with sprayed monoculture and no permanent-cover non-crop habitat to “conventional organic” that was unsprayed with mixtures of monoculture and non-crop habitat. Working with soybean, we used insect cages and weekly crop sampling to test for top-down regulation of pests, especially in the absence of spraying. We also test whether non-crop habitat promotes pest outbreaks or builds predator communities that provide biological control and the influence of habitat and chemicals on farm arthropod communities as a whole. Among 60,000 insects sampled over our four farm types, we found: 1) the presence of non-crop habitat suppressed aphid density overtime far more than then pesticide applications; 2) the impacts of chemicals on pests and on the community was significant with the presence of semi-natural habitat near crops; 3) Crop damage and crop yields were similar with and without chemicals, suggesting that inputs could be less with more habitat and produce that same crop yields. Because decisions about management practices can drive environmental sustainability outcomes, policy should support farms that already use agroecological practices while encouraging increased use of agroecological practices such as habitat addition adjacent to crop edges.

**Karen Farley, University of Waterloo**

*Packaging Intention-Behaviour Gap in Canadian Consumers’ Food Purchasing Decisions*

Canada has a deep-rooted reliance on single-use plastic in the food industry. Fifty percent of the plastic used in Canada is for single-use items, including food packaging (Elmslie & Wallis, 2020). Nearly three-quarters (73.4%) of Canadian consumers surveyed support banning single-use plastic food packaging in favour of more sustainable food packaging options according to a consumer survey by Dalhousie University (Walker et al., 2021). Despite Canadian consumers’ intentions, barriers at the point-of-purchase, including the higher price tag and limited availability of food without plastic packaging, limit the actual purchase of plastic-free food products in Canada. Recently consumers have faced additional barriers to purchasing plastic-free food products, including increased price sensitivity due to rapid food inflation (Fradella, 2022) and safety fears through the COVID-19 pandemic (Scaraboto et al., 2020; Walker et al., 2021). This quantitative research project was undertaken to: 1) examine the point-of-purchase priorities of Canadian consumers, and 2) establish any gap between consumers’ intention and their actual purchasing decisions when food shopping. The Theory of Planned Behavior explains the connection between consumer intention (“intention”) and actual purchasing decisions (“behaviour”) (Arvola et al., 2008; Chao, 2012; Hansen et al., 2004; Nguyen et al., 2020; Testa et al., 2020; Yadav & Pathak, 2016). Data was collected from 226 Ontario food shoppers using a custom mobile app to capture consumers intention before shopping for food and their actual purchasing decisions while food shopping. The data of 95 participants who completed the study



- a competition rate of 42.04% - was segmented into Green (20%) and Grey (80%) consumer groups for comparative analysis between the two groups. The data analysis reveals that Green and Grey Consumers prioritise food product features differently, especially for packaging. The difference analysed for packaging shows that Grey Consumers are more strongly influenced by their in-store purchasing decisions while intention and behaviour of Green Consumers align more closely. This research provides evidence of consumer support for the shift to more plastic-free food products in Canadian supermarkets. The custom mobile app built for this research project will be further developed into a commercially viable version to support the shift away from single-use plastic food packaging.

**Karen Farley, University of Waterloo; Maliha Tariq, University of Waterloo; Kayleanna Giesinger, University of Waterloo**

*Sustainable Menstruation: Examining the social, environmental and structural barriers to adopting reusable menstrual products in Canada*

Sustainable menstruation encompasses the dual objectives of solving social problems and environmental issues relating to managing menstrual flow. In Canadian public policy, menstrual product marketing and advocacy, current social issues – menstrual inequity, period poverty, and the stigma of menstruation – have taken priority over environmental issues – waste management, resource depletion, and ecotoxicity. A lack of academic research perpetuates the gap. The current menstrual landscape would benefit from a more nuanced critical analysis of the interconnectivity between socio-cultural and environmental issues emerging within the menstrual problem-solving landscape. Research on the Canadian menstrual landscape by Karen Farley, Maliha Tariq, and Kayleanna Giesinger will be presented. We show how the hyper-fixation on social issues by policymakers, menstrual suppliers, advocates, and researchers, has contributed to the neglect of environmental impacts and contributes to larger systems of inequality preventing true menstrual sustainability. We use both the reproductive justice theory and environmental justice theory as well as an overall lens of intersectional feminism to examine the issues relating to sustainable menstruation in Canada fully. We conducted a scoping review to examine menstrual policy, advocacy initiatives, and supplier priorities. We also reviewed existing literature from government policy, menstrual suppliers, advocates, and academia in Canada. Our research shows how a hyper-fixation on social issues by policymakers, menstrual suppliers, advocates, and researchers, has contributed to the neglect of environmental impacts and contributes to larger systems of inequality preventing true menstrual sustainability. We present seven recommendations for change that governments can enact to overcome these socio-cultural, environmental and structural issues.

**Alper Güngör, McGill University**

*Climate Change and Moral Responsibility*

Many philosophers discuss the tragedy of the commons narrative by the illustration of a grazing field: A group of individuals grazes animals on a piece of land, overuse of which results in the depletion of the land. The story ends up with a tragedy of the destruction of the land which is the worst result for everyone benefitting from it. Philosophers starting as Garrett Hardin (1968) suggest that to prevent the tragedy, “a mutual coercion mutually agreed upon” is much needed (Hardin, 1968; Kahn, 2014, 223; Johnson, 2003, 274). I will call this approach an agreement approach. Basic idea is that without a mutual agreement, it is not possible to locate either the harm or the agents who bear moral responsibility. This basic idea is shared by many adherents of the agreement approach.



This paper suggests that Theresa Scavenius's tragedy of the few narrative can be framed as the tragedy of the commons. The upshot of this suggestion is that Scavenius's insights can be best utilized when adapted to the established narrative of the tragedy of the commons. First, I consider the tragedy of the commons narrative from Elizabeth Kahn's perspective. According to Kahn, climate change is an essentially aggregative harm, meaning that climate change is the result only of the totality of individual harms. Then, I consider her formulation of essentially aggregative harm from the perspective of Scavenius. I argue that the term "individual" may refer, also, to incorporated entities. I conclude that reframing the tragedy of the commons narrative from the perspective of the tragedy of the few enables us to formulate (i) a detailed collective agreement, (ii) agents who bear moral responsibility for the harm.

**Ryan Haddad, University of Western Ontario**

*The Last of Us: Alienated Environments, Alienated People*

The immensely popular video game *The Last of Us* has been once again thrust into the realm of public opinion with the ongoing release of the television adaption currently being aired on HBO. At its core, the game tells the simple story of a man and a child trying to survive. On another, deeper level, the game depicts, in beautiful detail, a world facing environmental collapse, and how such environmental collapse gradually turns into societal collapse; people turning on each other without hesitation, children being exposed to horrifying circumstances, and the constant struggle of attempting to navigate the harsh world alone. The game meticulously translates people's disconnectedness with themselves and each other as an extension of their disconnectedness with the natural state of the world. Establishing meaningful connections is what drives the plot forward and gives substance to the story and offers weight to the characters' decisions. Gathering from Robin Wall Kimmerer's *Braiding Sweetgrass* (2013) and Richard Powers's *The Overstory* (2018), my talk emphasizes the contemporary importance of connections, both ecological and societal, and how both influence one another relationally. Additionally, my talk blends together my three sources to offer insight into how sustainability efforts can prove essential to reconnecting with our sense of self and society at large.

**Munriat Idris, University of Western Ontario**

*Investigating global air pollution patterns with their associated health implications: a case study of Nigeria*

Increased fine particulate matter pollution has been linked to premature mortality and heightened susceptibility to pulmonary and cardiovascular diseases. Furthermore, the global economy suffers a loss of over 225 billion U.S. dollars annually due to this pollution's adverse effects on productivity. However, it's worth noting that the pollution distribution is not uniform across the globe, and specific locations may report higher pollution levels than actual or vice versa. This study uses a case study of Nigeria to investigate the patterns of global air pollution and their associated health implications. First, global air quality data worldwide is collected and analyzed, focusing on particulate matter (PM<sub>2.5</sub>) as the main pollutant and using ArcGIS 3.0 to determine the hot and cold spots across the globe. The hot and cold spots analysis results identified Nigeria as a hot spot and utilized the Benefits Mapping and Analysis Program (BenMAP) to estimate the health and economic effects of air pollution. The BenMAP-CE software calculates the quantity and monetary value of health outcomes resulting from air quality shifts, focusing on either particulate matter or ground level ozone. The study finds that air pollution in Nigeria is a significant problem, with high levels of PM<sub>2.5</sub> exceeding international standards. The study recommends measures to reduce air pollution, including adopting clean

energy sources, increasing the use of public transportation, and implementing stricter regulations on industrial and household emissions. The study also highlights the need for global cooperation to address the issue of air pollution and mitigate its impacts on human health and the environment.

**Amal Javed Abdullah, York University**

*Food as Commons on Colonized Indigenous Lands*

This presentation asserts the right of the people to food as commons -- that is, for the people to be entitled to dignified access to healthy, safe, appetising, culturally appropriate food, regardless of affordability -- on contested and unceded Indigenous lands. In doing so, it explores two problematics: one, it argues against existing market systems that control and allow or deny access to food through market actors (i.e. grocery store conglomerates) and proposes that the production and control over food should be shared in common among the people as a basic right to citizenship. It reviews several ways of creating a collective and collaborative food system where production is local, sustainable and shared by the people, such as urban agriculture initiatives, or a national school food program. Once having established the need to understand food as a common good, it then moves on to the second problematic, questioning what true food justice can look like on occupied, settler colonial lands. We have reason to be wary that increased control on the food system by the settler government, though intended to improve access to food and equalise entitlement, might not have the impact we want for Indigenous peoples, racialised peoples, low and middle-income communities and other vulnerable groups. For example, urban greening initiatives, such as rooftop gardens that increase access to fresh, local and sustainable produce, might have the joint effect of green gentrification, thereby raising local rent and property prices, and pushing out low and middle-income residents who are not able to keep up with higher costs of living. While the presentation proposes some ways forward, it also ends on an open question for the audience to think about new ways of imagining a food system based on justice and access for all.

**Hannah Klassen, University of Ottawa**

*Modeling the Relationship Between Biodiversity and Traditional Food Dietary Diversity in First Nations Populations Across Canada*

Indigenous health and well-being, including their nutritional status, are poor compared to the general Canadian population. Many causes of these disparities include racism, poor access to health resources, dwindling health of the environment, and the nutrition transition. Dietary diversity in human populations can contribute to nutritional quality and may also be a function of ecological biodiversity. Available research proves this association in many highly biodiverse locations worldwide but has yet to be evaluated in Canada. A particular population of interest is First Nations across Canada, as they rely on locally harvested traditional foods (TF) to maintain nutritional health. However, TF access is endangered due to various environmental conditions. The objective of this study was to evaluate the relationship between ecozone biodiversity and nutritional outcomes in the form of dietary diversity in First Nations individuals across Canada. A statistical model evaluating the many variables responsible for predicting Traditional Food (TF) dietary diversity in First Nations across Canada was developed. Nutritional and covariate data (demographic, socioeconomic, cultural, and ecological) were obtained from the First Nations Food Nutrition and Environment Survey (n = 6161). Dietary diversity indices reflecting consumption of TFs were obtained from both 24-hr recalls and a year-long food frequency questionnaire. NatureServe, Birdlife International, and range map data from multiple sources

provided the ecozone biodiversity data. Ecological Species Richness (ESR) showed a negative relationship to dietary species richness, meaning that those living in areas with lower rates of biodiversity tend to consume more TFs. Variables related to culture, like prioritizing TFs in the diet, accessibility of TFs, having a hunter in the family, and living in a remote community, were more important factors in predicting higher consumption of TFs. These results reveal cultural practices and improved access to TF resources through environmental protection as areas for programming and for further study.

**Karen Koornneef, Lakehead University**

*Naturalization of indigenous plants for phytoremediation in decommissioned quarries in Ontario*

Abandoned pits and quarries are increasing across Ontario as infrastructure grows and industrialization creates a demand for aggregates. The extraction of aggregates is devastating to the pre-existing and surrounding ecosystems and leaves contaminants in the soil, which can leach into nearby water sources. Current rehabilitation processes are slow to initiate, often leaving sites abandoned for years before planned rehabilitation of the site commences, during which time primary succession has occurred. Phytoremediation, the use of vegetation and their microbes to reduce contaminants from soils, has been found to be cost effective and is gaining attention in the clean-up processes of decommissioned mining and quarry areas. This type of rehabilitation normally practices afforestation or other developments using nursery grown and managed vegetation chosen for specific purposes. This study investigated the potential of indigenous plants as local seed sources for revegetation and phytoremediation of decommissioned pits and quarries in Ontario, and whether they will spontaneously naturalize, thus providing a natural clean up of the contaminants from these areas while providing a beneficial ecosystem for a variety of wildlife. Data was compiled using of peer reviewed research using key search terms. This research identified 67 plant species native to Southern Ontario which were effective in remediating the 19 identified contaminants found to remain on decommissioned quarry sites. The group of plants scored a low Florist Quality index score which is consistent with those species found growing on highly disturbed land such as brownfields. When naturalized, the sites have the potential to develop into an ecosystem akin to an Alvar which provide wildlife corridors and much needed habitat for invertebrates and at-risk species. Alternatively, the plants may be harvested for heavy metal reclamation through Phyto-mining. This research may be useful for site managers in determining rehabilitation methods at various decommissioned mines and quarries.

**Ashar Mobeen, University of Western Ontario**

*You are what you eat, from your head to your feet*

My presentation addresses unconventional aesthetic perspectives on food and agriculture. I explore how our physical and psychological connections to the planet are mediated by the food we eat, drawing on language from the environmental humanities, critical plant studies, astrobiology, science-fictional ecologies, and visual arts. Every element present in our bodies, save hydrogen, was created via nuclear fusion in the hearts of dying stars throughout history. In this way, we are made of elements ranging from 4.6 to 13.8 billion years old! Not only do the fruits and vegetables that we consume today contain these same elements, but they also contain energy trapped from the light that left the sun only eight minutes before it was absorbed by a plant and only weeks before that plant was harvested. The bottom line is that we are intrinsically impermanent, continually rebuilt, and constantly evolving. Realizing how fluid and permeable we are and how impermanent everything around us truly is, we must think

differently about the substances that we take into our bodies to quench our thirst and feed our hunger. This material does not simply flow through our gut but is assimilated into the very structure of our bodies until, after some time, it leaves it again in some other form. You are what you eat, from your head to your feet. Hence, in the face of rising food insecurity and the collapse of ecosystems and biodiversity, it is critical to re-evaluate not only our position in the cosmos but also with respect to the resources we extract from the very land we call home.

**Kamaldeen Mohammed, University of Western Ontario**

*Mapping Climate and Malaria: Climatic factors and plasmodium falciparum prevalence among children in Ghana*

Malaria is a major public health problem especially in Africa where 94% of global malaria cases occur. Malaria prevalence and mortalities are disproportionately higher among children. In 2019, children accounted for 67% of malaria deaths globally. Recently, climatic factors have been acknowledged to influence the number and severity of malaria cases. Plasmodium falciparum—the most deadly malaria parasite, accounts for more than 95% of malaria infections among children in Ghana. Using the 2017 Ghana Demographic Health Survey data, this study examined the local variation in the prevalence and climatic determinants of child malaria. The findings showed that climatic factors such as temperature, rainfall, aridity and Enhanced Vegetation Index are significantly and positively associated with Plasmodium falciparum malaria prevalence among children in Ghana. However, there are local variations in how these climatic factors affect child malaria prevalence. Plasmodium falciparum malaria prevalence was highest among children in the south western, north western and northern Ghana.

**Katelyn Mountjoy, McMaster University**

*Radionuclides as a Driving Factor of Arctic Amplification*

This research unpacks some of the complexities and interactions among multiple drivers of climate change by examining the role of radionuclides in the Arctic, where abnormally high levels correlate with the extremely rapid warming taking place (over three times the global average, i.e., Arctic amplification). This research also considers climate change justice and equity by examining Russia's role as an intentional emitter of radionuclides. The objectives were to examine the abnormally high levels of radionuclides found in the Arctic that previous studies have not been able to account for and provide a rationale for their elevated presence as well as their role in Arctic warming. This research tackles a frontier issue and attempts to fill a knowledge gap in the Arctic by using a diagnostic analysis to explore the correlations between the highly elevated levels of radionuclides found in the Arctic with Russia's atmospheric radionuclide emissions and Arctic amplification. This research correlated the dramatic climate change taking place in the Arctic with high levels of radionuclides originating from Russia and provided a basis for their use as a climate modification strategy by the Arctic nation that would provide enormous economic and geopolitical benefits, and serves as a potential important case study for climate change justice and equity. This research will contribute to a diverse and balanced program by focusing on climate change in a remote region of the world—the Arctic—while also considering an as-of-yet largely ignored driver of climate change, radionuclides, highlighting the importance of identifying multiple climate vulnerabilities when implementing actions. This research is expected to have far-reaching implications for international policies and the UN's Sustainable Development Goals going forward, and is expected to facilitate dialogue among various stakeholders, including incorporating Indigenous and local knowledge.

**Martha Paiz-Domingo, University of Western Ontario**

*Micro-Scales of Production and Consumption in the Circular Economy in London, Ontario, Canada*

Many potential solutions or frameworks are presented as the climate crisis impacts Canadian cities. One such solution is the Circular Economy (CE), which focuses on closing resources and materials to create more sustainable and self-sufficient production and consumption. However, previous CE scholarship focuses on larger and more formal dimensions of the CE at the municipal level, ignoring a critical piece to understanding the CE landscape. To better understand the urban CE in a mid-size city, we must consider informal/grassroots contributions to urban CE in a mid-size city. This study uses a non-exhaustive list of CE actors, events, and communities over a six-month timeframe based on the availability and searchability of events. This inventory will inform the relational mapping of these informal/formal urban CE actors and how they intersect in a mid-size Canadian city.

**Sebastian Roa-Goyes, University of Western Ontario**

*Youth attitudes and preferences for carbon labels on food products: Insights from Argentinian and Canadian consumers*

The climate impact of food production is undeniably a growing issue that transcends borders and generations. Therefore, communicating the climate damage of food products efficiently to younger generations is imperative for more environmentally knowledgeable purchasing decisions for a sustainable future. Nevertheless, the perception of carbon labelling by youth has been surprisingly understudied. This cross-cultural study investigates youth familiarity with carbon footprint and carbon labels and explores attitudes and preferences toward six carbon labels in Argentina and Canada. Using a mixed methods approach that integrates a quantitative questionnaire with an incomplete block design and open response questions, we found that Canadians have higher familiarity with the term carbon footprint and both Argentinians and Canadians have low level of familiarity with carbon labelling. Regarding Carbon label assessment and preference, participants highly rated and selected labels with a traffic light system with colours from green to red and poorly rated labels that mainly include raw CO<sub>2</sub> numerical information. The findings suggest that there is a demand for clear, transparent, and reliable carbon footprint information on food; however, a low level of familiarity might negatively affect the use of carbon labels for climate-friendly food purchasing decisions. Overall, results indicate that Argentinian and Canadian youth are receptive to carbon labels on food, but the effectiveness of implementing this mechanism might be limited without communication strategies from private entities and public institutions.

**Jan Rosete, Carleton University**

*Exploring Water Co-Governance in Canada*

This paper will examine Canada's water governance framework, its ability to engage with Indigenous communities, and judge this current framework against the Organization for Economic Co-Operation and Development (OECD)'s internationally renown Principles of Water Governance. This paper will also analyze the Waikato River Authority in New Zealand as an example of the co-existence of traditional knowledge (TK) and Western Knowledge in water governance strategies. To conclude the paper will introduce possible recommendations towards what good water governance should like and address any underlying obstacles in pursuit of this goal. This paper describes a 12-prong approach that possesses specific themes that every good governance system needs. These themes are collectively supported by international

communities and organizations, as well as by academics in policy management. A combination of these tenets, while integrating local teachings and knowledge systems, would help create a good water governance system. There is no one universal governance system so it is imperative to incorporate local initiatives that have lived by the water into the framework, for a more tailored solution to specific local issues.

Canada's current water governance approach is unfortunately weakly structured and deeply fragmented. One core component in the current structure is how it fails to mobilize the TK of the Indigenous Peoples in the area. Their participation in good water governance is crucial if any improvement wants to be made. Without the proper engagement of Indigenous communities, this leaves many gaps to Canada's current modern approach to water governance. A new water governance schema that mobilizes both ideologies is vital to ensure not only our good health and wellbeing, but also would take a step forward in terms of co-governance and ultimately reconciliation with Indigenous groups that reside in Canada.

**Sawroop Sandhu, University of Waterloo**

*What is holding up progress in countering ecosystem decline and infrastructure service failure with natural asset management?*

Contemporary environmental and land-use planning in many Canadian municipalities is challenged with two key problems that have grown with increasing urban development: 1) natural ecosystems decline and 2) grey infrastructure service failure. The 2020 Living Planet Report Canada highlighted the continuing decline of many natural ecosystems in remote areas and near to sprawling Canadian cities. These risks are heightened, with the possibility of climate change-driven extreme weather resulting in grey infrastructure failure. A possible approach for slowing or reversing these concerns is the use of ecosystem services provided in the form nature-based solutions (NBS). As MNAM is being applied by municipalities, insufficient monitoring is causing a lack of evidence that would be required to demonstrate MNAM's ability to counter ecosystem decline and grey infrastructure service loss. We applied a standardized evaluation framework to assess MNAM progress in six case-study municipalities in Canada. Data were collected with extensive review of municipal documents (e.g., Official Plan changes, Council meeting notes, budget allocations) and interviews with key municipal decision-makers. Data analysis was performed through thematic coding. The analysis reveals that while many municipalities are increasing their awareness and capacity for MNAM implementation, large barriers to progress remain including limited enabling policies and lack of effective municipal governance. Especially changes in government and administrative organization tend to undermine the required long-term efforts in support of MNAM. Municipalities must overcome these barriers to allow further progress towards restoration and conservation of natural assets that would improve the state of urban natural ecosystems and urban service delivery.

**Zeina Seaifan, University of Toronto**

*Marginalized Diasporas in Taylor-Massey, Toronto: Impacts of Sustainability - Initiatives on Developing Communities*

Taylor-Massey, Toronto is an immigrant-majority neighbourhood which is designated as a neighbourhood improvement area by the City of Toronto. This indicates that there are great social inequities present in Taylor-Massey. Taylor-Massey specifically observes low-income and high unemployment rates. Though diasporic communities are increasingly regarded as influential global actors by policymakers, NGOs, and for-profit organizations, there is a gap in



academic literature surrounding their positionality in the intersection between sustainable living and community development. This research thus looks at diasporic communities in Taylor-Massey, and their relationship with the community health centre Access Alliance Multicultural Health and Community Services. Specifically, how are Access Alliance sustainability and environmental-related programming understood, accessed, and taken up by diasporic communities? In connection, three sub-questions will be explored: (1) How are Access Alliance sustainability-related practices adopted by diasporic communities that identify as racialized in Taylor-Massey? (2) What role do the cultural backgrounds of diasporic individuals have in understandings of sustainable practices? (3) How do barriers previously identified in Taylor-Massey impede the efforts of Access Alliance? These barriers include structural barriers within their homes that prevent the adoption of environmental-related habits and internal barriers such as language barriers and culture shock.

Interviews and participant observations guided by an ethnographic approach will be used to explore this core research question. This project will contribute insights into how the various cultural backgrounds of diverse, diasporic groups impact and shape their understanding of sustainability. Anticipated findings also include understanding how barriers in Taylor-Massey prevent diasporic marginalized community members from accessing Access Alliance initiatives. These findings are expected to contribute to advancing understandings of the intersection between sustainability and diaspora studies.

**Shawn Slade, University of Western Ontario**

*The Experience of Connection with Nature While Forest Bathing: An Interpretative Phenomenological Analysis*

Connection With Nature (CWN) is a person's subjective sense of oneness with nature. It tends to be studied as a relatively stable trait that fluctuates based on exposure to and experiences in nature. The premise that CWN is essential for human health and well-being has echoed across time and cultures. Ecopsychological research, theory, and practice support the notion that (re)connecting humans with nature can address widespread health problems and ecological issues. To date, survey-based methods dominate this field of research. However, a quantitative and trait-based approach to studying CWN is not well equipped to explore the nuances and unconscious processes of subjective experience.

Interpretative Phenomenological Analysis (IPA) was the methodology employed to explore the experience of CWN in the forest setting and how informants make sense of their experience concerning their health and well-being. This study utilized two semi-structured interviews to collect descriptive data on this experience with 10 informants residing in Ontario, Canada, who identify as valuing the experience of CWN in the forest. The first interview took place on Zoom, and the second was in a forest setting of the informant's choice. Data analysis and interpretation led to the creation of four themes and seven superordinate themes that captured the essence of the experience of CWN in the forest and what that meant to the informant's health and well-being.

Becoming more aware and grounded in the body enhanced relaxation, energy, and embodied cognition; Becoming more temporally aware through the experience enhanced mindfulness and the feeling that time, roles, and responsibilities were momentarily suspended; Being in a nourishing relationship as well as nurturing a relationship with others, nature, and the transcendental; and having a personal wellness promotion practice which affords self-care and



personal development. Finally, interpretative findings are discussed in relation to the extant health and well-being literature.

**Mariam Takkouch, University of Western Ontario**

*Environmental Education in School Gardens: A Ground to Blossom?*

The worsening impacts of climate change call for adopting strategic and immediate actions simultaneously. Educating the new generations about environmental problems and fostering their environmental stewardship can serve both current and future targets. Accordingly, educational programs all over the world are being called upon to prioritize environmental education (EE). From a practical stance, garden-based learning is an instructional strategy that uses the garden as a dynamic teaching setting. School gardens appear to be a promising tool in EE, and thereby addressing gaps in EE policy implementation. My research investigates the role of school gardens in fostering connections between children, the community, and the environment, in the context of Ontario schools. This project advances knowledge about school gardens as a setting that nurtures environmental awareness and stewardship of students from all backgrounds. The project also informs teachers about their important role as agents of change in EE.

**Navya Vikraman Nair, University of Waterloo**

*Linking Blue Carbon Ecosystems*

Small-scale fisheries (SSFs) sustain millions of livelihoods worldwide by contributing to food security and income. However, small-scale fishing communities are marginalized and vulnerable due to cumulative impacts of sea-level rise, hydrological changes, hydrodynamic disruptions, overexploitation of resources, aquaculture, coastal and inland habitat loss, overfishing, lack of livelihood alternatives, along with food insecurity, occupational displacement, and outmigration. While most studies on SSF vulnerability have focused on economic, social, and political factors, limited research links these vulnerabilities with changes in water quality. My research addresses this gap by examining the effects of water quality changes on the vulnerability of SSF and using this examination to advance potential approaches for achieving viability. Our findings suggest ways in which SSF communities can respond to these vulnerabilities. Overall, the aim is to foster knowledge on sustainable management of SSFs by closely linking hydrological changes and the importance of pertaining to sustainable development goals to achieve good water.

**Adrian Wawrejko, University of British Columbia**

*'Constructing British Columbia': the Role of the Environment in the notion of British Columbian Identity, 1890-1970*

The characterization of British Columbia underwent a major transformation between 1890 and 1970. Following the colonization of this vast space by mostly anglophone settlers, many saw British Columbia as both an escape from the industrious and modern world – symbolized by the growing urban centres throughout Eastern Canada, Britain, and the United States – and a vast land which presented opportunities for economic development. Provincial organizations in British Columbia sold a narrative of not only an untouched 'wilderness' that individuals could retreat to, but a space that was ready for industrial growth. Therefore, British Columbia developed a cultural identity based on possessing both scenic environments, like the Yoho National Park, as well as bountiful amounts of natural resource wealth including minerals and

forests. By positioning the environment at the core of the construction and evolution of cultural identity, this paper considers two broad questions: how did the portrayal of the environment shape British Columbian emerging ideas of a distinct British Columbian identity and what made it possible for individuals to reconcile the seemingly diametrical identity of possessing boundless amounts of natural beauty, on the one hand, and being significant actors in natural resource extraction, on the other? This paper uses the artistic depictions of the British Columbian environment, through paintings of landscapes, photographs and postcards. Using displays of art is crucial as art, be it fine art sold to collectors and museums or mass-produced and mass-accessible art produced for commercialized reasons such as postcards and advertisements, contributes not only to the perpetuation of identity, but also helps to project the settler 'ideal' of space and environment. By doing so, this paper enhances scholarly understandings of Western identity and its development.

**Andre Wolmer de Melo, University of Western Ontario**

*The Voices of Environmental Communication: from the Brazilian Salt Industry to New Environmental Justice Perspectives*

The Brazilian salt industry generates more than 100 million dollars in revenue for the domestic and international markets yearly and it is responsible for around 75 thousand jobs in the Northeastern state of Rio Grande do Norte (RN), which concentrates 95% of the production. Studies by environmental protection agencies indicate a series of environmental damages caused by the maintenance of salt piles in mangroves and river estuaries, essential for biodiversity and environmental balance. This research consists of a quali-quantitative analysis of the media coverage on the actions of the Federal Prosecution Office in the RN (MPF/RN) in favor of the removal of irregular salt piles. I sought to understand how the position expressed by the MPF/RN was portrayed by the media and which voices were more prominent. The Content Analysis study shows that the digital media had, for the most part, a passive posture and repeated the contents disseminated by MPF/RN's press office, leading to an emphasis on the environmental and juridical fields in the informative discourse. Nevertheless, a great part of the news approached the socio-environmental issues in a fragmented and superficial way, distancing itself from the proposal of engaged Environmental Journalism. As a result, relevant voices related to the matter were neglected, such as the industry's workers and local communities. These findings lead to further research questions regarding how the media reflects environmental injustice and racism. Expanding the research scope to Brazilian environmental issues in an international perspective, I am interested in understanding the demands and opinions of the people most affected by environmental degradation - including racialized working classes and traditional communities -, and exploring how communication can be applied as a tool to amplify their reach and improve society's awareness and demand for change.

## **Keynote speaker**

# **Promoting Gender Equality and Social Justice in the Global Green Economy: Opportunities, Constraints, Contradictions, Disruptions**

**IGAB Atrium, Western University**

**2:00-3:00 pm**

**Bipasha Baruah**



University of Western Ontario

Canada Research Chair in Global  
Women's Issues,  
Tenured full professor in the  
Department of Women's Studies  
and Feminist Research at the  
Western University

## **Promoting Gender Equality and Social Justice in the Global Green Economy: Opportunities, Constraints, Contradictions, Disruptions**

Countries around the world are experimenting with ways to make their economies less carbon-intensive by creating new green jobs, developing cleaner technologies, or by retrofitting existing sectors such as energy, forestry, agriculture, manufacturing, water and waste management, construction, and transportation. The transition to a green economy is underway in industrialized, emerging and developing economies. Since low-carbon economies are more labor intensive than fossil-fuel based economies, which tend to be more capital intensive, the transition to a global green economy is creating millions of new jobs and employment opportunities. That there is tremendous potential for employment generation in low-carbon economies is widely understood and accepted today, and there is consequently an active focus in academic, practitioner and policy circles on studying the technologies and financial instruments that will be required to enable the transition out of (or to lessen our dependence on) fossil fuels. Meanwhile, very little attention is being paid within these domains to the fact that large groups of people (women, migrants, workers with disabilities, Indigenous peoples, for example) were poorly represented in the fossil-fuel based economy and will also be marginalized in the green economy if social equity policies and programs are not proactively planned and implemented. This talk will discuss major challenges that must be overcome and opportunities that must be acted upon to ensure that a global low-carbon economy will be more socially just than its fossil-fuel based predecessor.