

**STTPA
Conference
2023**

University of
Toronto
Mississauga



**SUSTAINABILITY:
TRANSDISCIPLINARY
THEORY, PRACTICE,
AND ACTION** October 11 - 13



ABOUT

Sustainability Transdisciplinary Theory, Practice, and Action (STTPA)



Dates

October 10th: Welcome Reception

October 11th-13th: Conference

Location

The conference will take place at the University of Toronto Mississauga Campus.

Address:

3359 Mississauga Rd.
Mississauga, ON, Canada, L5L 5P4

Conference Spaces:

Instructional Centre (IB),
Deerfield Hall (DH), Maanjiwe
nendamowinan (MN), Kaneef
Rotunda (KN)

Contact

**Dr. Shashi Kant,
Conference Chair:**
shashi.kant@utoronto.ca

**Michelle Atkinson,
Conference Secretary:**
michelle.atkinson@utoronto.ca



WELCOME TO THE STTPA CONFERENCE

Dear Participants.

We are thrilled and excited with your presence at the second STTPA Conference. We had the first STTPA Conference in October 2019, and the plan was to organize the STTPA conference every alternate year. However, we had to modify our plan due to COVID-19 which gave a great relief to our planet – the Mother Earth. The global carbon emissions were reduced in 2020 due to COVID-19, but substantially increased in 2021 and 2022.

We hope that you will agree that the Mother Earth is sending very clear and regular signals, in the forms of the frequency and the magnitude of extreme natural events, that we are threatening the existence of humanity on this planet by our inactions and reluctance to learn to live in harmony with the planet and all living beings. We have no choice but to pull ourselves from the brink. We have responsibility and ethical duty to our future generations for their sustainable future. Sustainability is the core challenge of our era. From natural, scientific, and spiritual perspectives, we all are inter-dependent and inter-connected, and the Mother Earth is supreme. None of us – individual, academic discipline, corporation, country, first nation, government, or organization - can achieve sustainability alone.

We all have a role to play in the path towards sustainability.

We are very happy with your very active involvement in the STTPA conference. We are honored to welcome you to the UTM campus, and to this very open, inclusive, respectful, and multi-dimensional dialogue on creating a path to a sustainable future. These three days are truly special for all participants to come together from all backgrounds and disciplines to learn, share, exchange ideas, craft partnerships, and contribute meaningful thought, effort, and action towards change. Our goal, as we stated during the first STTPA conference, is to create a global sustainability family whose members are committed to moving the world forward in an integrative way.

Our greatest expectation is that the conference will provide a platform for a “New Way of Thinking about Global Sustainability” and you will engage deeply with the sessions, the shared content, and forge strong connections with conference delegates, colleagues, and community members. The platform and the connections will enable the integration of ideas and schools of thought, which will, we hope, transform into concrete, actionable pathways to sustainability.

We wish you all an inspirational start of a global sustainability journey and look forward to maintaining this family long after the conference and into the future.

With love and regards

Professor Shashi Kant
Chair, Organizing Committee STTPA Conference
Institute for Management & Innovation
University of Toronto Mississauga

INTRODUCTION

The Sustainability: Transdisciplinary Theory, Practice, and Action (STTPA) Conference engages transdisciplinary and intersectoral dialogue on the pressing issues, solutions, and actions for confronting the wicked problems and move towards greater sustainability. STTPA brings together voices of all stakeholders, such as academics, practitioners, policy makers, governments, Indigenous people, and civil society to create evidence-based and action-oriented agendas for transdisciplinary research, policy, practice, and action.

As we enter 2023, we continue to wrestle with challenges related to increasingly dramatic climate change, unrelenting inflation, a lingering pandemic, a widening income gap, growing social inequality, and human and Indigenous rights. These are not problems with easy solutions. They are “wicked” problems because they span traditional disciplinary boundaries and ways of thinking and finding solutions to them is inherently complex. In some cases, insights from academic researchers lead the way, whereas in others, industry, community, and government and Indigenous leaders and practitioners lead the way. In some cases, solutions involve global collaboration and enhanced curriculum in our educational systems. And in other cases, solutions are hyper-local and contextualized within specific communities, professions, and organizations. Such an ambitious agenda can only be achieved through critical, holistic, and integrative thinking that draws upon—but also moves across—the insights and knowledge produced through traditional academic disciplines, transdisciplinary and emerging academic fields, and areas of specialization as well as through policies, practices and actions.

As a path towards sustainability requires mutual respect and learning from each other, the organizing committee plans to organize three days of innovative, interactive, and unique program designed to create and strengthen a community of engaged conference participants. The conference includes plenary sessions, panel discussions, integrated (theory, practice, and action) sessions, concurrent sessions, workshops, poster (research and practice) presentations, exhibits and other formats of communication enabling all stakeholders to learn and contribute meaningfully to our path towards sustainability.

PROGRAM

Day 1 (October 11, 2023)

Registration & Morning Refreshments (8.00 - 9.00)

Opening Remarks & Plenary Sessions (9.00 - 10.15)

K1: Toward a science of transformation, and a role for experts as agents of change (Keynote: Kai Chan)

Coffee Break (10.15 - 10.45)

Sub-Plenary Sessions/Workshop Sessions Concurrent Sessions Panel (10.15 - 10.45)

P1: Bridging the Disclosure Divide: Trends and Best Practices in Sustainability Communication and Reporting

P2: Hope-filled Whole School Climate Action in Elementary & Secondary Schools

P3: Decarbonization Roadmap: Overcoming Challenges and Harnessing Innovative Technology and Financing Solutions for Sustainable Transformation

P4: Ontario Grid, Challenges and Opportunities

P5: From Incremental to Transformative Change: Adapting Strategic Management Practices in Response to Complexity

W1: Engaging Stakeholders to Advance Climate Change Education through Action

Lunch & Plenary Session (12.15 - 1.30)

K2: Befriending a Broken World (Keynote: Professor Una Chaudhuri & Marina Zurkow)

PROGRAM

Concurrent Sessions

(1.30 - 3.00)

CA1: Love, Planetary Citizenship, and Sustainability

CA2: Information and Communications Technologies (ICTs) and the Consequences for Sustainability

CA3: Spatial Analysis for Terrestrial Ecosystems

CA4: Agricultural Sustainability and the Anthropocene

CA5: Disclosures of Sustainability Performance Information

CA6: The Future Wave: Youth and Climate Advocacy

CA7: Sustainability in Teaching

Coffee Break

(3.00 - 3.30)

Concurrent Sessions

(3.30 - 5.00)

CB1: Love, Planetary Citizenship, and Sustainability

CB2: Information and Communications Technologies (ICTs) and the Consequences for Sustainability

CB3: Spatial Analysis for Terrestrial Ecosystems

CB4: Sustainability in Higher Education

CB5: Architecture, Design, and Sustainability

CB6: Sustainability Experiences from Asia

CB7: Sustainable Transportation and Energy Systems

CB8: Law and Sustainability

PROGRAM

Day 2 (October 12, 2023)

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|--|------------------------|
| Registration & Morning Refreshments | (8.00 - 9.00) |
| Plenary Sessions | (9.00 - 9.50) |
| <u>K3: Accountability in a Sustainable World (Keynote: Peter Easton)</u> | |
| Q & A | (9.50 - 10.05) |
| Plenary Session | (10.05 - 10.45) |
| <u>K4: Valuation of Environmental Assets (Robert P. Wilson)</u> | |
| Q & A | (10.45 - 11.00) |
| Coffee Break | (11.00 - 11.20) |
| Plenary Session | (11.20 - 12.00) |
| <u>K5: Nature-Related Financial Disclosures (Daniel O'Brien)</u> | |
| Q & A | (12.00 - 12.15) |
| Lunch | (12.15 - 1.15) |
| Plenary Session | (1.15 - 1.55) |
| <u>K6: Accounting for Natural Resources, Canadian Perspective (Joe St. Lawrence)</u> | |
| Q & A | (1.55 - 2.05) |
| Plenary Session | (2.05 - 2.45) |
| <u>K5: Financial Innovations for Sustainable Development, a MDB (Multilateral Development Bank) View (Keynote: JingDong Hua)</u> | |
| Q & A | (2.45 - 3.00) |
| Concluding Remarks & Break | (3.00 - 3.30) |
| UTM & Sobeys Innovation Challenge | (3.00 - 3.30) |
| <u>K6: Mainstreaming the Social Pirate Mindset for a Sustainable Future (Keynote: Dan Kershaw)</u> | |
| Poster Presentations & Networking Cocktail Reception | (5.00 - 7.00) |

PROGRAM

Day 3 (October 13, 2023)

Registration & Morning Refreshments (8.00 - 9.00)

Plenary Sessions (9.00 - 10.15)

K7: Climate Change and Human Health: Crafting a Prescription for a Sustainable Future (Keynote: Jaime Hart)

Coffee Break (10.15 - 10.45)

Plenary Session (10.45 - 12.15)

P6: Empowering a Sustainable future through UN SDGs Challenge-Based Learning.

P7: Stories of Sustainability in Action: Lessons from across the tri-campus

P9: Building Inclusive and Sustainable Communities

W3: Two Sisters on a Mission

W4: Having Tea with our Lizard Self

Lunch & Keynote Speaker (12.15 - 1.30)

K8: Canada's Health System in a Climate Crisis; Towards a Climate Resilient, Low Carbon, Sustainable health System (Keynote: Linda Varangu)

Concurrent Sessions (1.30 - 3.00)

CC1: Love, Planetary Citizenship, and Sustainability

CC2: Interrogating the Links Between Economic Growth, Development, and Sustainability

CC3: Eco-Anxiety: Roots and Shoots

CC4: Collective Action and Sustainability

CC5: Sustainable Food Systems

CC6: Natural Resources and Sustainability

PROGRAM

CC7: Social and Environmental Equity and Sustainability.

CC8: Sustainability Accounting and Reporting.

Coffee Break (3.00 - 3.30)

Concurrent Sessions (3.30 - 5.00)

CC9: Opportunities and Challenges Lessons from Transdisciplinary Teaching in Law and Sustainability.

CD1: Interrogating the Linkages Between Economic Growth, Development, and Sustainability.

CD2: Eco-(h)ope: Pathways to Enlightening Sustainability.

CD3: Environmental Justice and Sustainability.

CD4: Market Economies and Sustainability.

CD5: Net-Zero and Decarbonization Strategies.

CD6: Multiple Perspectives on Sustainability.

CD7: Sustainability Experiences from Africa.

W6: Tech4All - How to Refurbish Computers through Community Empowerment.

Closing Remarks (5.00 - 5.45)

End of Conference



DAY 1

October 11, 2023

Keynote - K1

Toward a science of transformation, and a role for experts as agents of change

Kai Chan

Connected Human and Natural
Systems Lab, University of British
Columbia



Bio

Kai Chan is a sustainability scientist whose work straddles social and natural systems with a focus on values, rewilding, and transformative change. He is a Professor and Canada Research Chair (Rewilding and Social-Ecological Transformation) at the University of British Columbia. Kai leads CHANS lab, where inspiring students study Connected Human-and-Natural Systems. Kai is also a member of the Royal Society of Canada's College of New Scholars, Artists and Scientists (2017), a former Coordinating Lead Author of the IPBES Global Assessment, a Lead Editor for the new journal *People and Nature*, a member of Canada's Clean16 for 2020, and co-founder of CoSphere (a Community of Small-Planet Heroes).

Abstract

As the interwoven crises of climate, ecology, and equity fester, many governments and NGOs continue to rely on narrow linear models of behaviour change. Without feedbacks—by which individual actions might trigger sweeping social change—we can only guide incremental change, not transformation. Meanwhile, as academics, we're engaging in the same kinds of ways. We offer guidance for policymakers, and we provide knowledge for journalists and lay publics. Again, these 20th Century models of engagement are not suited for transformative change in contexts of the planetary crisis. The path forward, I argue, involves research that centres values about relationships in transformative individual and collective action. In the 21st Century, science engagement means going beyond information provision to seize agency towards explicitly stated visions of positive futures.

P1 - Bridging the Disclosure Divide: Trends and Best Practices in Sustainability Communication and Reporting

Wesley Gee

*Chief Sustainability Officer and Principal
The Works Design Communications Ltd.*

*"Panellist: Wesley Gee, Chief Sustainability Officer, Work Design
Sarah Saso, Director, ESG and Sustainability, Meridian Credit Union
Prabh Banga, Director, Sustainability, Aecon
Sabreen Salman, Director, ESG Reporting, Export Development Canada
(Other panellists could be considered to ensure a balanced and diverse panel)"*

Abstract

With updated standards changing the reporting landscape, growing expectations coming from a range of stakeholders, and a changing intention for companies to communicate their purpose and value, it's time to rethink how to effectively communicate and report on sustainability. This panel session will present findings from Works Design's 12th annual reporting trends and best practices research, and offer insights from a diverse range of executives on how their companies are considering new approaches that meet the needs of The Street, while driving innovation among their employees and partners, to inspire greater outcomes for business and society.

Bio

Combining academic expertise with 20 years of extensive advisory and consulting experience, Wesley is a Principal and leads Works Design's sustainability practice. Drawing on his background as a consultant, Wesley advises a wide range of companies, including financial services, retail, real estate, energy and resources. He has in-depth expertise in global frameworks, including the GRI and SASB Standards, the SDGs and the TCFD. Wesley is a lecturer for the Master of Science in Sustainability Management program at the University of Toronto. Prior to joining Works Design, Wesley was a Sustainability Consultant at Stantec and Senior Advisor at Canadian Business for Social Responsibility

P2 - Hope-Filled Whole School Climate Action in Elementary & Secondary Schools

Daniel Hoornweg

Chief Sustainability Officer and Principal

Ontario Tech University, Oshawa Ontario

Abstract

"The Climate Action Accelerator Program (CAAP) was launched as a pilot in February, 2022. In its first two cohorts, twenty schools from five provinces made a 3-year commitment to learn together and collaborate to build and implement high-impact, hope-filled, whole-school climate action plans, focusing on a goal of regenerative practice. School teams included at minimum 1 senior administrator, 1 facilities leader, 1 faculty leader, and 2 student leaders.

This conference will be an exciting opportunity for CAAP schools to continue to meet one of their commitments - to share their learning for all. After a short overview of the program, the panel members will provide highlights from their experience of the first 18 months, and discuss what is working, and what lessons they have learned while trying to accelerate and amplify climate action in their school communities. The panel will be moderated by Michèle Andrews, Co-Founder and Executive Director of DoorNumberOne.org, and Director of the CAAP. Panel participants will include student and adult leaders from the CAAP pilot schools.

CAAP themes include a focus on systems change, evidence-based hope, and regenerative practice. Collectively, CAAP schools are trying to redefine what is possible and inspire greater engagement and action to accelerate the transition to a just, beautiful, healthy, net-zero and regenerated world.

"

Bio

Dan is Associate Professor in Energy Systems Engineering at Ontario Tech University. Before that, he was Lead Advisor with the World Bank overseeing Sustainable Cities and Climate Change programs. Dan was the Chief Safety and Risk Officer for the Province of Ontario 2012-2020.

Dan is a Fellow with Canada's Transition Accelerator and the Global Cities Institute at University of Toronto, a Board Member of the Georgian Bay Biosphere, past board member with Clean Air Partnership, and served as Chair of the Region of Durham's Roundtable on Climate Change. Dan researches energy and material flows of urban systems.

P3 - Decarbonization Roadmap: Overcoming Challenges and Harnessing Innovative Technology and Financing

Amy Geisberger

Sustainability Manager

Siemens Canada Ltd.

"Natalia Malafeeva - natalia.malafeeva@siemens.com

Amy Geisberger - amy.geisberger@siemens.com

Others to be confirmed."

Abstract

We invite you to join our dynamic panel session, where we will delve into the critical topic of decarbonization and explore the roadmap to reducing emissions and achieving Net Zero. Our session will focus on the intriguing intersection of innovative solutions, technology, and the challenges that lie ahead. With a particular emphasis on garnering senior management buy-in and securing financing for decarbonization projects. Moreover, we will explore different financing models, such as energy performance contracts, power purchase agreements, private investment, and green bonds, highlighting their potential to drive sustainable initiatives forward. Our panellists will bring diverse perspectives from various sectors, ensuring a comprehensive discussion.

Bio

Amy Geisberger is the Sustainability Manager for Siemens Canada Ltd. In her role, Amy is responsible for leading corporate sustainability initiatives in Canada. Additionally, she supports Siemens' customers on decarbonization and sustainability-related projects.

Before joining Siemens, Amy worked with many large organizations training senior executives to address climate change and environmental, social and governance (ESG) risks and opportunities as the Director of ESG Programs at Competent Boards. At Competent Boards, Amy led program development and delivery and was instrumental in shaping the company's business and communications strategy. Amy started her sustainability career promoting the United Nation's Sustainable Development Goals within Canadian businesses and communities and has worked in marketing and operations management. She is a graduate of the University of Toronto's Master of Science in Sustainability Management program.

P3 - Ontario Grid, Challenges and Opportunities

Shatha Qaqish-Clavering

ClimatePositive Energy

John Gracie, VP Hydro One; Hani Taki, Director Innovation, Toronto Hydro; Shah Nawaz Ahmed, VP Microgrids Siemens; Prof Ali Hooshyar, Department of Electrical and Computer Engineering U of T.

Abstract

Demand for grid capacity will greatly increase in the years ahead due to electrification. However, the adoption of new green technologies to meet this growth is being hampered by challenges inherent to both the demand and generation sides that were not anticipated when the grid was developed decades ago. This creates specific challenges on the grid but also can be seen as an opportunity to show leadership to accelerate the grid decarbonization and the integration of new state of the art solutions into the grid system. Reliability, resilience and affordability of the grid will be key issues that this panel will discuss and the role of the University of Toronto in this challenge.

P4 - From Incremental to Transformative Change: Adapting Strategic Management Practices in Response to Complexity

Randy Sa'd

Executive Director

REFOCUS & Flourishing Enterprise institute, Wilfrid Laurier University

*"Randy Sa'd, REFOCUS randy@refocussustainability.com
Manuel Riemer, VERiS, Wilfrid Laurier University mriemer@wlu.ca*

Abstract

For more than 50 years, humanity has increasingly exceeded the carrying capacity of our ecological systems while failing to equitably maintain the well-being of our population. While organizations continue to address sustainability-related challenges on the periphery, senior organizational leaders are finding it increasingly challenging to continue performing well while responding to accelerating change and the increasingly complex challenges emerging. Today's brand of financially focused, departmentally siloed and short-term-oriented strategic management methods and tools were not designed to match the increasing complexity of our world. An international community of scholars and innovators has been developing a new generation of knowledge, methods and tools that recasts conventional management by applying systems theory as well as the natural and social sciences. These Systemic Management Innovations are designed to transform strategic management practices, enabling organizations to respond better to rapidly changing conditions by functioning in more adaptive, integrative and collective ways. This session will profile a recently developed professional learning program that has been designed to enable organizations to transition from conventional toward systemic management practices by adopting many systemic management methods and tools that match their unique profile, challenges, needs, and priorities. The program supports leaders in learning experientially and developing the capabilities and confidence needed to continue applying the innovations adopted without the ongoing support of experts. The session will also profile the experiences of various actors engaged in an international applied research partnership focused on catalyzing the development and mobilization of this innovation, as well as one example of this experiential program being applied in the field and the insights gained by applied researchers who have been closely studying the entire process.

Bio

Randy Sa'd is the Executive Director of REFOCUS, a non-profit co-operative that enables leaders to more effectively respond to accelerating change and increasingly complex issues by transitioning toward systemic strategic management practices. Randy also serves as the Executive Director of the Flourishing Enterprise Institute (FEI) at Wilfrid Laurier University. The FEI is an applied research institute that leads a diverse international community of practice dedicated to accelerating the development and mobilization of Systemic Management Innovations (SMIs). SMIs make up an emerging field of solutions designed to match the complexity of our world and disrupt conventional management.

W1 - Engaging Stakeholders to Advance Climate Change Education through Action

Jennifer Stevens

*Manager of Learning, Research and Programs
Learning for a Sustainable Future*

Dr. Karen Acton

Abstract

LSF's national survey of over 4,000 Canadians' perceptions on climate change education found that Canadians feel schools have an important role to play. Yet educators shared concerns about a lack of resources and professional learning opportunities. This interactive workshop will provide highlights of the survey results, and will also share priorities gathered from diverse stakeholder groups during eight Knowledge Mobilization Sessions held across Canada. Active learning strategies will be used in this workshop to delve deeper into the data and outline the urgency for change. A framework will be provided for participants to develop actionable steps to advance climate change education, as each person and each sector has an important role to play.

Bio

Jennifer Stevens is the Manager of Learning, Research and Programs at Learning for a Sustainable Future. At LSF she works to implement programming, conduct research, and integrate the ideals for a sustainable future into the Canadian school system by working with youth directly and supporting parents and teachers. Jennifer holds a Masters of Child Study and Education from the Jackman Institute of Child Studies at the University of Toronto and a Bachelor of Arts (Honours) in Psychology from Queen's University. She is passionate about all things outdoors and is always looking for new ways to integrate sustainable ideals into her life and work.

Keynote - K1

Befriending a Broken World

Una Chaudhuri

Dean of Humanities; Professor of English, Drama, and Environmental Studies, Tisch School of the Arts, New York University



Bio

Una Chaudhuri is a Collegiate Professor and Professor of English, Drama, and Environmental Studies, and Dean for the Humanities at New York University. She is a pioneer in the fields of eco-theatre and Animal Studies. Her recent books include *The Stage Lives of Animals: Zooësis and Performance*, *Animal Acts: Performing Species Today* (co-edited with Holly Hughes) and *The Ecocide Project: Research Theatre and Climate Change* (co-authored with Shonni Enelow). Chaudhuri has been an active member of the theatre community in New York, serving as a judge for the Obie Awards and as a voter for the Tony Awards. She chairs the panel of judges for NYU's prestigious Callaway Prize in Drama and Theatre. Chaudhuri participates in numerous collaborative creative projects, including the multi-platform intervention *Dear Climate* and the theatre group CLIMATE LENS.

Abstract

As words like eco-anxiety and eco-grief pervade the cultural lexicon, the art collective *Dear Climate* reflects back on its decade of projects aiming to shift the cultural imagination around climate crisis away from fatalistic despair, and to foster a more robust, capacious, and creative relationship to the more-than-human world.

Keynote - K2

Befriending a Broken World

Marina Zurkow



Tisch School of the Arts, New
York University

Bio

Media and participatory practice artist Marina Zurkow connects people to nature-culture tensions and environmental messes, offering new ways of knowing, connecting, and feeling. Using research and technologies including software, animation, food, and other biomaterials, she fosters intimate multispecies and geophysical connections. Zurkow works as a founding member of several collaborative initiatives, including Dear Climate, Investing in Futures, and Climoji.

Recent solo exhibitions include bitforms gallery, New York, Google (Hudson River campus), ICA San Diego, and New York City's MTA Arts & Design. Her work has been featured at Storm King Art Center, New York; the 7th Moscow Biennale; Smithsonian American Art Museum, Washington D.C.; National Museum for Women in the Arts, Washington D.C.; Sundance Film Festival, Utah; and the Seoul Media City Biennial, Korea, among others. Public art engagements include work with Creative Time, New York; Northern Lights.mn, Minneapolis; and 01SJ Biennial, San Jose, California.

Zurkow has received support from the Environmental Media Lab, Princeton University; the John Simon Guggenheim Memorial Foundation; Rice University; NYFA; NYSCA; the Rockefeller Foundation, and Creative Capital. She is represented by bitforms gallery and resides in the Hudson Valley, New York.

Abstract

As words like eco-anxiety and eco-grief pervade the cultural lexicon, the art collective Dear Climate reflects back on its decade of projects aiming to shift the cultural imagination around climate crisis away from fatalistic despair, and to foster a more robust, capacious, and creative relationship to the more-than-human world.

Concurrent Session -CA1

Love, Planetary Citizenship, and Sustainability

Day 1 | October 11, 2023 | 10:45am

019



Love, Planetary Citizenship, and Sustainability; Love and Consciousness: The Dawning of the Age of Sustainability

Ian Lipton

President

*The Carbon Accounting Company & University of Toronto
Mississauga*

Abstract

"For at least a generation, humans have had all the knowledge and technology we need to live comfortably within the constraints and carrying capacity of our planet, and harmoniously with each other. Yet we continue our trajectory toward climate catastrophe, social injustice, political polarization, and economic disparity. What is at the root of our failure to change course?"

This paper asserts that the source of our inability to deal with the many crises we are facing is our individual and collective lack of consciousness, and the barrier to consciousness is our evolutionary yet irrational relationship to fear. And our access to the transformation we need is Love."

Bio

Ian Lipton has been a part-time lecturer in the MScSM program for the past 8 years. As President of The Carbon Accounting Company, he consults with organizations around the world to quantify and reduce their carbon footprints and to educate them in sustainability.

Ian has been involved in municipal and provincial politics. He ran as a candidate representing the Ontario Green Party in the last provincial election.

A graduate of the University of Waterloo, he holds a BA and MA in political science. He is an expert in carbon quantification, life cycle assessment, and human & organizational paradigm shifts.

Love, Planetary Citizenship, and Sustainability; All we need is love

Halyna Zalucky

*Personal and Organizational Coach
ReEarthing*

Abstract

When we reflect on the global challenges we face it would be easy to conclude that they are largely the result of human selfishness and greed. That we love ourselves above all else and are willing to exploit one another and nature to fulfill our desires. Is this true however? Do we love ourselves or can it be argued that the harmful effects of humanity are the result of a lack of self love at an individual and societal scale? In my paper, I put forward the assertion that our common narrative about humanity is flawed and perpetuates the problems we face. What is needed is a reconnection to our true selves, through self compassion and awareness, to see our true beauty and potential to create a healthy, thriving future for all.

Bio

Halyna Zalucky is a certified Wayfinder Life Coach and adjunct faculty member within the Sustainable Business Management program at Seneca Polytechnic. She teaches a variety of courses, but her real passion is guiding students through a process of self discovery in her leadership course called "Thrive." Halyna is an alumnus of the University of Toronto having completed an Honours Bachelor of Arts in International Relations and Political Science. She holds a Master of Arts in Migration Studies from the University of Kent and a Certificate in Sustainability Management from the Toronto Metropolitan University. Halyna is a daily yoga practitioner, weekend farmer, city cyclist, novice djembe drum player and nature lover.

Love, Planetary Citizenship, and Sustainability; How can love for nature guide corporate sustainability efforts.

Rajat Panwar

Oregon State University

Abstract

Businesses increasingly commit to net-zero targets and nature positive outcomes. How to actually achieve remains elusive. This presentation will explicate why and propose ways forward to materialize corporate environmental aspirations. The presentation will approach these topics from a love for nature lens. The overarching question, then, is whether and how love for nature could be a guiding force for corporate sustainability efforts.

Love, Planetary Citizenship, and Sustainability; Love is the Method: Intimations of a Compassionate Ecology

Stephen Scharper

University of Toronto

Abstract

Building on Aldo Leopold's notion of an ecological conscience, with its accent on "love, respect, and admiration" of and for the land, this paper explores love as a constitutive, rather than ancillary, dimension of sustainability and environmental studies. By reflecting on love as a methodology, connections and constructive alliances among a wide assortment of Indigenous, religious, artistic, and activist communities are made possible, and potentially yielding elements of hope, joy, and resiliency essential to sustaining sustainability initiatives.

Concurrent Session -CA2

Information and Communications Technologies (ICTs) and the Consequences for Sustainability

Day 1 | October 11, 2023 | 10:45am

024



Information and Communications Technologies (ICTs) and the Consequences for Sustainability: Impact of Information and Communication Technology on Mobility of Urban and Rural Households: A Comparative study from Nigeria

Aderibigbe Oluwayemi Bosede

University of Johannesburg, South Africa

Abstract

There has been concern over the likely impact of technologies on Travel, and few have examined this in relation to urban and rural households. Consequently, this study focussed on how the proliferation of ICT affects rural-urban mobility. We employed primary data which was obtained from a multi-stage sampling, and 50% of the wards were randomly selected. Based on systematic sampling, a total of 510 and 492 questionnaires were administered in the urban and rural areas respectively. The results thereafter established that variation exists in the socio-demographic and travel characteristics of respondents in the study area. Furthermore, our findings depict that not all trip types in the city are significantly substituted by telecommunications, rather the usage of ICT has tremendously helped to complement trips. The implication is that with the improvement and subsequent increases in high teledensity in rural areas, the least-cost travel planning will ultimately be achieved.

Information and Communications Technologies (ICTs) and the Consequences for Sustainability; EX Design and Solar ICT Devices

Brian Sutherland

PhD

Faculty of Information / IMI - Biomedical Communications

Abstract

In this paper I present the results of a new and comprehensive design review of seventy years of solar-powered ICT devices. I explore how these material devices were socially constructed as sustainable consumer technologies, what they mean for us today, what this suggests for how we should approach innovation in energy transition systems. I will also explore the emerging field of energy experience design, and further to the transdisciplinary theme of the conference, present a series of speculative energy harvesting prototypes featuring low-power networked technologies for trial by the audience. These utilize eWaste in combination with state of the art low energy computing and energy storage technologies. Fifteen billion batteries are consumed a year worldwide, what might be the consequences of eliminating batteries entirely?

Bio

Brian Sutherland teaches health science communications design at UTM and helps faculty develop their teaching and learning and course pedagogies in Arts and Science. Recently he defended a PhD in Information Studies with the title "Energy Harvesting Information Systems and Design in the Energy Transition". This discusses sustainable and degrowth electronics and computing, identifying fresh strategies for reducing consumption in information systems.

Information and Communications Technologies (ICTs) and the Consequences for Sustainability; Digital Sustainability: Analysing Influence on Governance and Corporate Communications

Akshat Chopra

Digital Sustainability: Analysing Influence on Governance and Corporate Communications

Research Scholar, ASCO, Amity University, Noida

Dr. Mehak Jonjua, Associate Professor and Assistant Director (Academics) ASCO, Amity University, Noida; mjonjua@amity.edu; Dr. Shallini Taneja, Associate Professor, FORE School of Management, Delhi; staneja@fsm.ac.in

Abstract

As digitalization and sustainability emerge as key drivers of change across industries, organizations face the need to adapt their governance structures and communication strategies. Not only companies are extending principles of ESG to digital products but also become resource efficient. With stakeholders' value being an assessment of the health of a Company, digital sustainability has emerged as a parameter for gauging the present and future of businesses. It also explores the individual implications of digitalization and sustainability on organizations and discusses how digital technologies transform business operations, enhance stakeholder engagement, and facilitate data-driven decision-making. The findings of this study provide insights for organizations to navigate the evolving landscape of governance and corporate communication in the context of digital transformation and sustainability imperatives. It also highlights the role of sustainable digital actions in shaping communication with stakeholders and how it affects governance mechanisms.

Bio

He is a research enthusiast focussing on communications, branding and sustainability studies, and is a research scholar with Amity University. As a Corporate Communications professional, he has been listed among India's Top 30 under 30 PR professionals, by Reputation Today. His research concentrates on intersection of communication, with particular emphasis on developing novel technologies & sustainable systems. He is a national awardee, double gold medalist, JRF & holder of Jamia Merit & Jawahar Bhavan Trust scholarships. Apart from academic pursuits, one of his significant accomplishments was the pivotal role in managing communications and event for Clean Energy Ministerial (CEM14/MI-8) 2023.

Concurrent Session -CA3

Spatial Analysis for Terrestrial Ecosystems

Day 1 | October 11, 2023 | 10:45am

028



Spatial Analysis for Terrestrial Ecosystems; Deep Learning Driver Analysis of Wildfires in the Central Yukon

Daniel Nelson

*Department of Geography, Geomatics and Environment, University
of Toronto Mississauga*

*Daniel Nelson, University of Toronto Mississauga, daniel.nelson@mail.utoronto.ca. Yuhong He,
University of Toronto Mississauga, yuhong.he@utoronto.ca.*

Abstract

In 2022 the Yukon experienced a 48.6% increase in area burned over 2021 according to the Canadian Interagency Forest Fire Centre. This concerning trend is observed across Canada where over the past 60 years wildfire activity has intensified. Historical fire activity in the Yukon can be quantified using Landsat satellite imagery available within the Google Earth Engine platform. Then, with this imagery the LandTrendR temporal segmentation algorithm was used to calculate the Normalized Burn Ratio to quantify burn severity. A series of climate, ecological, topographic and historical fire predictors were then fed into a deep learning model to determine the drivers of burn severity. This research iterates on previous work by utilizing cutting-edge deep learning methods, a large spatial and temporal scale while testing a diverse series of drivers. Results from this analysis will provide information that can be used to improve policy and forest management practices.

Spatial Analysis for Terrestrial Ecosystems; Remote sensing of landscape genetics across large-scale spatial scales

Jingxue Zhang

Yangzhou University

Jingxue Zhang, Yangzhou University, jingxue.zhang@mail.utoronto.ca; Jiali Shang, Agriculture and Agri-Food Canada, jiali.shang@canada.ca; Xuebing Yan, Yangzhou University, 006817@yzu.edu.cn; Yuhong He, University of Toronto Mississauga, yuhong.he@utoronto.ca

Abstract

Environmental variability associated with a specific landscape composition has potential to influence genetic variation and population structure. Different populations within species have responded to different landscape conditions at different geographic sites and appear to various genetic variation. However, the large-scale adaptive landscape genetics that could explain the influence of landscape on genetic divergence are poorly known due to extensive and time-consuming detection of the landscape characters. In this review, remote sensing technology are always used to be applied to characterize the environmental trends across large-scale spatial regions, which can be interacted with genetic variation to uncover the molecular actors potentially involved the landscape adaptation in different populations. There has been a summary of current literatures investigating how satellite data and geospatial data processing might be improved to measure landscape conditions and how geospatial and genetic datasets could be associated accordingly. Together, the review integrating remote sensing with landscape genetics underline the relevance and the power of the remote sensing approach for the effect of ecological factors on adaptive evolution that could allow plant populations to adapt to different environments across wider geographic ranges.

Bio

Jingxue Zhang, is a visiting PhD student in the Department of Geography, Geomatics and Environment at university of Toronto Mississauga and PhD student in grass science at Yangzhou university. She is interested in the effects of environment and geography on phenotypic and genetic variation in grass, landscape population genetics and evolutionary process across spatial scales. Jingxue's current research work includes a case study identifying genotypic divergence based on vegetation spectra along longitudinal and latitudinal gradients, as well as an interdisciplinary study on integrating remote sensing and landscape genetics to monitor and conserve biodiversity.

Spatial Analysis for Terrestrial Ecosystems; Distinguishing the relative contribution of climate change and human activities on urban vegetation dynamics in the Greater Toronto-Hamilton Area using Google Earth Engine

Haoran Cheng

Ph.D. student

*Department of Geography, Geomatics and Environment, University
of Toronto Mississauga*

*Haoran Cheng, Department of Geography, Geomatics and Environment, University of Toronto
Mississauga, hr.cheng@mail.utoronto.ca; Yuhong He, Department of Geography, Geomatics and
Environment, University of Toronto Mississauga, yuhong.he@utoronto.ca*

Abstract

Urban vegetation provides essential ecosystem services to human beings, but is experiencing unprecedented changes due to the combination of biogeochemical and human factors. Remote sensing and cloud-based computation, particularly Google Earth Engine (GEE) are powerful tools for long-term vegetation dynamics monitoring over large geographic areas. This paper focused on the fractional green vegetation cover (FGVC) from 1984 to 2022 in the Greater Toronto-Hamilton Area (GTHA), and analyzed the spatio-temporal pattern of vegetation conditions. With the help of meteorology and social-economic data, as well as advanced spatial analysis techniques, this paper further distinguished the relative contribution of climate variability and human activities on vegetation dynamics. The results of this study showed that vegetation in GTHA was heterogeneously influenced by both climate change and human factors. Moreover, vegetation responded distinctly to various human activities, providing practical implications for the sustainable management of urban vegetation to various stakeholders.

Bio

Haoran Cheng is a 2nd-year Ph.D. student of physical geography at the University of Toronto. He received his M.S. from Peking University and his B.S. from East China Normal University. Haoran Cheng is experienced in ecosystem evaluation and has strong geospatial analysis skills. His current work focuses on distinguishing the relative contributions of climate change and human activities to urban vegetation dynamics. He is trying to examine this field by integrating remote sensing and geographic information system technologies.

Concurrent Session -CA4

Agricultural Sustainability and the Anthropocene

Day 1 | October 11, 2023 | 10:45am

032



Agricultural Sustainability and the Anthropocene; Application of Systems thinking approach to address the Water, Food and Sustainability Nexus

Haripriya Gundimeda

*Institute Chair Professor in Economics, Department of Economics.
Indian Institute of Technology Bombay*

Abstract

"Sustainably managed agriculture and food systems can provide several positive externalities while ensuring human food security. However, as improving the yield has been a primary criterion to solve the food security issue, several policies subsidise the behaviour that causes harm to the environment. Due to such misaligned policies and lack of holistic analysis of production systems, agriculture, instead of ensuring food security, is contributing more to the negative externalities in the form of greenhouse gas emissions (GHGs), soil erosion, eutrophication, health impacts due to pesticide use, contamination of groundwater and surface water, which are not being considered in the policies, consumer behaviour and the producers alike (TEEBAgriFood report, 2018). Food security has been the key priority in a highly populous country like India, and this has been primarily achieved through yield and agricultural intensification facilitated by Green Revolution in the 1970s. However, this intensification has exerted pressure on soils and groundwater, and the marginal gains have been declining, indicating diminishing returns to the inputs. This paper applies the systems thinking framework to assess the costs and benefits of agricultural systems by using the TEEB agrifood evaluation framework. Such a framework illustrates Punjab's water, food and sustainability nexus in India and its disproportionate impacts on the environment compared to its production achievements.

"

Agricultural Sustainability and the Anthropocene; Using leverage points theory to understand payments to farmers for providing ecosystem services

Jennifer Holzer

Postdoctoral Fellow

Brock University

Julia Baird, Brock University, jbaird@brocku.ca; Gordon Hickey, McGill University, gordon.hickey@mcgill.ca

Abstract

"Over recent years, sustainability science has elevated leverage points theory as an important tool to improve evidence-based implementation. Leverage points are "places within a complex system where a small shift in one thing can produce big changes in everything" (Meadows 1999). An objective may be to identify deep leverage points, which are postulated to trigger processes that can alter an entire system. Leverage points may also be connected to one another and create 'chains of leverage' (Reichers et al. 2022). However, few empirical studies have tested this theory. This project tests leverage points theory by analyzing a successful program that pays farmers in Prince Edward Island, Canada when they take specific actions that provide ecosystem services on their land. We will report the results of interviews and a participatory workshop, presenting our preliminary conclusions about the usefulness of leverage points theory for evaluating sustainability programs."

"

Bio

Dr. Holzer is a postdoctoral fellow at the Environmental Sustainability Research Centre at Brock University and the Sustainable Futures Lab at McGill University. She currently leads research projects in three areas: building an implementation science for sustainability, understanding stakeholder and rightsholder engagement in environmental research and governance, and investigating how human connections to nature influences environmental stewardship behaviour in subgroups with special characteristics. Dr. Holzer earned her PhD at the Technion – Israel Institute of Technology, where she evaluated the impacts of social-ecological research across Europe. She was previously a project manager for energy and sustainability projects in California.

Agricultural Sustainability and the Anthropocene; Sustainable Management of Livestock Mortalities using a One Health Approach

Brandon H. Gilroyed

Associate Professor

School of Environmental Sciences, University of Guelph Ridgetown Campus

Vanessa Matten, Asma Sabir, Joshua Arias, Lucas McNea, Kim Van Overloop

Abstract

The growing global population and increased standard of living is driving demand for animal products such as meat, dairy, eggs, and bioproducts. Consequently, animal production is intensifying, leading to significant environmental challenges. Livestock mortalities are an unavoidable and often overlooked aspect of animal production, yet proper management of mortalities is a critical component of environmental sustainability, biosecurity, social responsibility, and economic viability. Current mortality management strategies focus on management of a “problem” with economic efficiency as the key driver beyond regulatory compliance, but a sustainable long-term model requires a paradigm shift towards viewing mortalities as a resource that should be valorized and conserved. Adopting a One Health approach, considering the impact of mortality management on human, animal, and environmental health, is essential for quantifying and addressing these impacts and integrating them into existing economic frameworks to make sustainable solutions viable.

"

Bio

I am an Associate Professor in the School of Environmental Sciences at the University of Guelph Ridgetown Campus (<http://www.ridgetownc.uoguelph.ca/>; <https://ses.uoguelph.ca/>), Director of the Centre for Agricultural Renewable Energy and Sustainability (CARES), and a board member of the University of Guelph's One Health Institute (<https://onehealth.uoguelph.ca/>). My interdisciplinary research program focuses on the nexus of agriculture, renewable energy, and environment. By applying principles of engineering, microbiology, plant and animal production, and analytical chemistry in experiments spanning from bench to field scale, my research program seeks to improve sustainability in the agri-food sector predominantly through development and refinement of waste valorization technologies.


"

Concurrent Session -CA5

Disclosures of Sustainability Performance Information

Day 1 | October 11, 2023 | 10:45am

036



Disclosures of Sustainability Performance Information; The Assessment of Factors Affecting Information Communication Technology (ICT) Project Success at Ethio telecom

Mieraf Tesfahun Birhane

Security Engineering Department(Ethio telecom)

Mieraf Tesfahun Birhane(Information Security Architect-Ethio telecom) email: mieraf.tesfahun@gmail.com and Tadele Tesfay(Hungarian university of agriculture and life sciences,MATE) email: tadeleteame@gmail.com

Abstract

The research was conducted using a survey of Ethio telecom employees in Addis Ababa to assess the factors affecting Information Communication Technology(ICT) Project Success. 120 questionnaires (five-point Likert scale) were sent to the sample of the study and 89 usable questionnaires were obtained (74%). In this study quantitative method, explanatory research design is used and the collected data was subjected to correlation and liner regression analysis to empirically investigate the association of variables and assess the cause-and-effect relationship between variables. According to the study, Top Management Support, User Involvement and Project Monitoring have significant impact on ICT project success. However, Top Management Support, Project monitoring, user involvement on different project stages is poorly practiced. According to the researcher, effective communication lines and help need to be provided, adequate incentive and reward mechanisms to be developed, periodic training to be offered, effective project monitoring/follow up and more users involvement are suggested.

"

Bio

"Mieraf Birhane believes that everyone has potential to be amazing...and that a sustainable digital environment can inspire people to be and live at their best. She helps people and organizations towards creating a secure digital socio-economic ecosystem to accelerate achieving the 2030 SDG. Her passion is to see a highly trusted and addressable digital services which impacts women and children of Africa positively."

"Mieraf Birhane is an Security Architect and Project manager at Ethio telecom for decade, helping in securing the company and the digital ecosystem from security loopholes as well as achieving a sustainable investment on ICT projects. Also, as an independent consultant and Trainee, she helps businesses on digital security and managing a sustainable IT project ."

"

Disclosures of Sustainability Performance Information; The Assessment of Factors Affecting Information Communication Technology (ICT) Project Success at Ethio telecom

Tadele Tesfay

Security Engineering Department(Ethio telecom)

Mieraf Tesfahun Birhane(Information Security Architect-Ethio telecom) email: mieraf.tesfahun@gmail.com and Tadele Tesfay(Hungarian university of agriculture and life sciences,MATE) email: tadeleteame@gmail.com

Abstract

The research was conducted using a survey of Ethio telecom employees in Addis Ababa to assess the factors affecting Information Communication Technology(ICT) Project Success. 120 questionnaires (five-point Likert scale) were sent to the sample of the study and 89 usable questionnaires were obtained (74%). In this study quantitative method, explanatory research design is used and the collected data was subjected to correlation and liner regression analysis to empirically investigate the association of variables and assess the cause-and-effect relationship between variables. According to the study, Top Management Support, User Involvement and Project Monitoring have significant impact on ICT project success. However, Top Management Support, Project monitoring, user involvement on different project stages is poorly practiced. According to the researcher, effective communication lines and help need to be provided, adequate incentive and reward mechanisms to be developed, periodic training to be offered, effective project monitoring/follow up and more users involvement are suggested.

"

Bio

In September 2022, Tadele Tesfay Teame enrolled in the Hungary University of Agriculture and Life Science to begin his doctoral program. He was highly qualified in teaching Accounting and Finance courses to both undergraduate and graduate students, and he had more than ten years of experience teaching in universities throughout Ethiopia. He participated in numerous research initiatives and volunteer work in the community. He simultaneously took on a number of leadership positions inside the university, such as Department Head, Coordinator of Partnership and Community Service, and School Dean.

"

Disclosures of Sustainability Performance Information; UTM Climate Positive Campus Action Plan

Arash Ghorayshi

*Senior Energy Engineer
University of Toronto Mississauga, Facilities, Management & Planning*

Ahmed Azhari And Beverley Ayeni

Abstract

"The objective of this presentation is to share our pathway and strategies for the upcoming major infrastructure upgrades at UTM campus buildings. Our climate positive goal to achieve at least 95% absolute carbon reductions, balanced by on-campus generation. Starting with electrification of the CUP1 hot water boilers and proceeding with what can be feasible, measures that can be accomplished effectively, and measures that can generate important sustainability benefits. It will also share some of the specific challenges associated with residences, academic buildings (including laboratory buildings) and central utilities expansion plans. Achieving our sustainability objectives with a focus on operational feasibility.

*Please note we are open to other themes"

"

Bio

Arash joined UTM's Sustainability Office as a senior energy engineer in early 2022. In this role, he is responsible for furthering UTM and UofT's commitment to become a leader in sustainability and energy management. Arash comes to UTM from CF Sherway Gardens, where he held the position of senior operations manager. In this role, Arash was responsible for large-scale capital planning, and managed the day-to-day operations, energy and sustainability initiatives. Prior to this, Arash was a senior project analyst with the sustainability group at WSP for almost 15 years. Arash holds a P.Eng with the Professional Engineers of Ontario.

Disclosures of Sustainability Performance Information; Assessing the Impact of the SDGs on Corporate Social Investment: A Study of Canada's Leading Private Sector Companies

David Billedeau

*PhD Candidate
University of Waterloo*

Abstract

"This paper examines the influence of the Sustainable Development Goals (SDGs) on corporate social investment (CSI) in Canada's top private sector companies. It addresses two main questions: whether the introduction of the SDGs in 2015 has led to increased CSI among these companies, and if companies committed to the SDGs have raised their CSI expenditures compared to their peers and past outflows.

The study analyzes annual reports of Canadian companies listed in Forbes' top 2000 list from 2012 to 2022. Key areas of focus include the allocation of post-tax net profit towards community-oriented initiatives through CSI, transparency in reporting CSI, and the ratio of CSI to net profit after tax in companies integrating the SDGs into their corporate social responsibility programs.

The findings contribute to understanding the relationship between sustainability frameworks like the SDGs and corporate social investment, shedding light on whether the SDGs have spurred increased CSI and improved CSR practices among Canadian companies."

Bio

David Benjamin Billedeau has a background in corporate social responsibility and bridging the gap between academia and the private sector. With years of experience in sustainability and policy roles, he has advanced sustainability efforts within organizations like the Canadian Steel Producers Association, the Canadian Chamber of Commerce, and Toyota. David is currently pursuing his PhD in Sustainability Management at the University of Waterloo, which is focused on corporate responses to global transformational events.

Concurrent Session -CA6

The Future Wave: Youth and Climate Advocacy

Day 1 | October 11, 2023 | 10:45am

041



The Future Wave: Youth and Climate Advocacy

Praneeta Mudaliar

Dr.

*Assistant Professor of Natural Resources Policy and Stewardship,
Geography, Geomatics, and Environment*

Beverly Ayeni, beverley.ayeni@utoronto.ca, Sustainability Manager

Abstract

""Since Greta Thunberg's climate strike, youth have emerged as a powerful actor in climate change forums, right from the international level such as Conference of Parties (COP) to national movements (e.g., the Sunrise Movement in the United States) and local advocacy. While young people are rarely associated with playing an active role in local politics and advocacy, they are becoming increasingly visible and influential in climate action. This section invites research and perspectives from academics, youth advocates, and storytellers that focuses on how youth engage in climate advocacy. The presentations could focus on, but are not limited to, new institutions that youth create, new methods to study youth engagement, interactions between youth and governments, experiences of Black, Indigenous, and Racialized youth in the climate justice space, and intergenerational justice.

Bio

Praneeta Mudaliar is an Assistant Professor of Natural Resources Policy and Stewardship at the Department of Geography, Geomatics, and Environment at the University of Toronto Mississauga. Praneeta research interests cut across commons and collective action, climate justice, and decolonizing conservation. Praneeta has conducted research in India, the United States, east Africa, and Canada.

The Future Wave: Youth and Climate Advocacy; Reciprocal relationship in community-based learning and engagement of youth in advocacy

Jinru Pan

University of Toronto (MScSM)

Jinru Pan, Praneeta Mudaliar

Abstract

Teenagers have their understanding of how their future should look like; it is our role to provide inclusive space to help them shape their dream. The author would like to share her observations on how building reciprocal relationships through community-based learning can foster sustainability awareness and youth engagement in advocacy work. Drawing from two personal experiences as a recipient of community support during their youth and as a young adult volunteering with youth, she found this type of reciprocal relationship potentially sets role model effects for both youths and adults. This also enhances engagement in the community and encourages knowledge exchange. The author plans to interview participants from both experiences, including the adults and peers involved in her earlier experience, as well as youth and adults volunteering at the current community space she is a part of. Ideally, this further investigation can support the development of a sustainable youth pedagogy framework.

Bio

Jinru is currently pursuing a Master of Science degree in Sustainability Management. While she has occasionally questioned her passion for sustainability, she remains consistently inspired by the advocacy power of her peers and the youth community around her.

The Future Wave: Youth and Climate Advocacy

Rav Singh

Farmer

Shade of Miti

Abstract

Shade of Miti is an organic farm in Caledon that is operated by Rav, a young and new farmer who specializes in growing South Asian vegetables. Rav has worked in the agriculture and environmental education field for over 7 years. In 2021, she decided to start her own farm to focus on education, climate action and food sovereignty. Since starting Shade of Miti, Rav has increased access to locally grown cultural foods for communities in Mississauga, created environmental education resources for newcomers (ex. gardening guides translated into Punjabi, Hindi, Tamil and Tagalog), and increased her advocacy work on and off the field. She has been the farm-research lead for an okra crop trial project with the Ecological Farmers Association of Ontario for the past two years. Rav also sits on the National Farmers Union - Ontario board as the Youth Advisor, ensuring youth voices are heard and represented in agriculture (she recently spoke at Queen's Park on the importance of farmland protection).

Bio

Rav (she/her) is a young and new farmer in Ontario. She operates Shade of Miti, an organic farm that specializes in growing South Asian vegetables such as okra and bitter melon. Rav approaches farming from an environmental and food justice practice. She has been involved in numerous youth-led climate action and food sovereignty projects. Rav co-founded the Peel Youth Food Circle and currently sits on the National Farmers Union - Ontario as the Youth Advisor.

The Future Wave: Youth and Climate Advocacy; Exploring Student Perspectives on Environmental Justice: A Case Study at the University of Toronto Mississauga

Lauren Ead

MSc Researcher (she/her)

University of Toronto Mississauga, Department of Geography, Geomatics, and the Environment

Lauren Ead, Praneeta Mudaliar

Abstract

In the face of intersecting environmental and climate injustices, alongside growing concerns about the inequitable distribution of environmental harms and resources, higher education institutions are being increasingly called upon to incorporate environmental justice into their curriculum. Subsequently, environmental justice has since been incorporated into various fields and disciplines such as Chemistry, Ecology, Social Work, Humanities, and Engineering. However, undergraduate students' awareness and perception of environmental justice remain uncertain, indicating a need for future inquiry. This research aims to examine how students at the University of Toronto Mississauga understand and articulate environmental justice by conducting semi-structured interviews and analyzing them using the environmental justice framework, which encompasses distributional-, procedural-, and recognition justice. The findings will have important implications for shaping curriculum and program development on environmental justice, not only at the University of Toronto but also among universities throughout North America.

Bio


Lauren, an MSc Researcher, is exploring environmental justice awareness among undergraduate students alongside Dr. Praneeta Mudaliar (UTM). Through this research, Lauren seeks to identify and leverage student knowledge gaps to develop and implement effective interventions with the goal of fostering targeted improvements in student understanding of environmental justice. Lauren's primary research focus centers on microplastic contamination in indoor air.

Concurrent Session -CA7

Sustainability in Teaching

Day 1 | October 11, 2023 | 10:45am

046



Sustainability in Teaching; Tackling Complex Sustainability Challenges through Interdisciplinary and Experiential Learning

Kate Whalen

Associate Director

Academic Sustainability Programs, McMaster University

Abstract

Sustainability poses complex challenges requiring interdisciplinary solutions. Universities are positioned to leverage their disciplinary-specific knowledge complemented by learning environments and experiences that bring learners together. While we don't yet have all the solutions, we know that we will need to work together to create them. Within McMaster University's Academic Sustainability Programs Office, students tackle these complex challenges by working across disciplines and with campus and community partners. Students have actioned hundreds of sustainability projects including implementing the McMaster Community Fridge to address food insecurity, creating the ACCESS Tech program to upcycle technology for community members in need, and developing McMaster as a Bee City Campus to support local pollinators. This session will explore the pedagogical foundations and approaches used in developing the nine sustainability courses, which now serve nearly 5,000 students annually, as well as the important partnerships necessary to create interdisciplinary collaborations on campus and in the community.

Bio

Kate Whalen developed McMaster's Academic Sustainability Programs Office in 2013, which aims to 'inspire in all students a desire for lifelong learning about sustainability' by providing opportunities for interdisciplinary, student-led, community-based, and experiential learning. Today, McMaster's nine 'SUSTAIN' courses support a growing 5,000 students from all Faculties, and the Interdisciplinary Minor in Sustainability remains among the University's largest minors. As part of her doctoral thesis, Whalen created the Reflective Learning Framework to support her students in making the most of their educational experiences, which is a foundation of her pedagogical approach as well as her personal life mission.

Sustainability in Teaching; Exploring the Impact of Online Discussion Boards on Teaching and Learning: Insights from Undergraduate Business Courses

Daniel Gulanowski

Assistant Professor

Carleton University, Sprott School of Business

Abstract

This research investigates the role of online discussion boards in enhancing teaching and learning experiences within the context of undergraduate business courses. With the recent surge in computer-mediated communications (CMCs) in education, the study aims to understand the benefits and challenges of leveraging online discussion boards as educational tools. Through an inductive content analysis of 507 online discussions collected from three undergraduate business courses during the pandemic, the findings reveal that online discussion boards promote increased student engagement, meaningful participation, and collaborative learning experiences. Furthermore, they can improve students' understanding of course materials, facilitate cross-cultural interactions, and enhance overall satisfaction. The study concludes by offering practical recommendations for educators and suggesting future research directions to further optimize the use of online discussion boards in education. This research provides valuable insights for educators, policymakers, and researchers seeking to maximize the potential of CMCs in teaching and learning.

Bio

Daniel Gulanowski is an Assistant Professor specializing in International Business at Ottawa's Carleton University within the Sprott School of Business. His instructional background spans both graduate and undergraduate levels, with an emphasis on international business and international management courses. Dr. Gulanowski's research centers on several key areas, including newcomers' integration into the labour market, computer-mediated communication, effective management pedagogy, and internationalization processes. His academic contributions have been featured in the *International Journal of Intercultural Relations*, *Human Relations*, *Review of International Business and Strategy*, and *Journal of International Technology and Information Management*.

Sustainability in Teaching; Sustainability Modules in Experiential Learning

Valerie Lin

*Master's Candidate, Geography and Planning, University of
Toronto*

Valerie Lin, Forrest Hisey, Tingting Zhu

Abstract

As sustainability design involves decision making after critically evaluating the environmental, social and economic impacts, this study integrated sustainability modules into real-world projects through an experiential learning course. The modules consist of a wide range of topics in sustainability, representative of its relevancy across many disciplines. In addition to high impact scholarly papers and videos, commentaries and discussion questions were created to incite critical thinking and analysis about complex sustainability issues in students. By engaging students in a weekly reflection on sustainability modules and subsequently integrate them into their ongoing projects, students are given the opportunity to reflect on the implications of their decisions in relation to sustainability. Feedback from students indicated that the sustainability module significantly enhanced their critical thinking abilities concerning sustainability. When coordinated with real-world applications to course concepts, reflective assignments were generally seen as motivating students to connect academic skills to solving problems outside of the classroom.

Bio

Valerie is a second year student in the Master of Science in Sustainability Management. Her experience in MScSM has helped her cultivate a deep understanding of sustainability principles and solidify her commitment to a sustainable future. Valerie's areas of interest lie in climate change resiliency, sustainable urban development, waste management, environmental justice, and ecological restoration. She strongly believes that fostering critical thinking and incorporating a culture of sustainability is crucial to empowering change in future leaders.

Sustainability in Teaching

Tingting Zhu and Michael Liut

University of Toronto

Abstract

As sustainability design involves decision making after critically evaluating the environmental, social and economic impacts, this study integrated sustainability modules into real-world projects through an experiential learning course. The modules consist of a wide range of topics in sustainability, representative of its relevancy across many disciplines. In addition to high impact scholarly papers and videos, commentaries and discussion questions were created to incite critical thinking and analysis about complex sustainability issues in students. By engaging students in a weekly reflection on sustainability modules and subsequently integrate them into their ongoing projects, students are given the opportunity to reflect on the implications of their decisions in relation to sustainability. Feedback from students indicated that the sustainability module significantly enhanced their critical thinking abilities concerning sustainability. When coordinated with real-world applications to course concepts, reflective assignments were generally seen as motivating students to connect academic skills to solving problems outside of the classroom.

2 Organizers: Tingting Zhu <tingting.zhu@utoronto.ca>, University of Toronto Mississauga & Michael Liut <michael.liut@utoronto.ca>, University of Toronto Mississauga. 3 Presenters: Kim Ceulemans <k.ceulemans@tbs-education.fr>, TBS Education & Kate Whalen <whalenk@mcmaster.ca>, McMaster University & Valerie Lin <val.lin@mail.utoronto.ca>, University of Toronto Mississauga

Concurrent Session -CB1

Love, Planetary Citizenship, and Sustainability

Day 1 | October 11, 2023 | 10:45am

051



Love, Planetary Citizenship, and Sustainability; Love Disguised as the Relational Turn in Sustainability Science

Blake Poland

Dalla Lana School of Public Health, University of Toronto

Abstract

Abstract: In contrast to dominant substantialist/transactional perspectives, the relational turn in sustainability science gives primacy to social and material relations rather than to entities, structures, and 'interactions', enlarged to encompass all of life. This has profound implications for planetary health work. Seeing climate change and ecological destruction as relationship problems underscores how far eurocentric colonial logics have severed us from ourselves, each other, and the natural world, under a false narrative of separation, manufactured scarcity, and presumed superiority. Conventional risk management 'solutions' such as monitoring and surveillance, regulations, enforcement and penalties, while still much needed within conventional systems, are ill-suited to catalyzing the change of heart that a relational orientation requires. In this paper I argue that attentiveness to relational quality is love in action. Several implications of a relational turn are explored as provocations for imagining sustainability differently, and opening new spaces for transformative change.

Love, Planetary Citizenship, and Sustainability; For the love of regenerative homes

Emily Smit

University of Toronto, Department of Geography and Planning; Magnus Home Improvements

Abstract

On the website landing page of the small home renovation company I co-operate, you are greeted by three words: "Love Your Home". Home is simultaneously physical – a material shelter – and experiential – an intimately emotional environment created by and shared with those (things) we love. Materially and emotionally entangled, the home is a complex human-environment interface for sustainability. Climate change is a particular sustainability challenge and, significantly, there are approximately 437,000 single-detached homes in Toronto, generating nearly 2,500,000 MT CO₂/year. To address this sustainability challenge, retrofit programs narrowly focus on building performance to reduce GHG emissions towards net-zero. However, I argue for a holistic approach to home retrofits and renovations based on the concept of regenerative sustainability: activities that generate net-positive outcomes for human and environmental well-being. I use posthumanist and new materialist approaches to connect principles of co-evolution, reciprocity, and regenerative sustainability in support of love within home.

Bio

Emily is a second-year PhD student in Geography at the University of Toronto, and home renovator. Her research seeks to uncover effective mechanisms for single-family homes retrofits to achieve emissions reductions targets – including net-zero by 2040 – as part of the TransformTO climate action plan. Specifically, she will assess the impact of municipal home energy reporting and disclosure programs and develop recommendations for growing the retrofit labour force in ways that benefit communities. Further, her research seeks to understand how home retrofit activities can be regenerative and produce net-positive impacts for humans and the environment towards transformative, place-based sustainability.

Love, Planetary Citizenship, and Sustainability; We protect what we love: What battles against corporate water bottling tell us about the struggle for sustainability

Robert Case

Dr.

Renison University College, Waterloo, Ontario

Dani Lindamood, Water Watchers, Guelph, Ontario

Abstract

"Wherever big corporations show up to pump and bottle water, people oppose it. In this presentation, we will share findings from case studies of anti-water bottling activism in four communities in Canada and the US, and critically examine the relationship of activism to the broader goals of confronting wicked problems, building a sustainable future, and shifting the societal values that underlie these issues.

Intrinsic to these local conflicts, our investigations found, is a profound a sense of place and a deep appreciation of the environments that define it. Our study reveals the interconnections between social justice, sustainability, and action-taking, and suggest ways in which community engagement in environmental action can be strengthened. After sharing our results from these place-based yet ideologically-linked struggles for water protection, we will engage session participants in discussion of the potentialities of the call to protect what we love for the realization of a more sustainable future. "

Bio


Robert Case is an Associate Professor in Social Development Studies at Renison University College (affiliate with the University of Waterloo) and a long-time member and supported of the Water Watchers. Based in Wellington County, the epicentre of grassroots opposition to corporate water bottling in Ontario, Rob's academic interests in community organizing and social action have evolved alongside his direct involvement in water activism. In a current study, Rob is partnering with the Water Watchers to explore and draw insight from the strategies and dynamics of grassroots opposition to corporate water bottling in communities in different parts of the US and Canada.

Concurrent Session -CB2

Information and Communications Technologies (ICTs) and the Consequences for Sustainability

Day 1 | October 11, 2023 | 10:45am

055

A stylized, light green globe is positioned in the lower half of the page, showing the continents of North and South America. The globe is semi-transparent and serves as a background for the bottom section of the slide.

Information and Communications Technologies (ICTs) and the Consequences for Sustainability; Exploring Equity Gaps in Energy Modelling Approaches to Deep Building Retrofits

Samar Sabie

University of Toronto - ICCIT

Samar Sabie, ICCIT, samar.sabie@mail.utoronto.ca | Tanea Agrawaal, Computer Science UofT, tanea@cs.toronto.edu | Robert Soden, Computer Science UofT, soden@cs.toronto.edu

Abstract

"According to the Canada Energy Regulator (CER), buildings account for 26% of the country's overall energy consumption, with other sources citing 40% as a more realistic number. Given that buildings are ubiquitous and relatively enduring assets, various municipalities across Canada have identified deeply retrofitting the existing building stock as a timely and potentially high impact avenue for sustainable energy transitions. Deep retrofits rely on long-term energy performance simulations that consider the future effects of climate change. While powerful, these computational approaches ignore the differential impacts of energy transition policies, including the need to consider trade-offs between what is just or good from an occupant perspective, and what is optimal from an energy transition lens. In this paper, we offer an overview of the ICT-driven modelling landscape used in building retrofit and preliminary critiques arising from ongoing fieldwork. We further speculate on how modelling-based approaches to energy transitions can support more equitable participation and just decision making for building retrofits.

Information and Communications Technologies (ICTs) and the Consequences for Sustainability; The Political Ecology of Bolivia's State-Led Lithium Industrialization for Post-Carbon Futures

Youssef Al Bouchi

MScSM University of Toronto Mississauga

Brett Caraway; brett.caraway@utoronto.ca

Abstract

The socio-ecological costs of development in the Global North have long been borne by the Global South, and the production of green technologies risks reproducing this pattern. To critically engage with these dynamics, we use a political ecology framework to analyze lithium extraction in Bolivia. Supported by interviews with experts on Bolivian lithium extraction, we consider: (1) the anticipated socio-ecological impacts of lithium extraction; (2) the political economy of contemporary Bolivia; and (3) the governance/politics of lithium extraction at the local and global levels. The Bolivian state's effort to exercise its sovereignty and develop its economy through "100% state-led lithium industrialization" risks re-inscribing Bolivia's subordinate position in the world-system. Given the anticipated ecological impacts and unequal revenue distribution, local communities may be on the verge of accumulation by dispossession.

Information and Communications Technologies (ICTs) and the Consequences for Sustainability; Transformation of the Digital Payment Ecosystem in India: A Case Study of Paytm

Aditi Bhatia

Faculty of Information

Brett Caraway, Associate Professor, Institute of Communication, Culture, Information & Technology (ICCI), brett.caraway@mail.utoronto.ca

Abstract

Paytm is a payment app in India providing e-wallet services, the most prominent mobile e-commerce app in the world's third-largest economy. This article uses Paytm as a case study to better understand the global platform economy and its implications for social and economic inequities. We contextualize the emergence of Paytm by drawing attention to its relationship with India's developing digital infrastructure and marginalized populations. We use a political economy lens to investigate Paytm's market structure, stakeholders, innovations, and beneficiaries. Our analysis points to the tensions between private and public interests in the larger platform ecosystem, dispelling notions of platforms as neutral arbiters of market transactions. We argue that Paytm is socially beneficial to the extent that it reduces transaction costs and makes digital payments more accessible for marginalized populations; it is detrimental to the time that it jeopardizes user data and privacy while suppressing competition in the platform economy.

Bio


Aditi Bhatia-Kalluri is a Ph.D. student at the Faculty of Information, University of Toronto. Her Ph.D. research looks at mobile phone penetration and usage in developing nations, especially financial inclusion and digital payments. Research focuses on how digital policies in India shape information practices, such as adopting e-banking and e-commerce for micro-entrepreneurs in rural communities. Research would track adaptation to mobile phones by auditing everyday user challenges in cashless transactions and find gaps that lead to information asymmetry. Aditi earned a Master of Digital Media from Ryerson University and a B.A. Hons in New Media Studies from the University of Toronto.

Concurrent Session -CB3

Spatial Analysis for Terrestrial Ecosystems

Day 1 | October 11, 2023 | 10:45am

059



Spatial Analysis for Terrestrial Ecosystems; Assessing the spectral response of the red-edge region between healthy and water-stressed beans on urban greenroofs using remote sensing

Hwang Lee

UTM Geography, Geomatics and Environment

Hwang Lee, Yuhong He, Marney E. Isaac, Adriano Roberto

Abstract

Quantifying vegetation biological properties over agricultural areas is an essential aspect of effective agricultural management and monitoring, also known as precision agriculture (PA). Nowadays, urban greenroofs play a large role on contributing to more resilient cities by enhancing urban ecosystem services and food systems to the population. The use of remote sensing procedures has become an attractive technique for precision agriculture management because it is considered non-destructive. This study assessed the spectral response of agricultural crops on greenroofs (bush beans) under drought stress. A particular region of the electromagnetic spectrum known as red edge was analyzed due to the area being sensitive to chlorophyll, which is a direct indicator of plant stress. The results have shown significant differences between the spectral response of bush beans under different water treatments in this study, indicating that this region is very important for future green roof water management studies using remote sensing.

Bio

Hwang is currently a PhD Candidate at the University of Toronto in the Geography, Geomatics, and Environment department. Hwang's research is focused around the impact of different water levels, diversity types and nursing sedums on urban greenroof plants using remote sensing technology. Hwang's research goal is to implement non-destructive remote sensing techniques to monitor plant health on urban green roof environments.

Spatial Analysis for Terrestrial Ecosystems; Mapping the vegetation disturbance regimes of Tibetan Plateau mapping using Landsat time series

Yanyu Wang

Dr.

College of Environmental and Resource Sciences, Department of Chemical and Physical Sciences.

Yanyu Wang, College of Environmental and Resource Sciences, Zhejiang University, Hangzhou 310058, China; Department of Chemical and Physical Sciences, University of Toronto Mississauga, Mississauga, ON L5L 1C6, Canada, yyu.wang@mail.utoronto.ca; Hancheng Guo, College of Environmental and Resource Sciences, Zhejiang University, Hangzhou 310058, China, ghcjzu@zju.edu.cn; Xiaoyong Xu, Department of Chemical and Physical Sciences, University of Toronto Mississauga, Mississauga, ON L5L 1C6, Canada, xiaoyong.xu@utoronto.ca; Zhou Shi, College of Environmental and Resource Sciences, Zhejiang University, Hangzhou 310058, China, shizhou@zju.edu.cn

Abstract

The land cover transition on the Tibetan Plateau plays a key role in indicating the environmental change under the coupled effects of climate change and anthropogenic activities. Plenty of land change products have emerged over the last several years along with the rapid development of change detection algorithms. However, most of the current global land change products only focused on urban expansion (Liu et al., 2020), burned area (Giglio et al., 2018), or forest change (Hansen et al., 2013), but little has concentrated on the vegetation change and transition like vegetation disturbances. To fill this gap, we applied an ensemble strategy, which has shown better performance than using a single algorithm in some studies (Cohen et al., 2018; Healey et al., 2018; Hislop et al., 2019), and satellite data coupled with field survey data to map the vegetation disturbance regimes of Tibetan Plateau over the last decades. The two leading disturbance detection algorithms (Continuous Change Detection and Classification algorithm, CCDC; Landsat-based detection of Trends in Disturbance and Recovery algorithm, LandTrendr) were engaged in the ensemble strategy with a Random Forests-based fusion for aggregating the classifiers. A total of 15,680 manually interpreted reference pixels, containing 1,739 disturbed vegetation points, 3,696 stable vegetation points, and 10,245 non-vegetation points, were used for training and validation. Our study presents the first comprehensive vegetation disturbance map of the Tibetan Plateau over the last three decades. We identified a total area of about 105.83 M ha that had experienced vegetation disturbance with considerable spatial variability across the Tibetan Plateau over the past three decades. Results also indicated that there were large differences among the disturbance patches. The identified unexpected scale of vegetation disturbance can further facilitate an understanding of the dramatic ecological changes in the ecologically fragile Tibetan Plateau region in response to climate change and more frequent human activities. The results could also contribute to the decision-making for the sustainability of resources.

Bio

I am a Ph.D. student originally from Zhejiang University and currently conducting research as a visiting student at the University of Toronto Mississauga. My primary research areas encompass time-series analysis, land surface parameter mapping, and vegetation growth parameter retrieval. Lately, my research has been primarily centered on characterizing vegetation disturbances on the Tibetan Plateau. This is especially pertinent because the region's vegetation is subject to the coupled effects of climate change and anthropogenic activities, yet our understanding of vegetation disturbance behavior in this area remains limited.

Spatial Analysis for Terrestrial Ecosystems; Understanding Burn Severity and Vegetation Recovery in Alberta's Boreal Forests: A Remote Sensing Time Series Study Following the 2016 Fort McMurray Wildfire

Yuhong He

Professor

Department of Geography, Geomatics and Environment, UTM

Eric Xu, Marry Wei, Tiffany Li, Jennifer Gao, Victor Lei, Nathan Wang, Daniel Nelson, Yuhong He

Abstract

Forest fires are recognized as a primary disturbance mechanism in boreal forests, driving ecological succession dynamics. Given the escalating impacts of global climate change, it is anticipated that wildfires will exhibit heightened frequency, intensity, and size, thereby resulting in substantial economic and ecological loss. Consequently, it becomes imperative to closely monitor, assess, and comprehend the spatial heterogeneity of these wildfires to mitigate fire risk and optimize post-fire management strategies. Remote sensing with long historical records is a cost-effective technique for monitoring wildfires. In this study, we explore a significant wildfire event that occurred in May 2016, profoundly affecting the city of Fort McMurray, Alberta. Leveraging the Google Earth Engine Platform, our investigation encompasses a comprehensive fine-scale delineation of the fire's extent, and a thorough evaluation of the factors that influence burn severity and subsequent vegetation recovery. Our results reveal a vast burn extent within the study area, where burn severity and subsequent recovery dynamics are impacted by landcover type, topography, moisture in addition to other long-term ecological and climatic predictors.

Bio

Yuhong He is a Professor in the Department of Geography, Geomatics and Environment at the University of Toronto Mississauga. Her research focuses on investigating changes that have occurred in natural (grasslands, forests, wetlands) or managed (farmlands and urban) systems using remote sensing, machine learning, and ecosystem modelling.

Concurrent Session -CB4

Sustainability in Higher Education

Day 1 | October 11, 2023 | 10:45am

063



Sustainability in Higher Education; Evaluating non-conventional SDG education programs in higher education

Jianwei Liu

University of Geneva

Abstract

This paper examines six non-conventional education programs that aim at promoting action toward Sustainable Development Goals (SDGs) and are based in or led by higher education institutions. The six programs were evaluated based on (1) the Quality Assurance Framework developed by the United Nations Institute for Training and Research (UNITAR); (2) interviews with the program organizers to understand their perceptions of education for sustainable development (ESD) in higher education settings. The results show that it is critical to bring interdisciplinary and multicultural groups together to address the complicated issues in sustainable development, making higher education crucial in support of ESD and achieving the SDGs. For the evaluation of the programs, the interviewees emphasized that instead of evaluating what the programs provide, it is more important to examine the impacts on the students and society in promoting the SDGs, especially the long-term impacts.

Sustainability in Higher Education; Learning to be affected: Moving theory to practice and action for sustainability

Jennifer Sumner

Dr.

Adult Education and Community Development Program, OISE/University of Toronto

*Jennifer Sumner, OISE/University of Toronto, jennifer.sumner@utoronto.ca; Emily Dobrich,
OISE/University of Toronto; emily.dobrich@mail.utoronto.ca*

Abstract

"As a theory, 'learning to be affected' reflects Pihkala's (2020) assertion that "there has been increasing interest for researching the emotions, feelings, affect, and moods related to ecological issues" (9). Learning to be affected means acknowledging and having an embodied experience and (as theorized by Latour 2004) becoming sensitive to previously unperceived differences. For example, Gibson-Graham et al. (2016) describe Australians learning to be affected by climate change through "the embodied experience of hotter and drier summers" (p. 205) resulting in the increased uptake of household solar power to replace coal-fired energy.

This paper will discuss this theory and explore how it can motivate practice and action for sustainability. Given that scientific facts have not yet turned the sustainability juggernaut, learning to be affected, as an emotionally-based teaching tool, makes an important contribution to the broad repertoire of skills needed to further sustainability initiatives, which has transdisciplinary relevance and applicability.

"

Bio

Jennifer Sumner is an Associate Professor (Teaching Stream) in the Adult Education and Community Development Program of the Ontario Institute for Studies in Education at the University of Toronto. Her main research interests focus on food and food systems, sustainability, critical pedagogy, the social economy and rural communities. She is the author of *Sustainability and the Civil Commons: Rural Communities in the Age of Globalization* (2007, University of Toronto Press) and editor of *Learning, Food and Sustainability: Sites for Resistance and Change* (2016, Palgrave Macmillan).

"

Sustainability in Higher Education; Experiences from managing and coordinating an interdisciplinary graduate research school

Magnus Wallen

Senior Associate Professor

Department of management and engineering, Division of energy systems, Linköping University, 581 83
Linköping, Sweden

*Maria Johansson, Department of management and engineering, Division of energy systems,
Linköping University, 581 83 Linköping, Sweden, maria.johansson@liu.se*

Abstract

The Graduate School in Energy Systems is a national, interdisciplinary graduate school, with approximately 20 active PhD students, and almost 100 PhDs being examined since the start in 1996. The vision of the graduate school is to contribute to a sustainable transformation of the energy system involving industry, government, NGOs, and academia. The graduate school is coordinated and managed by a team consisting of a manager, a director of research studies, an administrator, and a communicator. This team organizes activities to facilitate interaction and knowledge exchange between researchers from different disciplines, conducting research in different fields related to the energy systems, such as aviation, agriculture, manufacturing industry and sustainable cities. With almost 20 years of experience from managing and coordinating this interdisciplinary graduate research school we would like to share our experiences of the added values and challenges of bringing together academics of different disciplines.

Bio

Magnus Wallén has been director of the Graduate School in Energy Systems for five years, which is a Swedish national interdisciplinary research school continued in roughly the same form for more than 25 years. Magnus has previously been director of studies and PhD-student within the research school, providing a good interdisciplinary foundation that has influenced the direction of his own research. The research area includes energy systems analysis and modelling, comprising e.g. industrial energy efficiency and analysis of collaboration between industries and society, besides energy management. Magnus is also involved in several undergraduate courses, both as teacher and as examiner.

Sustainability in Higher Education; Experiences from managing and coordinating an interdisciplinary graduate research school

Jitendra K Das

Dr

Director General, FORE School of Management, New Delhi.

*Dr. Jitendra K Das, Director General, FORE School of Management, New Delhi, j.das@fsm.ac.in and
Dr. Shallini Taneja, Associate Professor, FORE School of Management, New Delhi, staneja@fsm.ac.in.*

Abstract

"The issues of business ethics, corporate social responsibility and sustainability have come to attract increasing attention in management education in recent years. India is the first country in the world to make corporate social responsibility (CSR) mandatory for the corporates. The Sustainable Development Goals (UNSDG's) & Indian CSR regulation were implemented around the same time and the goals were set, positioning education at the heart of the strategy to promote sustainable development.

This paper aims to demonstrate, how CSR and Sustainability approach to education for sustainable development to be integrated into teaching & learning across all disciplines in the management education. Considering the Principles for Responsible Management Education (PRME), the paper then identifies some key enabling factors and barriers to successful integration of sustainability themes. A case study is provided to illustrate how a premier business school in India created an ecosystem of inspiring practices, to advance interdisciplinary education for sustainable development amongst postgraduate MBA students.

Bio

Earlier Professor of Marketing and the founder Dean (Noida Campus) of the Indian Institute of Management Lucknow. With a B.Tech. and M.Tech. both from the IIT Delhi, and a Doctorate from the University of Toronto, Canada, he has to his credit many national and international publications. He has been a consultant to World Bank, IDRC (Canada), GWB (for GTZ Germany), Coal India Ltd., GlobeCast India (a division of France Telecom). In academics he has been associated with teaching at IIM Ahmedabad, Kozhikode and Lucknow, and at Danube Business School, Krems, Austria.

Concurrent Session -CB5

Architecture, Design, and Sustainability

Day 1 | October 11, 2023 | 10:45am

068



Architecture, Design, and Sustainability; An architects approach to sustainability

Paul Raff

Paul Raff Studio Incorporated Architect

Abstract

"Global GHG emissions by the building sector is 38% per annum. In Canada, the figure is lower but still substantial at 18%. The building sector persists as the third greatest source. As a professional architect with a practice focussed on sustainable design, these statistics have informed my work over the past two decades.

In reviewing my studio's work towards environmentally responsible design, we see that our projects demonstrate how architecture can play an instructive role in the sector's drive towards sustainability.

We address sustainability through three integrated approaches: the ecological, the social and the economic. With this broad framework, we assessed our work for successful, creative concepts, while considering the many remarkable recent innovations in sustainable design.

By reviewing these projects with an open-minded, inclusive sustainability lens, we found an intriguing and effective set of ideas, illustrated with practical project examples that show applicable solutions to existing and new buildings.

"

Bio

Paul Raff is an architect, artist and visionary thinker. In 2003, Toronto-based Paul Raff Studio was founded as a creative design practice, producing awarding-winning architecture and public art projects across Canada and in international settings. Highlighting Paul's life-long interest in environmentalism and sustainable design, the Studio produces innovative and strategic projects that deliver beautiful, high-performing buildings for a diverse range of clients.

Born in Montreal and raised in Saskatoon, Paul completed a B. ES and B. Arch at the University of Waterloo in 1992, and became an architect [OAA] in 2002. He is frequent lecturer and critic at cultural institutions across North America.

Architecture, Design, and Sustainability; Environmental Sustainability and Beyond: A Critical Reflection on the Plural Lessons from Vernacular Architecture

Obafemi Olukoya

Chair of Environmental Planning / Brandenburg Technical University, Cottbus, Germany

Abstract

Over the last recent decades, vernacular architecture has gained renewed interest and emerged as an indispensable discursive tool for generating didactic knowledge on sustainable development. However, despite the rising awareness, the substantive focus of most of the literature has been on the environmental qualities of vernacular architecture. This narrowing of the plural values of vernacular architecture has constrained the integration of its nuanced lessons and limited the broad concept of sustainability to a partial one. To this end, beyond the environmental qualities of vernacular architecture, this presentation critically explores the holistic values of vernacular architecture for the contemporary sustainable development debate. It examines and presents two case studies of vernacular landscapes in Cyprus and Nigeria—through the broad lens of sustainability ethos. The presentation aims to show that beyond the environment-centric foci, the vernacular past has varied layers of plural lessons for the contemporary world in the context of sustainability and its cultural, social, economic, political, and spiritual panels

Sustainability Experiences from Asia; What are voices made of? Rethinking Development Induced Displacement of Indigenous tribes in Uttarakhand, India from a multi-stakeholder perspective

Atri Nautiyal

Associate Dean
School of Liberal Studies, UPES

Atri Nautiyal and Bitopi Dutta

Abstract

"The Alalay Sa Kaunlaran, Inc. (ASKI) based in the Philippines was established in 1987, the year where unemployment and poverty are widespread because of political issues and transition of leadership.

Over the years, ASKI responded to the needs of its clients not only by providing financial assistance but also create new opportunities to ensure a viable way to put poverty in history. This gave birth to an idea of working and giving beyond the boundaries of microfinance.

Today, the ASKI Group is now composed of 10 different strategic business units and continuously creating opportunities and transforming communities in 90 branches in the Central and Northern part of the Philippines and serving more than 130,000 micro, small and medium enterprises and insuring more than 800,000 families as part of its social protections program.

ASKI supports the United-Nations backed Sustainability Development Goals (SDG) by contributing to the 15 out of 17 targets in its modest way.

ASKI's resilience and determination for excellence and innovation has been tested in the past years. Now more than ever, ASKI remain steadfast in its commitment of serving more Filipinos in the areas of its operation.

The organization is determined to face the adversities and will stay resolute as it journey with its clients towards a more progressive community and ensure that no one will be left behind. ASKI is certain that it can face the challenges of tomorrow by remaining committed to the vision and mission of the organization. It is the first-Sustainability Certified institution in the Philippines under the Sustainability Standards and Certification Initiative based in Karlsruhe, Germany. "

Bio

Atri is working as Associate Dean at School of Liberal Studies, UPES, India. His research focuses on alternative forms of energy and the socio-economic impacts of Development induced Displacement. He is an investigator in several projects that are aimed at fostering scientific curiosity and awareness towards green energy among school children in the remote Himalayan regions of Uttarakhand, India. Alongside his collaborators, Atri is engaged in studying human displacement resulting from the construction of large hydro projects. The work focuses on understanding the social, environmental, and economic impacts of such displacements and seeking ways to address and mitigate these challenges.

Architecture, Design, and Sustainability; Signs of Change 2023-2057: Training organisational resiliency through activating extreme climate futures through speculative design

Angelika Seeschaaf Veres

OCAD University, Faculty of Design, Radical Norms

Angelika Seeschaaf Veres, OCAD University, Radical Norms, aseeschaafveres@ocadu.ca; Bettina Schwalm, Konstfack Stockholm, Sweden info@bettinaschwalm.com; Daniel Daam-Rossi, Radical Norms, daniel@radicalnorms.com; Koby Barhad, Radical Norms, hello@radicalnorms.com

Abstract

Highlighting the undeniable impact of frequent and severe climate events on our cities, lives, and organizations, 'Signs of Change 2023-2057' is an exhibition, futures simulation platform, and organizational resiliency training tool centred around a collection of extrapolated public signs and their associated policies. The immersive physical experiences of public street signs are derived from strategic foresight methods and Ecopsychology and are informed by their local contexts. 'Signs of Change 2023-2057' are further activated through workshops in the space of innovation for organizations, citizen engagement and policy making. The paper shares the layered speculative design process that we've developed to shift mindsets toward embracing climate action as a source of innovation and growth. The approach prioritizes activating creativity, training flexibility, and providing psychological safety in a team setting, which the authors argue could lead to activating and developing more ecological and economically resilient organizational strategies and cultures.

Architecture, Design, and Sustainability; Forest restoration, biodiversity and ecosystem functioning in Nepal

Bhagawat Rimal

College of Applied Sciences, Nepal

Bio

Dr. Bhagawat Rimal has acquired his Master's degree in Geography from Tribhuvan University, Kathmandu Nepal and obtained the PhD degree from Wroclaw University 2011. He has completed Postdoctoral research from Hyperspectral Division, Institute of Remote Sensing and Digital Earth (RADI), under the Chinese Academy of Science (CAS) Presidential International Fellowship Initiative (PIFI) from 2016-2018. He has been enrolled as Lecturer in College of Applied Sciences (CAS)-Nepal, Tribhuvan University, Kathmandu since 2013. More than 40 research publications about the crop monitoring, land use/cover change, forest restoration, ecosystem services on different national and international journals are under his credit as lead and co-author.

Concurrent Session -CB6

Sustainable Transportation and Energy Systems

Day 1 | October 11, 2023 | 10:45am

074



Sustainable Transportation and Energy Systems; Responding to the UN SDGs: The Role of Development Finance Institutions (The ASKI Experience)

Erwin S. Embuscado

Alalay Sa Kaunlaran Inc. (ASKI) / 105 Maharlika Highway, Magsaysay District, Cabanatuan City 3100, Nueva Ecija, Philippines

Rolando B. Victoria/ ASKI Founder and President/ rolando.victoria@aski.com.ph

Abstract

"The Alalay Sa Kaunlaran, Inc. (ASKI) based in the Philippines was established in 1987, the year where unemployment and poverty are widespread because of political issues and transition of leadership.

Over the years, ASKI responded to the needs of its clients not only by providing financial assistance but also create new opportunities to ensure a viable way to put poverty in history. This gave birth to an idea of working and giving beyond the boundaries of microfinance.

Today, the ASKI Group is now composed of 10 different strategic business units and continuously creating opportunities and transforming communities in 90 branches in the Central and Northern part of the Philippines and serving more than 130,000 micro, small and medium enterprises and insuring more than 800,000 families as part of its social protections program.

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ASKI's resilience and determination for excellence and innovation has been tested in the past years. Now more than ever, ASKI remain steadfast in its commitment of serving more Filipinos in the areas of its operation.

The organization is determined to face the adversities and will stay resolute as it journey with its clients towards a more progressive community and ensure that no one will be left behind. ASKI is certain that it can face the challenges of tomorrow by remaining committed to the vision and mission of the organization. It is the first-Sustainability Certified institution in the Philippines under the Sustainability Standards and Certification Initiative based in Karlsruhe, Germany. "

Bio

Erwin S. Embuscado is the head of the Resource Mobilization and Corporate Communications of ASKI Group in the Philippines. For more than 12 years, his work focuses on fund mobilization, writing proposals, award entries, marketing and promotion in the local and international front, and creating PR campaigns and strategies for various media outlets, including social media.

He completed his Bachelor of Arts in Development Communication degree at the Central Luzon State University in Nueva Ecija. In November 2017, he was conferred the title of Certified Professional Association Executive by the Philippine Council of Associations and Association Executives (PCAEE).

He is a member of Philippine Agricultural Journalists, Inc., and Communicators for Development.

Sustainable Transportation and Energy Systems; The role of aggregated and disaggregated energy consumption on economic growth in the presence of internal and external dynamics: Cointegration and counterfactual analysis approaches

Md. Idris Ali

PhD Candidate

Environmental Applied Science and Management, Toronto Metropolitan University, Canada

Dr. Brian Ceh, Associate Professor, Department of Geography & Environmental Studies, Toronto Metropolitan University, Canada. Email: bceh@torontomu.ca

Abstract

This study investigates the relationship between energy consumption and economic growth in Canada utilizing four different models to find the impact of total energy consumption as well as disaggregated energy consumption (renewables and non-renewables) on economic growth. The models that are used in this study capture both internal dynamics (such as financial development, ICT development, capital formation, human capital, and institutional quality) and external dynamics (including foreign direct investment, trade openness, exchange rate, and institutional quality). A dynamic autoregressive distributive lag (DARDL) cointegration model using time series data from 1990 to 2022 is primarily used. This model analyzes the cointegrating relationship among variables and simulated counterfactual shocks to the regressors. The results show that both total energy consumption and disaggregated energy consumption have a positive impact on economic growth in both the short and long run. This relationship is shown to be stronger in the context of internal dynamics compared to external dynamics. Furthermore, this study uses a counterfactual analysis by examining the effects of $\pm 1\%$ and $\pm 5\%$ shocks to the regressors on the dependent variable. Additionally, the researchers employ a KRLS machine learning algorithm and find consistent results with those obtained from the DARDL estimation technique. Finally, this study discusses important policy implications based on the findings.

Bio

Md. Idris Ali is currently pursuing a PhD at Toronto Metropolitan University, building upon a strong academic foundation. He holds a master's degree from the University of Toronto, Canada and an MBA from the University of Rajshahi, Bangladesh. Additionally, he has attained a master's degree specializing in corporate governance and sustainability from York University in Canada. Complementing his educational achievements, Mr. Idris boasts a substantial research portfolio, featuring eight comprehensive research papers on environmental quality, the majority of which have garnered publication in prestigious Q1 journals. He also has ten years of experience as a full-time faculty member in different universities in Bangladesh.

Sustainable Transportation and Energy Systems; Intermittency, Location and Energy Transitions: A Critique of Andreas Malm's Water to Coal Thesis

Pierre Desrochers

Associate Professor
UTM-Geography, Geomatics and Environment

Joanna Szurmak, UTM-Library, joanna.szurmak@utoronto.ca; Pierre Desrochers, UTM-GGE, pierre.desrochers@utoronto.ca

Abstract

"In his influential 2016 book *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*, Swedish geographer Andreas Malm overturned traditional explanations for the transition from water to coal power in the early nineteenth century. He dismissed alleged economic and technological benefits and suggested instead that coal was a mean to shift the balance of power away from workers towards capitalists. Overthrowing capitalism would therefore result in a drastic reduction in carbon emissions and benefit the fight against global warming.

Our essay challenges Malm's take by revisiting contemporary discussions. Like other authors before us, including Karl Marx himself, we find factors like waterpower's irregularity, unreliability, non-scalability and geographical inflexibility more compelling. We then discuss the subsequent rise of "white coal," or hydroelectric power, and how it challenges Malm's narrative. We finally draw parallels between early nineteenth century waterpower and current solar and wind-powered electricity generation.

"

Bio

Pierre Desrochers is Associate Professor in the Department of Geography, Geomatics and Environment at the University of Toronto Mississauga. His main research interests focus primarily on economic development, technological innovation, business-environment interface, energy policy and food policy. His personal website is at <https://geog.utm.utoronto.ca/desrochers/>

Sustainable Transportation and Energy Systems; The Use of Green Bond in Financing Energy Efficiency Retrofits in Buildings

Hannah MacRae

Research Associate, ESG
University of Toronto

Abstract

Energy efficiency retrofits are necessary for building sector decarbonization, but there are many financial barriers to their implementation. Green bonds could effectively finance retrofits, but there is a lack of research on green bonds in this context. This study employs a descriptive design research approach to examine green bond use of proceeds documentation and evaluate their use in financing retrofits. The results demonstrate that most green bond issuers allocate proceeds to green buildings or energy efficiency projects, but fewer allocate proceeds specifically to retrofits. Fewer still set minimum performance standards or provide specifics about eligible retrofit actions, and most provided details do not signal Paris Agreement-aligned emissions reductions. Overall, it appears that issuers are not targeting deep decarbonization through green bond-financed retrofits. These findings indicate a need for further research on this topic and a potential need to adjust sustainable debt instruments to better spur decarbonization through retrofit.

Bio

Hannah MacRae is a recent graduate of the Master of Science in Sustainability Management program at UTM, and focused her Master's research on the use of green bonds in financing energy efficiency retrofits in buildings. She is also the co-author of a published paper on barriers to energy retrofits in households vulnerable to energy poverty with Prof. Laura Tozer and Emily Smit. Hannah currently works as a Research Associate, ESG at Jarislowsky, Fraser Ltd.

Concurrent Session -CB7

Law and Sustainability

Day 1 | October 11, 2023 | 10:45am

079



Law and Sustainability; Sustainability and the Cemetery: A Comparative Legal Analysis

Jae Page

University of Toronto Mississauga

Abstract

The management of the dead presents a network of challenges when it comes to law and sustainability. Material spaces for the dead, like cemeteries, are facing spatial shortages throughout global urban communities and changing attitudes towards death are calling for more environmentally friendly forms of interment. At the same time, cities are reticent to convert lands for cemetery purposes and changing cultural landscapes mean an increasing demand for diverse interment infrastructure. Given the intriguing tensions between environmental, economic, and cultural sustainability in this sensitive area of the law, this study examines the legal and policy discourse around death spaces in common law jurisdictions across Australia, Canada, and New Zealand. Our findings reveal that cemetery laws are based on antecedents of the imperial that maintain colonial power structures and perpetuate inequalities. While jurisdictions face both similar and different sustainability challenges when it comes to the management of the dead, top-down legislation continues its colonial legacy and local governments are burdened with the competing pressures of making space for both the living and the dead. Advocating for decolonizing the law, this study highlights the importance of legal pluralism in the sustainable and inclusive management of the dead.

Law and Sustainability; Addressing Plastic Pollution: Regulatory Approaches for a Circular Economy

Chloe Kapanen

University of Toronto Mississauga

Bio

The circular economy has become a popular sustainability paradigm to address plastic pollution, however, implementing the circular economy remains a challenge. In particular, implementation has been complicated by questions of legal jurisdiction. While numerous national governments have made commitments to reduce plastic pollution, local authorities largely maintain jurisdiction over waste management practices. With the circular economy further identified as a key strategy in the proposed global treaty on plastic pollution, questions of scale within implementation will be crucial to address. This research examines the role of jurisdictional scale in the current implementation of a circular economy in Canada and the United Kingdom (UK). Selected geographical scales of study include Canada, Ontario, Toronto, the United Kingdom, Scotland, Edinburgh, England, and London.

Law and Sustainability; Making Lemonade: Lessons from past environmental crises and their applications to corporate climate action

Matt Reesor

University of Toronto Mississauga

Abstract

This presentation will provide a brief background and analysis of historically successful environmental agreements and use this analysis to assess key success factors for future agreements. The main example used for a successful agreement is the Montreal Protocol which represents an international agreement that has generally been heralded as a success in addressing ozone depletion in our atmosphere by heavily regulating CFCs, HCFCs, and HFCs. Much attention and commendation in recent years has been given to the various COP agreements such as the Paris Agreement in 2015, however, they have not been able to empirically demonstrate success in addressing climate change. In this presentation it is argued that a major problem is that these agreements have tried to target the climate crisis as a whole, rather than focusing on the specific, component, environmental issues such as those targeted by our historically successful agreements. Of particular interest is the possibility of applying these findings to a future agreement which seeks to target specific GHG emissions such as carbon dioxide or methane.

Law and Sustainability; Understanding Community-centered Perspectives and lived experiences in energy transition norms.

Hosea Patrick

Dr.

University of Toronto Mississauga

Bio

Dr. Hosea Patrick is a transdisciplinary researcher and postdoctoral fellow at the Department of Geography, Geomatics, and Environment, University of Toronto, Mississauga. Hosea has a Ph.D. in Political Science with a specialization in environmental politics from the University of KwaZulu-Natal, South Africa. His research focuses centrally on the United Nations' sustainable development goals application and implications in the areas of climate change (SDG 13), human security and food (SDG 2 and 6), as well as social and environmental justice (SDG 16). He also works on public policy, decolonization, and academic exclusion research areas.

Law and Sustainability; A Fair and Efficient Transit Signal Priority (TSP) in Connected Vehicle (CV) Environment: A Dynamic Bargaining Game Approach

Lina Kattan

Department of Civil Engineering, University of Calgary

*Mohammad Ansari Esfeh, Department of Civil Engineering, University of Calgary,
mansarie@ucalgary.ca*

Abstract

This study proposes a novel transit signal priority (TSP) logic in connected vehicle (CV) environment based on a green reallocation approach. High-resolution vehicle trajectory data extracted from the CV environment contain a wealth of information that can be utilized to improve TSP strategies. A proportionally-fair TSP strategy is formulated and solved through a CV-based dynamic bargaining game, which assures that competent movements are not heavily penalized. Rather than focusing solely on reducing the delay to transit cars, this approach utilizes a negotiation process among the controllers to provide a more equitable TSP strategy that is able to consider all users' perspectives of equity. The bargaining approach guarantees an equitable distribution of breakdown events while seeking system-wide efficiency. The performance of the developed approach was examined on a case study corridor in the City of Calgary. The results indicate that the proposed TSP approach decreases the delay incurred by all vehicles.



DAY 2

October 12, 2023

Keynote - K1

Accountability in a Sustainable World

Peter Easton

Director of the Center for Accounting Research and Education (CARE), Notre Dame Alumni Professor of Accountancy, Mendoza College of Business, University of Notre Dame



Bio

Professor Peter Easton is Director of the Center for Accounting Research and Education (CARE) in the Mendoza College of Business at the University of Notre Dame and Editor-in-Chief of *Accountability in a Sustainable World Quarterly*. His expertise in accounting and valuation is widely recognized by the academic research and teaching community as well as the legal community. Professor Easton is a qualified expert witness in the Delaware Chancery Court and the Federal Court of Australia. He has consulted on valuation issues for investment firms and accounting firms in Australia, the UK, and the USA.

After directing the annual CARE Conference for nearly two decades, Easton recognized the immediate need for dialogue among academics and practitioners about sustainability, accountability, measurement, assurance of the measures, data to inform (responsible) investment decisions, and accountability in setting personal, corporate, and public sector goals. This recognition pivoted his teaching, research, and CARE activities to *Accountability in a Sustainable World*.

Accountability in a Sustainable World aims to meet the great need currently facing academia and practice. The accompanying journal, *Accountability in a Sustainable World Quarterly*, will advance the creation and dissemination of knowledge and understanding of topical, practical relevance issues by publishing cutting-edge, rigorous, peer-reviewed research and thought pieces written by academics and practitioners.

The goals of Professor Easton's teaching, the conference, and the journal, are to build and strengthen the links between academia (both teaching and research) and practice, encourage younger academics by providing an opportunity to present their work to both other academics and non-academics, and provide opportunities for non-academics to communicate with academics and influence their work. The journal is cross-disciplinary, with a focus on measurement, assurance of the measurements, and use of the measures.

Professor Easton graduated in 1983 with a PhD in Business Administration (majoring in accounting and finance) from the University of California, Berkeley. His research has been published in the *Journal of Accounting and Economics*, *Journal of Accounting Research*, *The Accounting Review*, *Contemporary Accounting Research*, *Review of Accounting Studies*, and *Journal of Business Finance and Accounting*, and he has served on the editorial boards of these journals, among others. He is the author of 6 textbooks, sales of which exceed 275,000 units. He is the recipient of many awards for his teaching and research contributions to accounting.

In 2018 Professor Easton was awarded the Limperg Medal for his sustained contribution to the accounting research community in The Netherlands. In 2023 he was inducted into the Australian Accounting Hall of Fame as an eminent accounting scholar and thinker.

Abstract

There is an immediate need for dialogue among academics and non-academics about sustainability, accountability, data and measurement, related assurance, high quality information to inform responsible investment decisions, target setting, KPIs and accountability in setting personal, corporate and public sector goals. The gap between academia and the non-academic world is vast. There are so many opportunities to contribute via our research. Our curricula often need massive overhauls so that we prepare our students to be influencers and guardians of the future of our planet, which is currently in crisis. Much of the plenary will discuss articles from the ASWQ and insights gained from the annual ASW conferences. These articles and videos of past conferences may be accessed at <https://care-mendoza.nd.edu/>

Keynote - K2

Valuation of Environmental Assets

Robert P. Wilson

Director of Conservation Finance, the Nature Conservancy of Canada



Bio

Rob Wilson joined The Nature Conservancy of Canada (“NCC”) in 2007, after nearly 20 years with the TD Bank Group, and is the Director of Conservation Finance at NCC and a senior member of NCC’s Nature + Climate Accelerator group. He is responsible for advising on conservation finance-related programs that support NCC’s nature-based, natural climate solutions work, with a particular focus on carbon finance.

Rob is currently a member of the Technical Expert Group designing a federal Improved Forest Management carbon protocol, a member of the federal Conservation Exchange Working Group and has been an active member of two previous provincial Forest Carbon Policy working groups designing provincial offset programs. He graduated from the University of Toronto with an undergraduate degree in political science, a Resource Management Diploma from its Faculty of Forestry and an M.B.A. from the Rotman School of Management.

Rob is involved in a number of large-scale, land conservation projects in his work at NCC, with a focus on designing impact-based approaches and investment opportunities by which to attract more sources of private capital into nature-based solutions projects across the country – in short, Making Nature Investable.

Keynote - K3

Nature-Related Financial Disclosures

Daniel O'Brien

Partner and leader in PwC Canada's Sustainability and ESG practice, member of the Taskforce on Nature-related Financial Disclosures (TNFD)



Bio

As a Partner and leader in PwC Canada's Sustainability and ESG practice, I help clients from various sectors to align their business strategies with the environmental and social challenges and opportunities of the future economy. With over 20 years as a sustainability consultant, I work at the intersection of technology and sustainability to help clients create value by utilizing technology to enable business transformation and support ESG reporting. In addition, I also contribute to the global discourse on nature-related financial disclosures as a member of the Taskforce on Nature-related Financial Disclosures (TNFD). I leverage my academic background in quantitative ecology and my professional credentials in project management and environmental auditing to facilitate multi-stakeholder dialogues, conduct Impact assessments, and have published peer-reviewed articles on conservation biology, climate change, and species recovery. I am passionate about driving positive change and creating value for both businesses and society.

Keynote - K4

Accounting for Natural Resources, Canadian Perspective

Joe St. Lawrence

Acting Assistant Director, Environment Accounts and Statistics Division, Statistics Canada, member of the UN System of Environmental-Economic Accounting (SEEA) Central Framework Editorial Board.



Bio

Joe holds an undergraduate degree from Queen's University in Biology, and a Master's degree in Environmental Studies from York University. He began work on environmental-economic accounting at Statistics Canada in 1998. His work focused on physical flow accounting (GHG emissions, energy use, and water use), energy supply and demand balances, asset accounts for natural resources, and input-output modelling. Joe was a member of the System of Environmental-Economic Accounting (SEEA) Central Framework Editorial Board which elevated the SEEA to an international statistical standard in 2012 and was Chair of the related United Nations London Group on Environmental-Economic Accounting from 2012-2015. He has worked extensively with United Nations Statistics Division to develop online and in-person SEEA training programmes and has delivered the programmes to several audiences to build global capacity in asset and flow accounting. More recently, Joe completed a 5-year period working on quarterly GDP, the National Balance Sheet, and labour productivity. Joe chairs the Area Group on Environmental-Economic Issues for the upcoming revision to the System of National Accounts manual in 2025.

Keynote - K5

Financial Innovations for Sustainable Development, a MDB (Multilateral Development Bank) View

Jingdong Hua

Vice-Chair of the International Sustainability Standard Board (ISSB), former Vice President and Treasurer of the World Bank



Bio

Mr. Hua joins the ISSB leadership team in October 2022 as Vice-Chair. He is also Vice President and Treasurer of the World Bank and serves as the Pension Finance Administrator of the World Bank Group. As Vice President and Treasurer of the World Bank, he is responsible for the capital markets operations and oversees an annual funding program of US\$60 to 70 billion. He leads a global team of capital markets professionals in the prudent management of US\$200 billion debt portfolio. Mr. Hua was previously Vice President and Treasurer of IFC, where he established a global treasury and focused on the development of local currency debt capital markets and innovative financial products and solutions. Prior to IFC, Mr. Hua served as Deputy Treasurer at the Asian Development Bank in Manila. He holds a B.S. in Chemical Engineering from Qingdao University of Science and Technology, an MBA Finance from the University of Texas at Arlington, and a Master of Public Administration (MPA) from Columbia University.

Keynote - K5

Mainstreaming the Social Pirate Mindset for a Sustainable Future

Dan Kershaw

Vice-Chair of the International Sustainability Standard Board (ISSB), former Vice President and Treasurer of the World Bank



Abstract

Join ICUBE's session and gain valuable insights from Dan Kershaw, the executive director at Furniture Bank. With a successful record of accomplishment in the non-profit sector, Dan Kershaw will share his experiences and expertise as the executive director of a thriving not-for-profit organization.

After Dan Kershaw's presentation, ICUBE and Sobeys will announce the launch of an extended hackathon with \$10,000 in cash prizes. Sobeys, Canada's second largest grocery retail, will present the challenges they are facing towards achieving their target of reducing 50% of the food waste by 2025. We will discuss eligibility criteria, the challenge, and other details around the competition.

Don't miss out on this chance to network with industry leaders, fellow innovators, and potential collaborators. Join us and be a catalyst for a more sustainable and circular future!



DAY 3

October 13, 2023

Keynote - K6

Climate Change and Human Health: Crafting a Prescription for a Sustainable Future

Jaime Hart

Associate Professor, Department of
Environmental Health, Harvard



Bio

Dr. Hart is an environmental epidemiologist and broadly her research focuses on environmental and occupational risk factors of a variety of health behaviors and chronic diseases, including respiratory and cardiovascular diseases, cancer, rheumatoid arthritis, and organs of the reproductive system. She is particularly interested in incorporating geographic information system (GIS) technologies and spatial statistics into these fields to improve exposure assessment, with the goal of operationalizing the exposome on chronic disease risk. She has primarily worked with data from large cohort studies based at Brigham and Women's Hospital and the Harvard T.H. Chan School of Public Health, such as the Nurses' Health Studies (NHS, NHSII, and NHS3), the Health Professionals' Follow-up Study, the Growing Up Today Study (GUTS), the US Railroad Workers Study, and the Trucking Industry Particle Study.

Abstract

Dr. Hart will discuss the health impacts of the major features of climate change, including air pollution, temperature, and natural disasters. She will also discuss opportunities for climate change mitigation strategies to have health co-benefits.

P5 - Empowering a Sustainable future through UN SDGs Challenge-Based Learning

Robert Martellacci

Founder and President, MindShare Learning

Abstract

"In this panel discussion, we will explore the potential of challenge-based learning to empower a sustainable future by engaging students in solving real-world problems related to the United Nations Sustainable Development Goals (SDGs). Challenge-based learning is an educational approach that involves posing a real-world problem or challenge to students and asking them to develop solutions using their knowledge, skills, and creativity.

Challenge-based learning can enhance K12 education by fostering collaboration, critical thinking, and problem-solving skills. By connecting learning to real-world problems and challenges, educators can help students develop a range of 21st-century skills that are essential for success in today's rapidly changing world. Moreover, by empowering students to develop invention solutions to the SDGs, challenge-based learning can create a more sustainable future for all.

Through this panel discussion, we will examine the potential of challenge-based learning to prepare students for a future that demands a sustainable mindset and a commitment to global citizenship. We will discuss best practices for integrating challenge-based learning into K12 education and share examples of successful initiatives that have empowered students to make a positive impact on the world. We will also explore the challenges and opportunities of incorporating challenge-based learning into the curriculum, including the need for teacher training and resources.

Overall, this panel discussion will provide insights into how challenge-based learning can enhance K12 education and empower students to create invention solutions to the SDGs, contributing to a more sustainable future for all.

"

P5 - Empowering a Sustainable future through UN SDGs Challenge-Based Learning

Anika de la Flor

Four Seasons Hotels & Resorts

Abstract

Regenerative hospitality is an emerging approach in hotels and resorts that goes beyond sustainability to actively restore ecosystems and communities. This presentation showcases several leading regenerative practices at hotels and resorts globally, highlighting environmental stewardship and social responsibility efforts across Four Seasons properties. These hotels and resorts implement regenerative practices such as reforestation, ecosystem restoration, preventing environmental degradation and supporting biodiversity. These initiatives also prioritize community empowerment, cultural preservation, and local engagement. Regenerative practices offer transformative experiences that reconnect guests and employees with nature and traditional cultures, promoting deeper understanding and appreciation. These practices catalyze change, inspiring guests and advocating for regenerative approaches throughout the tourism industry. Regenerative hospitality showcases that sustainability can drive innovation and positive impact, as hotels and resorts contribute to planetary restoration while creating memorable experiences for all.

P6 - Stories of Sustainability in Action: Lessons from across the tri-campus

Kristy Faccer

Dr. Kristy Faccer, Director, President's Advisory Committee on Environment
Climate Change and Sustainability (CECCS), University of Toronto

Bio

Kristy Faccer is the Director of the University of Toronto's President's Advisory Committee on Environment, Climate Change and Sustainability (CECCS). She is a trained facilitator, engaged scholar, and practitioner with over two decades of experience working on climate and sustainability solutions in Canada and internationally. Kristy serves in a variety of advisory roles, holds a PhD from the University of Cape Town Graduate School of Business, and is interested in how systems change, agents and collaboration facilitate innovative and meaningful climate action.

P7 - Climate Data Practices in the Greater Toronto Area

Robert Soden

Toronto Climate Observatory, University of Toronto

*"Robert Soden, University of Toronto, soden@cs.toronto.edu
Samar Sabie, University of Toronto, samar.sabie@mail.utoronto.ca
Steve Easterbrook, University of Toronto, sme@cs.toronto.edu
Nidhi Subramanyam, University of Toronto, nidhi.subramanyam@utoronto.ca "*

Abstract

This collaborative and multidisciplinary research project draws on practice theory as a tool for critically interrogating the role of data and information in in shaping how we know what we know about the ways in which climate change is impacting the Greater Toronto Area in the present, along with predictions for how this will accelerate in the future. We draw on a variety of methods including ethnographic fieldwork, interview studies, and document analysis to understand the role of data in the daily work and climate imaginaries of a range of publics, user groups, and communities across the region including youth climate activists, emergency managers, artists, transit planners, urban agriculture practitioners, and municipal governments. Our findings challenge naive forms of information determinism that situate data as a free-floating input to some (generally ill-defined) decision-making process, and instead demonstrate some of the multiple, complex, and situated ways in which data intervenes in the broader politics of climate action. We further unsettle dominant assumptions about both users and creators of climate data, as well as what is considered climate data in the first place. Our project contributes climate data practices as a methodological approach that is suitable for helping to gain analytic purchase on these questions across a broad range of contexts. This is necessary to understand the contemporary knowledge politics of climate change, and to guide the creation of alternative information infrastructures that support place-based, plural, and just climate action.

P8 - Integrating Business Sustainability into Business and Accounting Curricula

Zabihollah Rezaee

Thompson-Hill Chair of Excellence and Professor of Accounting
The University of Memphis

Abstract

"Business Sustainability is taking center-stage in the global competitive business environment. Business sustainability focuses on financial activities that generate long-term economic sustainability performance (ESP) to create shareholder value as well as non-financial activities that result in the achievement of environmental, social, and governance (ESG) sustainability performance to protect interests of all stakeholders. The ethics component of business sustainability is integrated into both ESP and ESG components. Our educational responsibility is to train the most competent and ethical future business leaders and accountants with cutting-edge, life-long learning, and relevant education including sustainability topics. Businesses worldwide have adopted the concept of profit-with-purpose to create long-term shared value for their stakeholders from shareholders to customers, employees, suppliers, society, and the environment.

In recent years, investors have demanded, regulators have required, and companies have disclosed long-term financial ESP information as well as non-financial ESG sustainability information. Global public companies today face the challenges of adapting proper sustainability strategies and practices to effectively respond to social, ethical, environmental, and governance issues while creating sustainable financial performance and value for their shareholders. Business colleges and accounting schools respond to the emerging initiatives in business sustainability by integrating these important educational topics into their curricula. This panel session is intended to: (1) provide a comprehensive discussion and suggested materials for those business colleges and accounting schools that are currently offering or planning to offer sustainability education, as well as for professionals who need an up-to-date understanding of emerging areas in business sustainability; (2) share teaching experience and research ideas on ESG-related topics; (3) present the status of integrated/sustainability performance reporting and assurance globally; and ((4) present research opportunities in business sustainability factors of performance, risk, reporting and assurance.

"

Bio

Zabihollah Rezaee is the Thompson-Hill Chair of Excellence and Professor of Accountancy at the University of Memphis and has served a two-year term on the Standing Advisory Group of the Public Company Accounting Oversight Board (PCAOB). Dr. Rezaee holds ten certifications including Certified Public Accountant (CPA). He is currently the editor of the Journal of Forensic Accounting Research (JFAR) and serving on the Hong Kong Accounting and Financial Reporting Council Panel (HKAFRC). Professor Rezaee has published over 270 articles and made more than 300 presentations, written 14 books including several books in sustainability, and served as expert witness.

P9 - Building Inclusive and Sustainable Communities

Marwan Ismail

Polycultural Immigrant Community Services

Abstract

The proposed panel discussion, titled "Building Inclusive and Sustainable Communities: Exploring the Nexus of Migration and Sustainability in the region," aims to shed light on the specific challenges and opportunities that arise from the intersection of migration and sustainability in the Region of Peel, Ontario, Canada. As a region experiencing significant demographic shifts due to migration, understanding and addressing the implications of this dynamic is crucial for fostering inclusive communities and advancing sustainable practices. The panel discussion will feature a diverse group of experts who will share their unique perspectives on migration and sustainability in the sector. The panelists, carefully selected to represent various stakeholders within the community, will offer insights from the region, community, policymaking, research, health and family aspects. The panel discussion will adopt an interactive format, allowing for a dynamic exchange of ideas between panelists and audience members. Each panelist will present a brief overview of their area of expertise, followed by an in-depth Q&A session moderated by Marwan. By exploring the specific context of migration and sustainability in the region, this panel discussion aims to generate actionable insights and recommendations for building inclusive and sustainable communities. It will address key issues such as social integration, economic opportunities, environmental stewardship, and the overall well-being of both newcomers and established residents. The outcomes of this discussion will contribute to informed decision-making and the development of targeted strategies to ensure the region thrives as a diverse and sustainable community.

W3 - Bridging the Gender & Digital Divide Through Entrepreneurship

Fatima Sultan & Amna Sultan

Two Sisters on a Mission

Abstract

Curabitur arcu erat, accumsan id imperdiet et, porttitor at sem. Praesent sapien massa, convallis a pellentesque nec, egestas non nisi. Cras ultricies ligula sed magna dictum

Bio

We are Canada's youngest social entrepreneurs who built a 500,000 company by age 14 and 12. All six Dragons on Dragon's Den made us an offer and we have spoken at 85+ business conferences around the world . We are the youngest EVER exhibitors and speakers at the largest North American tech conference - Collision, came in the top 5 national finalist at IBM Tech for Good against thousands of competitor, won various awards from UN and other organizations including a \$20,000 grant from Desjardin and invited as the youngest ever participant at MIT's hackathon! Our book was ranked #35 in Women in Business category on Amazon and our story has been featured in over 100 news publications & magazines. This mission is not about us or our accomplishments - it is much bigger. Through our journey of building a our company we realized the underrepresentation of females in the startup world and in leadership positions. Our mission is to solve that problem by empowering EVERY girl to live her best life!

W4 - Having Tea with our Lizard Self

Halyna Zalucky

Personal and Organizational Coach
ReEarthing

Abstract

In promoting sustainability we seek to address problems “out there.” But what if the world around us is a reflection of what is going on within? It can be argued that our external challenges stem from a shared belief that “I am not enough.” This sense of lack has driven us to continue to take from each other and our natural environment to fill this inner void. In this workshop, we will explore limiting beliefs by inviting our lizard selves for tea. In shining the light of awareness on our thoughts we hope to gain a sense of reconnection with ourselves, nature, and one another.

Bio

Halyna Zalucky is a certified Wayfinder Life Coach and adjunct faculty member within the Sustainable Business Management program at Seneca Polytechnic. She teaches a variety of courses, but her real passion is guiding students through a process of self discovery in her leadership course called “Thrive.” Halyna is an alumnus of the University of Toronto having completed an Honours Bachelor of Arts in International Relations and Political Science. She holds a Master of Arts in Migration Studies from the University of Kent and a Certificate in Sustainability Management from the Toronto Metropolitan University. Halyna is a daily yoga practitioner, weekend farmer, city cyclist, novice djembe drum player and nature lover.

W5 - Tech4All - How to Refurbish Computers through Community Empowerment

Alison Canning

Shared space in SAJE Vital Signs First Aid

Abstract

Computers have become an essential tool for individuals to contribute, connect and thrive professionally, personally, and academically. The increase demand and advancement in technology creates a significant e-waste problem across the world. This youth-led session will begin with an open discussion of the impact of e-waste on a local and global scale. It will be followed by a hands-on learning session on the internal components of a computer so that participants can then refurbish a used computer and test it through our easy-to-follow process. The session will end with participants making a pledge to protect our planet while helping others.

Bio

Ali Canning is the visionary Founder and Executive Director of Let's Get Together, a non-profit committed to leveling the educational playing field. Leading the Tech4All initiative, Ali, along with her peers and many volunteers, strive to provide every Canadian in need with a computer to own by 2026. As a dedicated mother, community champion, and tech enthusiast, Ali sees post-secondary students as catalysts for healthier, more equitable communities and a sustainable future. Her mantra, "Every hand counts. No hand is too small," drives her mission. With a rich background from working at the Miles Nadal Jewish Community Centre, University of Toronto, and Habitat for Humanity Halton-Mississauga, Ali brings a wealth of experience to her transformative work.

Keynote - K7

Canada's health system in a climate crisis: towards a climate resilient, low carbon, sustainable health system

Linda Varangu

Senior Advisor Climate Change,
Canadian Coalition for Green
Healthcare



Bio

Linda Varangu, M.Eng. Senior Advisor, Climate Change. [Canadian Coalition for Green Health Care](#)

Linda has been empowering health care facilities to improve environmental stewardship since the 1980's. Thankfully there has been much progress since then! She has led organizations and projects to reduce waste and use of toxic chemicals, provide healthy local foods, save energy and water and help facilities prepare and adapt to the impacts of climate change. The projects Linda has led for the Coalition have been recognized by national and international awards promoting energy efficiency in health care and action on climate change. Over the past 9 years Linda led the Coalition as Founding Executive Director and stepped aside in 2019 to focus on the climate emergency as Senior Advisor, Climate Change. Linda also serves on the Executive Committee of CASCADES Creating a Sustainable Canadian Health System in a Climate Crisis, which is led by the University of Toronto and is a national climate action and awareness initiative for health care. Linda is also the Climate Lead for PEACH Health Ontario, a provincial initiative encouraging environmental and climate action at Ontario hospitals and health care facilities.

The focus of today's presentation will be on climate change and the health system, touching on the impact of the health care on climate change, and climate actions which can lead to a climate resilient, low carbon, sustainable health system.

Abstract

The climate emergency is a health emergency. As a citizen you may have observed or experienced the many types of extreme weather events over the last several years, such as increased heat, flooding, extreme storms, forest fires, or new and emerging diseases and pests. The health system, which delivers care to those in need, is also affected. Some health care facilities such as hospitals, residential care homes, and clinics, have been damaged or strained by extreme weather events, and the health care workforce is stressed and strained to ensure the care is delivered as a result of extreme weather events or during them. In this presentation we will look at how a climate resilient, low carbon, and sustainable health system can contribute to a healthy health system.

Concurrent Session -CC1

Love, Planetary Citizenship, and Sustainability

Day 2 | October 11, 2023 | 10:45am

104



Love, Planetary Citizenship, and Sustainability; Vedic Principles of Environmental Management in the Context of Modern Eco-System Management

Sunita Singh Sengupta

Professor
Faculty of Management, University of Dheli

Abstract

The present paper is extracted from "Global Climate Change and Eco-System Management: Insights from Vedas" which is 8th Volume of the 9 Volume Research Report on Vedic Foundations of Indian Management sponsored by Indian Council of Social Science Research, New Delhi, India. The present paper draws insights from Bhumisukta- Atharva Veda 12.1 and discusses different sutras for environmental management in the context of modern eco-system management.

Bio

Working currently as a Professor at the Faculty of Management Studies, University of Delhi. Her immediate past role was as Head and dean at the Faculty of Management Studies, University of Delhi. She joined the Faculty of Management Studies as a full Professor of Organizational Behaviour on September 7, 2005. Prior to this, she worked as an Assistant & Associate Professor for about 10 years in the Behavioural Sciences Group at Indian Institute of Management Calcutta.

Singh Sengupta is the Founder and Honorary Convener of the Integrating Spirituality and Organizational Leadership Foundation (isol.asia). In 2010 she started ISOL Research Foundation <http://isol-research.asia> which is committed to carrying out research into Indic and Vedic studies and integrating the insights into modern management practices. To add further she is the Founder of ISOL Global Foundation (USA) and ISOL Chicago Declaration launched on September 11, 2015 at Fullerton Hall, The Art Institute of Chicago to promote and carry out research and academic initiatives on Indian Culture, Philosophy and Management in USA. On March 3, 2019, Singh Sengupta registered the Academy of Value-based Management as a not-for-profit organization in Canada.

Singh Sengupta has edited a 10 Volume Compendium on Integrating Spirituality and Organizational Leadership that was launched on September 11, 2015, at Fullerton Hall, The Art Institute of Chicago.

Recently she completed writing a 9 Volume Compendium on Vedic Foundations of Indian Management sponsored by ICSSR. Singh Sengupta is the Founder Editor of the International Journal on Spirituality and Organizational Leadership, ISSN 2320 – 222X, and the International Journal on Vedic Foundations of Management, ISSN 2321 – 4473. Her upcoming book is "Handbook of Indian Culture, Philosophy, and Management" in 2024 by Springer.

Love, Planetary Citizenship, and Sustainability; Knowledge as Loving Gift of the Land: A Non-Extractivist Reading of Genesis 3, 3. Jennifer Holzer. Could highly sensitive people be an untapped font of sustainability leadership?,

Rosemary Boissonneau

Faculty of Theology, University of St. Michael's College, 81 St. Mary's Street, Toronto ON M5S 1J4

Abstract

"Indigenous scholar Leanne Betasamosake Simpson teaches that Nishnaabeg knowledge is created and transferred by engaging in sustainable practices of reciprocity, humility and respect on the land, by recognizing the land as teacher and by learning through careful open-minded observation of it. Moreover, she explains that the Nishnaabeg word that denotes knowledge is translated literally as "that which is given lovingly to us by the spirits."

In my presentation, I will apply this Indigenous understanding of knowledge to the story in Genesis 3 of humanity's first sin in garden of Eden. Rather than coming to know good and evil through observing the tree as part of a non-hierarchical, mutually sustainable and respectful relationship with the garden, the humans eat its fruit in an unsustainable act of selfishness and dominance in an attempt to gain divine knowledge that would place them above the rest of the community of creation.

"

Bio

Rosemary Boissonneau is a PhD candidate in eco-theology and scripture at the University of St. Michael's College. Her dissertation project explores how the Hebrew Bible portrays fertile land as a maternal co-creator with God and a medium of God's blessings. Rosemary also holds a conjoint MA in Theological Studies from the University of Toronto and the University of St. Michael's College and an MTS with a Certificate of Specialization in Theology and Ecology from the University of St. Michael's College. Prior to her graduate studies, she enjoyed a long career as an elementary school French teacher.

Love, Planetary Citizenship, and Sustainability; Pathways to knowledge co-existence: Indigenous and Western knowledge management and integration in Australia

Melissa Nursey-Bray

University of Adelaide, South Australia, Australia

Abstract

"Despite decades of policy effort, the world faces a biodiversity crisis of massive proportions with more than a million animal and plant species now threatened with extinction and we continue to face unprecedented climate risk. Australia is also facing unprecedented environmental challenge – estimates put the tangible costs of the 2019 bushfires alone at over \$100 billion while the floods that occurred during the summer of 2010-11 cost the Australian economy an estimated \$30 billion. More than 50 animal and 60 plant species have been lost, and Australia has recorded the highest rate of mammalian extinctions in the world. Meaningful inclusion of Indigenous knowledge into science-based policy will make direct contributions to building resilience and to disaster recovery of catastrophic events such as the 2019-2020 bushfires. This paper presents initial results of a co-designed project, that investigates how Indigenous knowledge of managing Australia's unique natural resources could make a contribution to solving these problems. It seeks to do so via building pathways for knowledge co-existence that will build social justice outcomes for Indigenous peoples, and Indigenous voices visible and tangible in sustainable environmental governance and climate change adaptation policy.

"

Love, Planetary Citizenship, and Sustainability; Sustainability Action Lab (SAL): Designing Curriculum by Embedding Experiential Learning.

Amit Lahiri

School of Environment, Enterprise and Development (SEED), Faculty of Environment, University of Waterloo

Abstract

Despite a long history and consensus on student-centered learning approaches, many universities still lag in fully integrating them into their academic programs (Canboy et al., 2016). It is precisely this gap that the paper seeks to address. This paper develops a prototype of a 'Sustainability Action Lab' which would catalyze the young human capital of universities to become transformative future leaders by providing a platform for conducting experiments to generate evidence for policy analysis and advocacy of solutions to local grand challenges of the 21st century (Verhoef et al, 2019), focussing on confining human and economic development within the limits of planetary boundaries (Rockstrom, Steffen et al, 2009). The SAL prototype builds on converting available academic research outputs into a 'living lab' model from numerous global benchmarks initiatives on higher education sustainability, like The New Framework ESD for 2030 (2020-2030) approved by the 40th UNESCO General Conference in November 2019.

Bio

Amit is currently a PhD candidate in sustainability management at the School of Environment, Enterprise and Development (SEED), Faculty of Environment, in the University of Waterloo. His prior career has included being a chief sustainability officer at a premier globally ranked university in India, a professor in the graduate international business management program at an Ontario college and a marketing manager at a life sciences multinational. His previous qualifications are a MES from York U, a Grad. Diploma in Business and Environment from the Schulich School of Business and a MSc in molecular biology from the University of Mumbai.

Love, Planetary Citizenship, and Sustainability; Could highly sensitive people be an untapped font of sustainability leadership?

Jennifer Holzer

Postdoctoral Fellow
Brock University

Abstract

"Human connections to nature are critical to the sustainability of life on Earth. Strong human-nature connections are often linked with pro-environmental behaviours; therefore, a more nuanced understanding of human-nature connections can better inform policies and practices to advance sustainability. Connections to nature research has rarely investigated nuances like distinguishing between types of nature connections or looking at the nature connections of unique subpopulations.

Here we assessed individuals across five nature connection types: material, experiential, cognitive, emotional, and philosophical, with an interest in highly sensitive people (HSP). HSP comprise about one-third of the population, exhibiting greater sensitivity to stimuli and greater reactivity to their environment than the general population. We found that HSP hold deeper nature connections than non-HSP with respect to all five nature connection types. Future research can investigate links between nature connections and pro-environmental behaviour to identify opportunities to leverage HSP as leaders in sustainability action.

"

Bio

Dr. Holzer is a postdoctoral fellow at the Environmental Sustainability Research Centre at Brock University and the Sustainable Futures Lab at McGill University. She currently leads research projects in three areas: building an implementation science for sustainability, understanding stakeholder and rightsholder engagement in environmental research and governance, and investigating how human connections to nature influences environmental stewardship behaviour in subgroups with special characteristics. Dr. Holzer earned her PhD at the Technion – Israel Institute of Technology, where she evaluated the impacts of social-ecological research across Europe. She was previously a project manager for energy and sustainability projects in California.

Concurrent Session -CC2

Interrogating the Links Between Economic Growth, Development, and Sustainability

Day 2 | October 11, 2023 | 10:45am

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Interrogating the Links Between Economic Growth, Development, and Sustainability; Production and Waste Valorization from Tailings and Chemical Emissions using Renewable Electricity

Hui Huang Hoe

Founder and Inventor of elerGreen
elerGreen Industry Corporation / 1464 Queen Street West, Toronto, Ontario M6K 1M2

Hui Huang Hoe (huihuang.hoe@elergreen.com) and Hui Ming Hoe (huiming.hoe@elergreen.com)

Abstract

elerGreen uses technology to recover valuable polymers, metals and chemicals from chemical waste and renewable electricity, in economic and eco-friendly way. Historically, producing polymers electrochemically is known for low-cost and eco-friendly, yet was not employed because most polymers rapidly block the electrode and halt the reaction, for being non-conductive. elerGreen solved this problem, by redesigning the electrode into relative motion against removal blade, to scrub non-conductive polymer solids continuously from blocking. For compostable polymer production, this includes polyglycolic acid for food packaging to be produced electrochemically at much lower cost. While initially designed to solve electrode blockage, the novel solid removal reactor is lower cost, more efficient and scalable to produce valuable metals from tailings or in electrometallurgy. elerGreen catalyzes climate action for CO₂ valorization, energy-efficiency and replacing fossil fuel combustion with renewable electricity. Internationally, elerGreen is recognized as PERUMIN Finalist for meeting various UN Sustainable Development Goals (SDGs).

Bio

Hui Huang Hoe is a cleantech entrepreneur who founded elerGreen, to recover valuable polymers, metals and chemicals from wastes and renewable electricity, in economic and eco-friendly way:
<https://www.youtube.com/watch?v=LxN1F9IAEJo>

Hui Huang holds Master and Bachelor (High Honours) degrees in Chemical Engineering, with background in Sustainable Energy, Environmental Engineering, and Engineering Business. He also is a serial inventor in green electrochemistry, where UofT patented his prior research "Electrochemical Carbon Dioxide Utilization":
<https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2018027322>

Beyond cleantech, Hui Huang cradles youth entrepreneurship by coaching students in Venture for Canada (VFC) Intrapreneurship. He also authored numerous journals, and published free book "Mathematica Particularis":
https://www.researchgate.net/publication/322746972_Mathematica_Particularis

Interrogating the Links Between Economic Growth, Development, and Sustainability; Economic growth facilitates household fuel use transition to reduce PM2.5-related death in China

Claus Yanchuan Shao

Phd candidate
University of Toronto Mississauga & Nanjing University

Yanchuan Shao, Riyang Liu, Jianxun Yang, Miaomiao Liu, Wen Fang, Litiao Hu, Jun Bi, Zongwei Ma All authors are affiliated with Nanjing University

Abstract

Exposure to ambient and indoor particle matter (PM2.5) leads to millions of premature deaths in China. In recent years, indoor air pollution and premature deaths associated with polluting fuel cooking demonstrate an abrupt decline. However, the driving forces behind the mortality change are still unclear due to the uncertainty in household fuel use prediction. Here we propose an integrated approach to estimate the fuel use fraction and PM2.5-related deaths from outdoor and indoor sources during 2000-2020 across China. We find economic growth is the dominant driver of fuel use transition and avoids 21% related deaths (357,000, 315,000-402,000) from polluting fuel cooking, which offsets the adverse impact of ambient emissions contributed by economic growth. Our findings give an insight into the coupled impact of socioeconomic factors in reshaping health burden in exposure pathways.

Bio

Yanchuan Shao is a Phd candidate at Nanjing University and now a visiting student at University of Toronto Mississauga. His field of specialization is air pollution modeling and health burden analysis. He is also interested in research associated with causal inference including the socioeconomic drivers of air pollution.

Interrogating the Links Between Economic Growth, Development, and Sustainability; Critical reflection: the role of sustainability management in addressing systems, boundaries, and governance challenges

Leah Feor

PhD Candidate and Research Assistant
School of Environment, Enterprise and Development (SEED), Faculty of Environment, University of Waterloo

Abstract

Sustainability management is a multidisciplinary field of study that includes the theorization and operationalization of sustainable development. This paper describes historical and current debates in the field of sustainability management and critically reflects on how the field addresses systems, boundaries, and governance challenges. Specifically, this paper provides a discussion on key topics including greening the economy, sustainable production and consumption, decoupling and decarbonization, and sustainability accounting as a means to measure progress on sustainable development. Sustainability management is preoccupied with the resilience of our biosphere to ensure the maintenance of life-supporting systems. From a theoretical perspective, sustainability management should focus on complexity and multilevel governance to address challenges related to unpredictability and scalability. In practice, sustainability management must capture all levels of government and non-state actors to increase implementation efforts and accountability globally; corporations alone cannot address sustainability issues.

Bio

Leah Feor is a PhD candidate in the Sustainability Management program and a graduate of the Master of Environment and Business program at the University of Waterloo. Leah's research examines the sustainability and climate change performance measurement practices of Canadian municipalities. She is interested in the types of indicators municipalities use to measure progress and how local performance measurement practices can be enhanced to align with national and international priorities. Before joining the PhD program, Leah taught courses in accounting, ethics, and organizational sustainability at Niagara College. Additionally, Leah has professional experience as a financial auditor and social entrepreneur.

Interrogating the Links Between Economic Growth, Development, and Sustainability; Effects of Call Centre Services on Mobile Money Participation in Ghana

Emmanuel Kwablah Apiors

Department of Geography and Sustainability Science, University of Energy and Natural Resources, Ghana

Abstract

Mobile money has been a growing part of the Ghanaian economy in the last decade. It is fast and convenient medium of payments, and promises means of saving and financial inclusion for the unbanked. However, there exists a wide gap between registered mobile money accounts and active mobile money account. There also exists a lack of awareness of the benefits of formal financial-market participation that may be derived from owning a mobile money account among people. Through a randomised control trial experiment we analyse the effect of providing call centre services on the use of mobile money for transactions in Ghana. We find a significant positive impact of call centre services on the recent usage of mobile money for a transaction. However, no significant evidence of the call centre services was found on new mobile money account ownership, payments, remittances nor savings through mobile money. We discuss the reasons for these findings, and the implications for digital financial inclusion.

Concurrent Session -CC3

Eco-Anxiety: Roots and Shoots

Day 2 | October 11, 2023 | 10:45am

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Eco-Anxiety: Roots and Shoots; Pedagogies of Hope and Resilience

Simon Apolloni

Assistant Professor, Teaching Stream
School of the Environment, University of Toronto

Bio

Simon has taught environmental studies for many years and loves the student-teacher interactions. He has written *Convergent Knowing: Christianity and Science in Conversation with a Suffering Creation* (McGill-Queens 2018) and more recently co-edited a book *Generation Laudato Si': Catholic Youth on Living Out a Ecological Spirituality*.

Eco-Anxiety: Roots and Shoots; Embodying Eco-Anxiety

Nolan Scharper

Embodying Eco-Anxiety

Eco-Anxiety: Roots and Shoots; Environmental Crisis and Rising Eco- anxiety Amongst Youth: Creating Possibilities through Probing the Disruptions

Romila Verma

Dr.

Department of Geography, 100 St. George Street, Toronto

*Hilary Van Welter, CEO Ascentia, ascentia@rogers.com Dr. Romila Verma, Instructor, Department of
Geography, University of Toronto romila.verma@utoronto.ca*

Abstract

We are witnessing unprecedented environmental crisis like, climate change, loss of biodiversity, resource depletion, and pollution, to name a few. These environmental changes are impacting the emotional well being of young generation disproportionately. To address the issue of eco-anxiety, and how to cope with it, this study is based on in-class activity with a group of 42 undergraduate students in third/fourth year, titled, Burr, Buzz and Flow. Our intention is to create a sustainable learning system in which the students can thrive and seek solutions through the lens of water. By creating a simple, and creative process that first probes into the disruptions, then seeks possibilities through the language of symbols and finally arrives at original thinking, new solutions emerge. It is both- a deeper exploration of current circumstances while at the same time providing the opportunity to personally create practical solutions.

Bio

Dr. Verma is an Instructor with the School of the Environment and Department of Geography at University of Toronto. She teaches courses on environmental science and water management. Her research work focusses on climate change impacts on freshwater, watershed management, source water protection and hydrological analysis of river systems. She is the founder of Not-for-Profit organization- Water Speaks, an initiative that strives to translate the voice of water through research, education, and action. Her award-winning documentary, Water Be Dammed...traces the story of challenges, hopes and aspirations of water's will to survive and rejuvenate. www.waterspeaks.org

Concurrent Session -CC4

Collective Action and Sustainability

Day 2 | October 11, 2023 | 10:45am

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Collective Action and Sustainability; The League of Cities: A Sustainability Imperative

Daniel Hoornweg

Associate Professor
Ontario Tech University, Oshawa, Ontario

Abstract

"From the 13th to 17th centuries the Hanseatic League of Cities brought relative peace and enhanced prosperity to some 200-member cities of what-is-now northern Europe. The League gave rise to nation-states. A similar league of sustainable communities is now emerging that may well serve to anchor the global transition to sustainability.

This paper presents evidence and further argues that urban communities are key drivers of sustainable development. Urbanization is a powerful and promising ingredient of sustainability, and sustainable development must be anchored locally in cities that aspire for global prosperity. Which cities are leading in implementing sustainable development? Why, how, and are there ways to fast-track these efforts? From 1950 to 2050 the world's urban population will increase from less than 1 billion to almost 7 billion, with commensurate environmental degradation. For their own security, and to help ensure prosperity, cities are being forced to join together, again.

"

Bio

Dan is Associate Professor in Energy Systems Engineering at Ontario Tech University. Before that, he was Lead Advisor with the World Bank overseeing Sustainable Cities and Climate Change programs. Dan was the Chief Safety and Risk Officer for the Province of Ontario 2012-2020.

Dan is a Fellow with Canada's Transition Accelerator and the Global Cities Institute at University of Toronto, a Board Member of the Georgian Bay Biosphere, past board member with Clean Air Partnership, and served as Chair of the Region of Durham's Roundtable on Climate Change. Dan researches energy and material flows of urban systems.

Collective Action and Sustainability; Community Climate Action Hubs: The necessity of equitable public space

Victor Perez-Amado

Assistant Professor

Community Climate Action Hubs: The necessity of equitable public space

Victor Perez-Amado (Assistant Professor TMU-SURP, victor.perezamado@torontomu.ca), Ryan Cheung (Project Lead, Outreach & Engagement Environment & Climate Division, City of Toronto, ryan.cheung@toronto.ca), Leah Yuyitung (Climate Action Champion, Woburn-Scarborough Community Resident, woburncommunityresidents@gmail.com)

Abstract

"Twenty-five neighbour champions have undertaken community-focused climate action initiatives across Toronto through TransformTO's Neighbourhood Climate Action Champions Program. In 2021, Victor Perez-Amado (Toronto Metropolitan University) partnered with five Champions and Toronto's Environment & Energy Division to design and create five Community Climate Action Hub (CCAH) innovations in underserved parks in Toronto. These innovations aim to 1) reinvent outdoor spaces by introducing green infrastructure, 2) provide environmental education, and 3) offer active transportation.

The CCAH's designs resulted from interactive community engagement events that reflected the neighbourhood's needs while expanding opportunities for learning about sustainable and environmental initiatives. The green infrastructure provides a 'living field guide' to the native trees and pollinator-wildflowers from Ontario, and serves as a testbed and demonstration site for food-growing techniques and strategies.

The projects are funded by the Federal Economic Agency of Southern Ontario - Canada Revitalization Fund Grant and will open in the summer of 2023. "

Bio

Victor Perez-Amado is an Assistant Professor at the Toronto Metropolitan University School of Urban and Regional Planning; he is trained as an architect and urban designer and graduated from Harvard University Graduate School of Design.

His academic research is based on aging-in-place studies and multigenerational housing, including in 2SLGBTQI+ communities. These projects include Lathrop Communities in Massachusetts, a masterplan and design for independent and assisted living focusing on seniors with dementia and autism, and the Boston Home-Harmon Apartments, independent living for seniors with mental disabilities. On another scale of engagement with the city, Perez-Amado is interested in activating public spaces by designing and building equitable and educational installations. His methodology is based on theories of placemaking, where he explores prototyping, visualization, public realm activation and community engagement.

Perez-Amado's work has been exhibited at the 2019 and 2023 Seoul Biennale of Architecture and Urbanism and the Harvard GSD Grounded Visionaries, among others.

Collective Action and Sustainability; Community Climate Action Hubs: The necessity of equitable public space

Ryan Cheung

Project Lead
City of Toronto - Environment & Climate

Victor Perez-Amado (Assistant Professor TMU-SURP, victor.perezamado@torontomu.ca), Ryan Cheung (Project Lead, Outreach & Engagement Environment & Climate Division, City of Toronto, ryan.cheung@toronto.ca), Leah Yuyitung (Climate Action Champion, Woburn-Scarborough Community Resident, woburncommunityresidents@gmail.com)

Abstract

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Bio

Ryan Cheung is a Project Lead in the City of Toronto's Environment & Climate Division. In his role, he leads climate action engagement work to support the City's TransformTO climate action strategy. Ryan developed the Neighbourhood Climate Action Champions program to train residents to lead climate action engagement and develop community projects that reduce emissions and addresses community needs.

Collective Action and Sustainability; Helping Rural Communities Respond to Disruption: Who and how?

Amanda Mongeon

PhD Student

Helping Rural Communities Respond to Disruption: Who and how?,

Amanda Mongeon, Dr. Leith Deacon, Dr. Kate Mulligan

Abstract

Approximately 29% of Canadians live in rural areas. Distinctive histories, governance systems, and social-ecological relationships in these communities call for equally distinctive approaches to building resiliency, transformation, and sustainability. This presentation will share findings from a CIHR-funded research project that is using a transdisciplinary approach to explore the experiences of small and rural municipalities during the COVID-19 pandemic. The project aims to identify opportunities to strengthen their response to future disruption, whether from another pandemic, climate change, or economic instability. Employing a broad conceptualization of human health and wellbeing that includes resiliency, transformation, and ecological health, the presentation will share factors shaping rural health and governance, explore the roles of actors who shaped the COVID-19 response, and identify opportunities for them to contribute to future community resilience.

Bio

Amanda is a PhD student at the University of Guelph's, studying governance for health and wellbeing in rural communities. Amanda is also a Program Manager at Timiskaming Health Unit, where she supports work in Community Health. She is a board member with the Canadian Health Association for Sustainability and Equity and holds the Credentialed Evaluator designation with the Canadian Evaluation Society. Amanda lives in Temiskaming Shores in Northern Ontario.

Concurrent Session -CC5

Sustainable Food Systems

Day 2 | October 11, 2023 | 10:45am

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Sustainable Food Systems; Sustainability Assessment of Pulse Protein Extraction in Canada Using an integrated framework of process optimization combining Technical, Economic, and Environmental Criteria,

Jannatul Ferdous

University of British Columbia, Kelowna, Canada

Farid Bensebaa, National Research Council Canada, Farid.Bensebaa@nrc-cnrc.gc.ca; Nathan Pelletier, University of British Columbia, nathan.pelletier@ubc.ca

Abstract

Using either life cycle assessment (LCA) or techno-economic analysis (TEA) to assess the feasibility of a product supply chain does not provide a wholesome analysis. This study proposes an integrated framework of LCA, TEA, process simulation and optimization for assessing the sustainability of pulse protein extraction pathways in Canada. A systematic review of published articles helped to identify the key characteristics of the sector-specific integrated frameworks and to formulate one for pulse processing pathways. Considering different system boundaries and functional units for LCA (cradle-to-gate) and TEA/process simulation (gate-to-gate) is noteworthy, but the study suggests considering the same functional units (both mass and functionality based) based on output material. Apart from following ISO 14044 for LCA and standard TEA methodologies, the proposed framework also suggests integrating process simulation, genetic algorithm-based multi-objective optimization, GIS models for spatially explicit LCA of pulse production scenario, and analytical hierarchy process to facilitate multi-criteria decision making.

Bio

Ms. Jannatul Ferdous is a Ph.D. Candidate in the Interdisciplinary Graduate Studies (Sustainability) program at the University of British Columbia. Her Ph.D. research is about the sustainability assessment of food systems. She is working with the Pulse Processing Industries in Canada to promote sustainable and optimized pathways to fractionate pulses to obtain pulse protein. She will integrate Life Cycle Assessment, Techno-Economic Analysis, Process Simulation, Multi-Objective Optimization, and Multi-Criteria Decision Making tools to assess the sustainability and optimize the current and emerging fractionation pathways.

Sustainable Food Systems; Food Waste Imperatives and It's Management Through Community Driven Initiatives,

Vivek Agrawal

Trustee Secretary, Centre for Development Communication, India

Dr. Vidhu Kumar Mathur, The ICFAI University, Jaipur, India

Abstract

Around one per cent of GDP gets shaved off annually in the form of food waste. According to the agriculture ministry, Rs 50,000 crores worth of food produced is wasted every year in the India. In resource terms, India is estimated to use more than 230 cubic kilometre of fresh water annually — enough to provide drinking water to 100 million people a year — for producing food items that are ultimately wasted. Besides this, nearly 300 million barrels of oil used in the process is also ultimately wasted. At the consumption level, food waste has been ascribed to increasing consumerism, cultural factors, socio-economic factors and various policies and applicable regulation. One key method of reduction of food waste at consumption level has been identified as food recovery and redistribution. This paper shows how community driven initiatives have made significant contribution in reducing food waste, its redistribution and raising awareness amongst the community, It suggests a methodology which can bring in efficiency and increase the scalability of the initiative.

Sustainable Food Systems; A systematic review of the potential sustainability implications of extended lay cycles in commercial laying hens relative to current Canadian norms

Vivek Arulnathan

Food System PRISM Lab, University of British Columbia Okanagan

Vivek Arulnathan (vivek.arulnathan@ubc.ca), Ian Turner (ian.turner@ubc.ca), Nicole Bamber (nicole.bamber@ubc.ca), Jannatul Ferdous (jannatul.ferdous@ubc.ca), Florian Grassauer (florian.grassauer@ubc.ca), Nathan Pelletier (nathan.pelletier@ubc.ca)

Abstract

Lay cycles in the Canadian egg industry on average end at 68-70 weeks of age. Due to increased productivity and longer cycle lengths in other countries, the sustainability implications of extending lay cycles in Canada should be explored, considering environmental, economic, and animal welfare aspects. A systematic literature review was undertaken to identify helpful management practices and analyze productivity, egg quality, and animal welfare outcomes in the late laying phase. Interventions such as high protein diets and split feeding were found to potentially improve productivity and egg quality. Productivity was at acceptable levels well beyond 70 weeks of age. Performance on egg quality and animal welfare measures were at acceptable levels, but increased variability was observed beyond ~80 weeks of age. The results of this review provided preliminary evidence in support of extending lay cycles in Canada, but further analysis is required (and underway) before conclusive recommendations can be made.

Bio

Vivek Arulnathan is a Post-Doctoral Research Fellow in the Food Systems PRISM Lab at the University of British Columbia, Okanagan. Dr. Arulnathan completed his Ph.D. from UBC in 2023 and his doctoral research was focused on developing the National Environmental Sustainability and Technology Tool for Canadian egg farmers. He has also worked with Egg Farmers of Canada, American Egg Board, Pulse Canada, Soy Canada, and the Indian tea industry on a wide range of other sustainability-related projects. Dr. Arulnathan's primary expertise lies in the application of life cycle thinking approaches for improved sustainability outcomes in the agri-food sector.

Sustainable Food Systems; Alternative HVAC system considerations for egg industries in temperate climates: A systematic review of current systems, insights, and future directions,

Leandra Vanbaelinghem

Interdisciplinary Graduate Studies – Sustainability, College of Graduate Studies, UBC Okanagan

Leandra Vanbaelinghem, Master's candidate in the Interdisciplinary Graduate Studies – Sustainability at the University of British Columbia- Okanagan, lvanba@student.ubc.ca. Nathan Pelletier, assistant professor jointly appointed in the Faculties of Arts and Sciences (Biology and Management) at the University of British Columbia – Okanagan, nathan.pelletier@ubc.ca. Florian Grassauer, postdoctoral research fellow at the University of British Columbia – Okanagan, florian.grassauer@ubc.ca. Andrea Costantino, postdoctoral research fellow at Universitat Politècnica de València, andrea.costantino@polito.it.

Abstract

Industrial egg production is amongst the most rapidly expanding livestock sectors worldwide. Accordingly, ameliorating sustainability outcomes in the industrial egg sector is critical. Most non-renewable energy in poultry house operations is consumed by heating, ventilation, and air conditioning (HVAC) systems. In this study, a dynamic energy simulation model considering the physiological requirements of poultry and confined housing was used to estimate the heating and cooling requirements of caged and free run poultry housing systems in four temperate climatic zones, using Canada as an example. Based on a subsequent review of 225 papers, priority recommendations for alternative HVAC applications in egg production were synthesized based on heating and cooling requirements, energy efficiency findings, possible environmental impact findings, technological maturity and affordability. Earth-air-heat exchangers and ground-source heat pumps were identified as priority systems for further assessment regarding suitability and environmental sustainability in the industrial egg sector in temperate climates.

Bio

Leandra is originally from France and is currently a second year MSc student at the University of British Columbia- Okanagan in the Interdisciplinary Graduate Studies - Sustainability program. She completed a BSc in Biology at Mount Allison University in New Brunswick, where she carried out intertidal ecology research in the Bay of Fundy. Her research at UBC involves using life cycle assessment to explore the potential application of alternative Heating, Ventilation, and Air conditioning (HVAC) systems in egg industries to reduce the environmental impacts of egg production in Canada.

Concurrent Session -CC6

Natural Resources and Sustainability

Day 2 | October 11, 2023 | 10:45am

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Natural Resources and Sustainability; Legal Environment of Adverse Possession on Forestland and Empirical Evidence from the Past 200 Years in USA

Changyou Sun

Professor

Department of Forestry, Mississippi State University, USA

Changyou Sun, Department of Forestry, Mississippi State University, USA, cs258@msstate.edu; Hui Wang, School of Economics and Management, Beijing Forestry University, China, huiwang@bjfu.edu.cn

Abstract

Private forestland has become more fragmented in the United States. In this study, the legal environment of adverse possession as a method of acquiring title to forestland in the United States is examined. Statutes in 50 states as of November 2021 and 243 published legal cases from 1802 to 2021 are identified and analyzed. Content analysis reveals that the required statutory period has an average of 13 years. Empirical evidence from the cases discloses that the quiet-title action has been the dominant lawsuit type, the activities by adverse possessors on forestland are mainly related to timber and tax payment, and actual use and the continuous period of possession are the most commonly examined elements. An adverse possessor without any title to the disputed land can use forestland, but the probability of receiving a title is small. When forest landowners have a portion of property rights of the disputed land, they have extensively used adverse possession as a legal tool to clean the title.

Bio

Dr. Changyou Sun is the George L. Switzer Professor of natural resource economics at Mississippi State University. He received his Ph.D. degree in applied economics from Auburn University in 2001. Currently, he teaches Natural Resource Policy, Natural Resource Law, Research Methods, and R Programming. His research has focused on timberland investments, international trade, climate change, legal environment of natural resource management, and economic analysis of property rights. He has been an active member of the International Society of Forest Resource Economics and similar professional associations.

Natural Resources and Sustainability; Incentives for Biodiversity Conservation under Asymmetric Land Ownership

Qambemeda Masala Nyanghura

Center for Development Research, University of Bonn, Germany

Lisa Biber-Freudenberger, Center for Development Research, University of Bonn, Germany, lfreuden@uni-bonn.de. Jan Börner, Center for Development Research, University of Bonn, Germany, jborner@uni-bonn.de.

Abstract

Protected areas are important for biodiversity conservation, but their effectiveness depends on their ability to maintain and restore the integrity and connectivity of ecological systems. Monetary incentives may stimulate landowners to preserve valuable agricultural land, but their impacts on landscape connectivity depend on cooperation among landowners. Fairness in the distribution of such payments was shown to boost conservation, but the sources of inequity in the allocation of conservation payments can be manifold. Here we focus on the role of relative deprivation due to asymmetric land ownership. We conducted a lab-in-the-field experiment with 384 Tanzanian farmers to explore conservation outcomes under two alternative payment schemes and levels of equality in land ownership. Our findings suggest that unequal land ownership did not significantly affect the cost-effectiveness of conservation payments, regardless of their net benefits. Thus, conditional payments can be effective in ecological corridors that require coordination among farmers with differing land endowments.

Bio

Qambemeda Nyanghura is a PhD student at the Center for Development Research (ZEF), University of Bonn, Germany. Nyanghura obtained a BSc in Wildlife Management and later an MSc in Environmental and Natural Resource Economics from Sokoine University of Agriculture (SUA) in Tanzania. Nyanghura's PhD thesis is focused on the roles of incentive schemes and social values in the sustainable conservation of natural resources. He is interested in furthering his research career in the areas of environmental economics, including the application of framed field experiments in the ex-ante evaluation of environmental policies, the evaluation of conservation programs, and biodiversity management.

Natural Resources and Sustainability; Spar Cove Restoration: Maintaining Resilience by Expanding Socioecological Stakeholders

Kaleigh McIntosh

Dept. of Geography and Environmental, Carleton University, Ottawa, Ontario

Kaleigh McIntosh, Mike Brklacich & Peter Andree

Abstract

This paper explores inclusive water governance to support general long-term resilience projects by drawing on accumulated experiences of multiple stakeholders in Saint John NB's Spar Cove Restoration Project since its initiation in 2018 and continuing until 2023. It contributes to growing literatures on how collaborations can be part of envisioning the future of long-term socioecological resilience. It delves into how stakeholders employ an array of historic, cultural, and political perspectives to generate an expansive definition of socioecological resilience and examines how evolving formal and informal stakeholder relationships can facilitate or hinder long-term restoration projects. The paper factors in emerging socioecological challenges and opportunities over the 5-year period. It examines how comprehensive stakeholder engagement offers insight into resilience-building processes and opens prospects for re-envisioning goals for socioecological resilience policies and programs. This paper is a crucial analysis of inclusive water governance's role in strengthening the long-term resilience of communities and environment.

Bio

I am a Ph.D. candidate in the Department of Geography and Environmental Studies at Carleton University. My doctoral research explores how relationships across stakeholders in the governance of socioecological settings contribute to developing long-term resilience. My research focuses on governance actors of the Wolastoq Valley in New Brunswick, Canada to critically assess the historic and ongoing relationships of the water-related actors working in the watershed to understand their contribution to building and maintaining resilience. In doing so, I examine how inclusive and long-term collaborative governance relationships can contribute to the resilience of complex socioecological settings like the Wolastoq Valley.

Natural Resources and Sustainability; We protect what we love: What battles against corporate water bottling tell us about the struggle for sustainability

Robert Case

Social Development Studies, Renison University College, Waterloo, Ontario

Dani Lindamood, Water Watchers, Guelph, Ontario

Abstract

"Wherever big corporations show up to pump and bottle water, people oppose it. In this presentation, we will share findings from case studies of anti-water bottling activism in four communities in Canada and the US, and critically examine the relationship of activism to the broader goals of confronting wicked problems, building a sustainable future, and shifting the societal values that underlie these issues.

Intrinsic to these local conflicts, our investigations found, is a profound a sense of place and a deep appreciation of the environments that define it. Our study reveals the interconnections between social justice, sustainability, and action-taking, and suggest ways in which community engagement in environmental action can be strengthened. After sharing our results from these place-based yet ideologically-linked struggles for water protection, we will engage session participants in discussion of the potentialities of the call to protect what we love for the realization of a more sustainable future. "

Bio

Robert Case is an Associate Professor in Social Development Studies at Renison University College (affiliate with the University of Waterloo) and a long-time member and supported of the Water Watchers. Based in Wellington County, the epicentre of grassroots opposition to corporate water bottling in Ontario, Rob's academic interests in community organizing and social action have evolved alongside his direct involvement in water activism. In a current study, Rob is partnering with the Water Watchers to explore and draw insight from the strategies and dynamics of grassroots opposition to corporate water bottling in communities in different parts of the US and Canada.

Concurrent Session -CC7

Social and Environmental Equity and Sustainability

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Social and Environmental Equity and Sustainability; How Are Equity and Nature Framed through a Multispecies Justice Lens in Municipal Sustainability Plans?,

Icha Ravinderpal Kaur Koli

PhD Candidate

University of Toronto Scarborough, Department of Physical and Environmental Sciences

Ichha Ravinderpal Kaur Kohli, University of Toronto Scarborough, Department of Physical and Environmental Sciences, ichhakaur.kohli@mail.utoronto.ca

Abstract

The idea of the sustainable city is continuously gaining momentum with the United Nations establishing Sustainable Development Goal 11, which seeks to make cities inclusive and resilient. However, sustainability schemes often displace marginalized communities, and only account for curated versions of wild places, failing to make meaningful space for both vulnerable humans and nonhuman animals disproportionately facing the impacts of climate change, thus creating a gap in our understanding of how vulnerable populations can access the benefits of sustainability initiatives. This research aims to investigate how equity and nature are framed in municipal sustainability plans through a discourse analysis of the City of Toronto's TransformTO and Biodiversity Strategy policies based in a multispecies justice framework to evaluate whether such plans can create more inclusive and sustainable cities for both humans and nonhuman animals, and how to best integrate multispecies justice into urban governance planning processes of such plans.

Bio

Ichha is a PhD Candidate in the Department of Physical and Environmental Sciences at the University of Toronto Scarborough. Her research focuses on multispecies justice in urban governance in Toronto, as well as collaborative governance to ensure equity, diversity, and inclusion in local climate action in across Canada. Ichha has a particular interest in social justice and animal rights, and hopes for her research to open up pathways to mainstream these topics into conservation and sustainability discourse at both local and national scales.

Social and Environmental Equity and Sustainability; Environmental Inequity of Air Pollution in Hamilton, Canada

Elysia G. Fuller-Thomson

Geography and Planning, University of Toronto Mississauga

Elysia G. Fuller-Thomson¹ <elysia.fuller-thomson@utoronto.ca>, Jack Cheng¹ <jackjl.cheng@mail.utoronto.ca>, Jenny Siliang Cui¹ <jenny.cui@alum.utoronto.ca>, Amanda Norton¹ <amanda.norton@mail.utoronto.ca>, Scarlett Rakowska¹ <scarlett.rakowska@mail.utoronto.ca>, Sophie Roussy¹ <sophie.roussy@mail.utoronto.ca>, Simran Persaud¹ <simran.persaud@mail.utoronto.ca>, Sophie Roussy¹ <sophie.roussy@mail.utoronto.ca>, Priya Patel¹ <prp.patel@utoronto.ca>, Yanchuan Shao¹ <clausyc.shao@mail.utoronto.ca>, Kerstyn Lutz¹ <kerstyn.lutz@mail.utoronto.ca>, Sarah Faisal¹ <sarah.faisal@mail.utoronto.ca>, Charity Delos Reyes¹ <charity.delosreyes@mail.utoronto.ca>, Gabrielle Nicole Raine Olmedo¹ <gabrielle.olmedo@mail.utoronto.ca>, Matthew D. Adams¹ <md.adams@utoronto.ca> ¹Geography and Planning, University of Toronto Mississauga

Abstract

Environmental inequities in air quality have been studied extensively; however, most previous research has narrowed in on just one or two pollutants. With different modes of emissions and transport, intraurban pollutants need to be assessed as to whether pollutants vary distinctly in their urban distribution and in their corresponding inequitable exposure. Our research aimed to determine both the intraurban distribution of most criteria air pollutants and polycyclic aromatic hydrocarbons (PAHs) to determine a broader understanding of pollutant exposure inequity. Hamilton, Canada was selected to capture pollutant concentrations of nitric oxides (NO_x), nitrogen dioxide (NO₂), ground-level ozone (O₃), sulphur dioxide (SO₂) and PAHs. A pollutant surface was modelled for each pollutant, which was then assessed for correlations with socioeconomic inequality using the four metrics of the Ontario Marginalization Index. Indications from this study suggest that for a true picture of environmental justice in air quality, a multipollutant lens is needed.

Social and Environmental Equity and Sustainability; Geography of Volatile Organic Compounds in Hamilton, Ontario

Jack Cheng

Department of Geography, Geomatics and Environment

Jack Cheng, Department of Geography, Geomatics and Environment, University of Toronto Mississauga, jackjl.cheng@mail.utoronto.ca Matthew Adams, Department of Geography, Geomatics and Environment, University of Toronto Mississauga, md.adams@utoronto.ca Elysia Fuller-Thomson, Department of Geography, Geomatics and Environment, University of Toronto Mississauga, elysia.fullerthomson@utoronto.ca

Abstract

Poor air quality has been directly linked to adverse health outcomes and increased mortality. Air pollution from industrial sources can include benzene, toluene, ethylene and xylene, a subset of volatile organic compounds (VOC) commonly referred to as BTEX. The proposed research, done in collaboration with Health Canada and the City of Hamilton, aims to perform a geospatial analysis of BTEX concentrations measured through field and lab work and spatially correlate levels of BTEX with social vulnerability. 60 SKC stationary passive samplers were deployed in Hamilton, Ontario, to observe BTEX concentrations across the City of Hamilton. The passive samplers were analyzed in the lab using solvent extraction and quantified using a gas chromatograph mass spectrometer. A Land Use Regression specific to each component of BTEX was used to generate a continuous map surface. A geographically weighted regression was used to correlate BTEX-induced air pollution with socioeconomic, demographic, and health variables.

Bio

Currently pursuing an MSc in Geography with a specialization in Environment and Health Collaboration at the University of Toronto under the supervision of Dr. Matthew Adams, my research involves monitoring and modeling the spatial distribution of airborne Volatile Organic Compounds (VOCs) and their impact on human health. Specifically, I investigate the geographical correlations between VOC concentrations and vulnerable communities. Employing an interdisciplinary approach, my research integrates Geographic Information Systems, chemical laboratory techniques, and fieldwork to unravel the spatial complexities of air pollution. I am a recipient of the NSERC Canada Graduate Scholarship – Master's Program (CGS M).

Social and Environmental Equity and Sustainability; Equity-Based Energy Retrofits to Address Energy Poverty in Canada

Dr. Laura Tozer

Physical and Environmental Sciences, University of Toronto Scarborough

Guilherme Baggio, guillaume.baggio@mail.utoronto.ca

Abstract

Energy poverty and climate change are sustainability issues that can be addressed through residential energy retrofits. While energy efficiency and decarbonization retrofits are widely recognized as a crucial part of low-carbon energy transitions, they have been difficult to implement effectively. This paper furthers our understanding of how to accelerate the implementation of energy retrofits to address housing vulnerability. Accelerating implementation fairly requires an equity-based approach that links deep energy retrofits with energy poverty since energy poor households are more likely to have restricted abilities to participate in the transition to net zero. Based on policy analysis and expert interviews with program administrators of low-income energy retrofit programs in 7 provinces across Canada, we identify implementation challenges as well as opportunities and analyze the extent to which components of housing vulnerability are addressed through existing programs. Overall, we examine the implications for accelerating equity-based energy transitions.

Bio

Laura Tozer is an Assistant Professor in the Department of Physical and Environmental Sciences at the University of Toronto Scarborough. Laura directs the IMPACT Lab which is a community-based and policy-engaged research group focused on environmental politics and governance to address climate change. She is an interdisciplinary environmental social scientist drawing on the fields of geography, environmental science, political science, and environmental studies. She has researched the planning and implementation of just, zero carbon, and resilient transitions in cities; the politics of transnational urban climate governance; and justice in the transition to renewable energy.

Concurrent Session -CC8

Sustainability Accounting and Reporting

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Sustainability Accounting and Reporting; Sustainability Accounting: A bibliometric analysis to understand the state of research today

Sanobar Siddiqui

Faculty of Business Administration, University of Regina

Sanobar Siddiqui, University of Regina, sanobar.siddiqui@uregina.ca, Leanne Keddie, Carleton University, leannekeddie@cunet.carleton.ca

Abstract

Sustainability accounting is in demand as resources are depleted, and governments, individuals, and companies feel the importance of planning for the future. A bibliometric analysis is described in this paper to obtain a structural overview of academic work in sustainable accounting practices. A keyword search using the terms "financial account*," "managerial account*," "environmental management*," "audit," "assurance," "tax*," and "sustainability account*" is performed, yielding 4,445 individual articles published between 1965 and 2002, with a collection of 65,030 references. Through co-citation analysis, and bibliographic coupling, we draw insights into the most common or influential documents, authors, and journals in sustainability accounting. Results are presented in table and visual formats. The bibliometric analysis of existing work in sustainability accounting provides a valuable and seminal reference for researchers and practitioners alike

Bio

Dr. Sanobar Siddiqui joined the Hill and Levene School of Business as an Assistant Professor in Accounting (Tenure Track) at the University of Regina in 2021.

Sanobar completed her EdD in Leadership from the University of Calgary in 2019 and Certified Management Accountant from the IMA (U.S.A) in 2021. She has taught at the University of Toronto, the University of Calgary, Saudi Arabia and Indian universities. Her primary research interests include sustainability accounting. She also has published work in accounting education research and the scholarship of teaching and learning within the qualitative research paradigm.

Sustainability Accounting and Reporting; The Importance and Relevance of Business Sustainability Worldwide: Its Education, Practice and Research Implications

Zabihollah Rezaee

Thompson-Hill Chair of Excellence and Professor of Accounting
The University of Memphis

Abstract

Business sustainability has advanced in the past decades from branding and green-washing to strategic imperative with its integration into corporate culture, business models, corporate governance, and managerial decisions. Business sustainability focuses on financial activities that generate long-term economic sustainability performance (ESP) to create shareholder value as well as non-financial activities that result in the achievement of environmental, social, and governance (ESG) sustainability performance to protect interests of all stakeholders. Global public companies today face the challenges of adapting proper sustainability strategies and practices to effectively respond to social, ethical, environmental, and governance issues while creating sustainable financial performance and value for their shareholders. This paper examines the emergence of business sustainability and its education, practice and research implications.

Bio

Zabihollah Rezaee is the Thompson-Hill Chair of Excellence and Professor of Accountancy at the University of Memphis and has served a two-year term on the Standing Advisory Group of the Public Company Accounting Oversight Board (PCAOB). Dr. Rezaee holds ten certifications including Certified Public Accountant (CPA). He is currently the editor of the Journal of Forensic Accounting Research (JFAR) and serving on the Hong Kong Accounting and Financial Reporting Council Panel. Professor Rezaee has published over 270 articles and made more than 300 presentations, written 14 books, and served as expert witness.

Concurrent Session -CC9

Opportunities and Challenges Lessons from Transdisciplinary Teaching in Law and Sustainability

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Opportunities and Challenges Lessons from Transdisciplinary Teaching in Law and Sustainability; Law, Science and the Regulatory State

Martin Olszynski

University of Calgary, Faculty of Law

Abstract

This past winter term, Martin prepared and delivered a new seminar course entitled "Law, Science and the Regulatory State." Offered through the Faculty of Law but open to graduate students outside of law, the course was intended to bridge the theory and practice of integrating science into law and policy, using environmental law as the primary case study. Students learned about the opportunities and challenges for integrating science into law, from development and drafting by the legislative branch, to implementation by the executive branch, and finally enforcement and adjudication by the judicial branch. Martin will share his experience teaching this course for the first time, and the unexpected discoveries that he and his students made along the way.

Opportunities and Challenges Lessons from Transdisciplinary Teaching in Law and Sustainability; The Two Cultures, Redux: Teaching the Politics of Corporate versus Independent Science in the Global Regulation of Glyphosate-based Pesticides.

Jason MacLean

University of Saskatchewan, School of Environment and Sustainability

Abstract

Jason teaches both law students as well as students in a graduate interdisciplinary sustainability science and management program. Over the past two years, he has incorporated one of his principal areas of research into his teaching: the contested regulation of glyphosate-based pesticides (e.g., Bayer/Monsanto's Roundup products). One of the most controversial issues in the global regulation of glyphosate is relative weight of evidence assigned to manufacturer-sponsored scientific studies of glyphosate versus independent, publicly available, and peer reviewed studies. In this session Jason will reflect on the benefits of teaching this particular regulatory issue to law students and science students, and the particular challenges associated with each.

Concurrent Session -CD1

Interrogating the Linkages Between Economic Growth, Development, and Sustainability

Day 3 | October 13, 2023 | 10:45am

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Interrogating the Linkages Between Economic Growth, Development, and Sustainability; Is Air Pollution Benefits Equitably in Peel Region for City-Owned Street Trees?

Jenny Siliang Cui

Department of Geography Geomatics and Environment, UTM

Jenny Siliang Cui (jenny.cui@mail.utoronto.ca) Matthew Adams (md.adams@utoronto.ca)

Abstract

Many studies focused on the health consequences of air pollution. Dry deposition, a technique that transports particulates to plant surfaces, enables urban trees to remove PM2.5. Previous studies have assessed PM2.5 deposition across cities; nevertheless, the compositions and properties of street tree coverings vary greatly within cities. There is still a dearth of research into PM2.5 reduction by city-owned street trees within a city. Our research intends to fill this gap by evaluating societal disparities of PM2.5 deposition and the net benefits of PM2.5 reduction by city-owned street trees in Mississauga, Canada. Our study's findings will provide compelling reasons for urban planners to construct urban green spaces to improve human health.

Interrogating the Linkages Between Economic Growth, Development, and Sustainability; Sustainability Transition to Low-carbon, Universal Theorization and Regional Practice

Alireza Ohadi

University of Waterloo

Abstract

"This review paper examines a number of factors that impact energy transitions from a petroleum dominated energy-mix to lower-carbon universally, and for the case of hydrocarbon resourceful countries comparatively. The article commences with a discussion on energy governance methods. It then continues with timing as the second factor. The third stage embraces alternative technologies and the geopolitics entailed. Lastly, the political economy of transition is the fourth parameter of the study.

Distinguishing between state governments based on their development status and need for oil import versus ability to export, we explore various mechanisms that each administration type can exert in response to energy transition under the four mentioned factors. The instruments are not equally applicable as panacea, rather, need to be specified according to natures of locality in host regions. We conclude our scrutiny on having the mechanisms researched in the case of Iran as a fossil-fuel exporting developing country.

"

Interrogating the Linkages Between Economic Growth, Development, and Sustainability; Examining human activities as an indicator of sustainable development within a zero-growth economy

Jane A. Davis

Department of Occupational Science and Occupational Therapy

Abstract

Sustainable development aims to ensure access to life opportunities and resources to fulfill human need for everyday activities without exceeding the ecological ceiling. Currently, gross domestic product (GDP) is the most used indicator of sustainable development. However, using the GDP (a measure of economic growth) is not compatible with sustainable development. Raworth's Doughnut Model re-envision's economic performance as thriving when social foundations are met within the ecological ceiling. Human activities are implicitly conceptualized in this Model, linking its ecological, social, and economical pillars, and can indicate possible ecological overshoots (extensive activity repertoires) and social shortfalls (constrained activity repertoires) within communities and societies. Changes are needed in the form and elements of human activities that compose our daily lives to ensure safe and equitable engagement within a thriving, zero-growth economy. This paper argues that activity repertoires are a superior indicator of social, environmental, and economic progress toward the sustainable development goals.

Bio

Jane Davis is a registered occupational therapist and Assistant Professor, Teaching Stream in the Department of Occupational Science and Occupational Therapy at the University of Toronto. Much of Jane's research pertains to people's experiences of "occupation" or meaningful daily activity. Her exploration into sustainability began with the supervision of two MScOT student research projects exploring occupational therapists' knowledge of sustainability and its application within practice and the profession. Her current focus is on understanding the complexities of occupation in relation to sustainability.

Concurrent Session -CD2

Eco-(h)ope: Pathways to Enlightening Sustainability

Day 3 | October 13, 2023 | 10:45am

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**Eco-(h)ope: Pathways to Enlightening
Sustainability: Strings of Hope: Classical
Music and the Sounds of Ecological
Empathy**
Carol Gimbel

Strings of Hope: Classical Music and the Sounds of Ecological Empathy

**Eco-(h)ope: Pathways to Enlightening
Sustainability: Strings of Hope: Classical
Music and the Sounds of Ecological
Empathy**

Stephen Scharper

Strings of Hope: Classical Music and the Sounds of Ecological Empathy

Eco-(h)ope: Pathways to Enlightening Sustainability; "The Eyes Have It": Facial Artistry and the Discernment of Climate Hope

Genevieve
Crispin-Frei

University of Toronto

Abstract

In dialogue with the layered visions of nature in Akira Kurosawa's "The Peach Orchard" (Dreams [199?]), Genevieve Crispin-Frei uses the artistry of facial colouration and design to illustrate expressions of hope and despair in a time of climate chaos.

Concurrent Session -CD3

Environmental Justice and Sustainability

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Environmental Justice and Sustainability; The Intersection of Migration Patterns and Exposure Risk: Air Pollution and Environmental Justice in the Peel Region Over Time

Amanda E. Norton

PhD Candidate

University of Toronto, Dept of Geography and Planning

Amanda Norton, Matthew D. Adams, Associate Professor, Dept. of Geography, Geomatics, and Environment, University of Toronto Mississauga md.adams@utoronto.ca

Abstract

Air pollution exposure may disproportionately impact specific marginalized groups in the Peel Region. Initial findings indicate that while those with higher marginalization measures (measured via ON-Marg) have consistently slightly higher annual NO₂ exposure they may not have the opportunity to choose to live in areas with clean air. This analysis will examine if this pattern persists over 7 Canadian Census Years (1986-2016). This study aims to identify if when people migrate within the Peel region – they move outside of polluted areas. In addition, this study will explore if the same marginalized groups have been consistently exposed over time, or if the most marginalized groups change over time. This research will provide insights for policymakers on which communities may need NO₂ interventions as well as if past interventions and policies aided in reduction of annual NO₂ concentrations.

Environmental Justice and Sustainability; Perceptions of climate justice signposts in Waterloo region: A mixed methods qualitative study

Kai Reimer-Watts

PhD candidate, Community Psychology
Department of Psychology, Wilfrid Laurier University

Abstract

To address the escalating climate crisis and move towards more sustainable economies, a society-wide response is needed guided by principles of equity, care, solidarity, and justice ('climate justice') (Klein, 2019; Perkins, 2020). Yet what is meant by 'climate justice' (CJ) varies across contexts, and the effects and diverse understandings of this language on particular audiences is still not well-understood (Fine & Love-Nichols, 2021). A qualitative research study, now underway, aims to address these gaps. This empirical community-based study partners with multi-faith grassroots collective 'Faith Climate Justice Waterloo Region' (FCJWR) based in Waterloo region, Ontario, which supports local faith-based CJ leadership. Recently, FCJWR members co-created a visual climate justice banner installed by faith communities on 22 places of worship throughout Waterloo region and beyond (see www.faithclimatejustice.ca/banners.html). This study investigates understanding of, engagement with and possible effects of these emergent local CJ symbols, increasing understanding of CJ communication in a public context.

Bio

Kai Reimer-Watts is a current PhD candidate in Community Psychology at Wilfrid Laurier University; holds a Master of Climate Change; and is director of the documentary for climate action *Beyond Crisis*, "a story of hope for a rapidly changing world". Kai's research and creative work explores the rich intersections of climate storytelling, the arts and community activism, centering on the powerful role of 'signposts' in unifying and mobilizing collective responses to the climate crisis. Kai's current research explores the role of community created 'signposts' in climate communications and in creating shared meanings and identities within social movements for climate justice.

Environmental Justice and Sustainability; Tradeoffs between optimal and spatially equitable bicycle infrastructure placement in Toronto

Madeleine Bonsa-Fisher

University of Toronto Data Sciences Institute

*Madeleine Bonsma-Fisher, Bo Lin (Mechanical and Industrial Engineering, University of Toronto),
Timothy C. Y. Chan (Mechanical and Industrial Engineering, University of Toronto), Shoshanna Saxe
(Civil & Mineral Engineering, University of Toronto)*

Abstract

Cycling is affordable, healthy, and sustainable, but access to destinations on low-stress (a proxy for safe) cycling routes in cities like Toronto is both limited and unevenly distributed. When proposed infrastructure locations are optimized to provide the highest average access to opportunities, marginalized groups and locations may be further left behind since the greatest gains to network connectivity come from expansions in already-dense network areas. We develop an optimization model to identify road segments in Toronto where new cycling infrastructure will provide the largest increase in access to opportunities. We find that optimizing accessibility in pre-amalgamation regions instead of city-wide leads to an infrastructure plan that is more spatially distributed with more regions meeting a low minimum threshold of accessibility but with lower average accessibility gains, indicating the presence of an equity-efficiency tradeoff. We also find that infrastructure projects that maximize a region's accessibility to destinations are often located outside that region, challenging political perceptions of infrastructure benefits.

Bio

Madeleine Bonsma-Fisher studies how safe cycling networks influence the equitability of destinations people can access by bicycle in Canadian cities. She completed her MSc and PhD in biophysics at the University of Toronto and holds a bachelor's degree in Honours Co-operative Physics from the University of Waterloo. She is a co-founder of UofT Coders, a group for graduate students to teach each other programming skills in a supportive peer environment. Madeleine is a volunteer and board member with the advocacy group Bike Ottawa, and you can find her riding around Toronto on her beloved cargo bike.

Environmental Justice and Sustainability; Understanding and Addressing Eco- Anxiety Among Youth: Insights from a Scoping Review and Community Psychology Perspective

Jennifer Dobbai

PhD Community Psychology Student

Wilfrid Laurier University/ Viessmann Centre for Engagement and Research in Sustainability (VERiS)

Abstract

Climate change has given rise to a range of psychological responses among individuals, including a growing concern known as eco-anxiety. To better understand and address eco-anxiety, this presentation highlights the findings of a scoping review study. The study sought to identify the theoretical frameworks and models used to explain and treat eco-anxiety among young people. Additionally, it explored the potential insights offered by a community psychology lens, recognizing the influence of social systems and power dynamics. The results contribute new knowledge from a community psychology and social justice perspective, in particular understanding why climate change is distressing through different theoretical frameworks and how this understanding can inform community mental health practices and policy. With these new ways of understanding, strategies and interventions can be developed to navigate the complexities of eco-anxiety and foster transformative systems change for the well-being of individuals, communities, and the planet.

Bio

Jennifer Dobbai is a Ph.D. student in Community Psychology at Wilfrid Laurier University and a research assistant for the Viessman Centre for Engagement and Research in Sustainability (VERiS). Her research looks at the intersections of sustainability and climate change, psychology, and social justice in the context of local climate action planning and city-wide planning. More recently, her research has focused on how eco-anxiety manifests within youth, the supports available, and generally youth's mental health in relation to the climate crisis.

Concurrent Session -CD4

Market Economies and Sustainability

Day 3 | October 13, 2023 | 10:45am

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Market Economies and Sustainability; On the spontaneous circularity of market economies. A historical re-assessment

Pierre Desrochers

Associate Professor
UTM-Geography, Geomatics and Environment

Abstract

The concept of a “circular economy” (CE) has been heavily promoted by organizations such as the World Economic Forum, the Organization for Economic Co-Operation and Development, the World Trade Organization, the United Nations Environment Programme, BlackRock Global Funds, the European Commission and the Chinese Communist Party. The CE is described as a break with the polluting “take, make, waste” traditional market economy model. In contrast, it aims to maximize the utility of scarce resources by constantly re-using and regenerating them in a cyclical pattern, manufacturing more durable products and benefitting from the potential offered by the sharing and services economy. Much historical evidence, however, suggests that the CE describes a widespread and spontaneous phenomenon as ancient as market economies. My presentation will survey this material and suggest a complete reassessment of the key foundation of the CE discourse.

Bio

Pierre Desrochers is Associate Professor in the Department of Geography, Geomatics and Environment at the University of Toronto Mississauga. His main research interests focus primarily on economic development, technological innovation, business-environment interface, energy policy and food policy. His personal website is at <https://geog.utm.utoronto.ca/desrochers/>

Market Economies and Sustainability; Understanding the Approaches taken by Private Ski Clubs in Southern Ontario to Address Climate Change

Jarid Palter

MScSM University of Toronto Mississauga

Abstract

Understanding the Approaches taken by Private Ski Clubs in Southern Ontario to Address Climate Change

Bio

Jarid is a MScSM class of 2022 graduate, and a lifelong skier. While in the program he wanted his research to focus on a topic of interest to him. Fortunately for him he came across the opportunity to research the approaches taken by private ski clubs in Southern Ontario to address climate change and sustainability. He jumped at this opportunity and recently with the help of Professor Brett Caraway they were able to have the paper published in the Journal of Outdoor Recreation and Tourism.

Market Economies and Sustainability; The Heterogeneity Revolution in a Greening World: How Behavioral Biases Moderate People's Response to Green Message Construal under Risky and Riskless Decisions

Ghina ElHaffar

McGill University

Ghina ElHaffar, Fabien Durif, Dilip Soman & Laurette Dubé

Abstract

"Acknowledging heterogeneity in individuals' subjective models, biases, and responsiveness to optimize behavioral change interventions is crucial for reaching the full potential of behavioral science in transforming the world for the better.

In sustainable consumption, this need becomes more urgent due to substantial variations in green values, behaviors, and biases. Recognizing and accounting for this steep heterogeneity is paramount.

We conduct the present research to explore the heterogeneity hypothesis in riskless (personal care products) and risky (investment) choices in sustainable choice contexts as we conduct experiments to test attitudes, biases, and responsiveness to different construal (abstract vs. concrete) levels of green messages.

Preliminary findings indicate that leveraging green behavioral biases provides a solid basis for effectively segmenting consumers and anticipating their reactions to various communication approaches. By harnessing these insights, we can enhance the precision and efficacy of behavioral change interventions in promoting sustainable consumption and accelerating the ecological transition. "

Bio

Ghina El Haffar is a postdoctoral researcher at McGill University. Her work focuses on sustainable consumption choices from a behavioral change perspective, specifically, her research addresses behavioral biases and behavioral interventions to accelerate individuals' transition towards sustainability. Through her many collaborations, Ghina helps organizations design better customer experiences and build more authentic communication strategies around sustainable products and services.

Ghina is a published academic author and has been active in disseminating knowledge on the psychology of eco-friendly living through her website, blog and social media outlets (Ecofriendly Choices/ Choix Écolo).

Concurrent Session -CD5

Net-Zero and Decarbonization Strategies

Day 3 | October 13, 2023 | 10:45am

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Net-Zero and Decarbonization Strategies; Examination of the Embodied Carbon (EC) Reduction Potential of Concrete Materials – Case Study Golnaz Mohebbi

University of West London

Abstract

As one of the main building materials used in construction, it is imperative to examine and consider the EC saving potential of concrete materials. This study examined the EC reduction potential dependent on the cementitious content and aggregate mix of concrete materials. Examining three building designs, following the same floor plan and three structural and external wall variations. The first and second comprising of a steel structural frame with composite panel and poroton block external walls respectively. And the third a glulam timber structural frame, precast concrete columns, and precast concrete external walls. The EC of these designs are calculated with the assumption of 100% CEM 1 cementitious content for the concrete materials. Matching the RC strengths, the CEM 1 is replaced with nine alternate aggregate mixes, with values of 14%-70%. The results of these calculations showing a reduction of 1.37%-14.89% of the total EC. Presenting an approximate carbon reduction potential of 10 tonnes in a single building construction, and over 100 tonnes in a concrete heavy structure.

Bio

PhD researcher at the University of West London, focusing on environmentally-adaptive efficient design. Previously attended a BSc in Architecture, and an MSc in Environmental Design from the University of Bath. Currently carrying out research pertaining to embodied carbon reduction, WLC, LCA's, and LCC's.

Net-Zero and Decarbonization Strategies; A Climate Lens Approach to Decarbonizing Operations of Ontario Municipalities: Current State and Future Direction

Mohammed Abdulai

Trent University, School of Business

1. Mohammed Abdulai, Trent University, School of Business, mohammedabduai@trentu.ca 2. Asaf Zohar, Trent University, School of Business, azohar@trentu.ca

Abstract

This study adopted a qualitative research approach to explore the current state of the deployment of climate lens assessment frameworks in decarbonizing the operations of Canadian municipalities. The findings revealed similar but unique approaches to assessing the climate impacts of municipal projects, programs and services, including the design and utilization of carbon calculators, and requirements for public reporting. Effective stakeholder engagement emerged as the overarching theme influencing the successful operationalization of climate initiatives at the local level. Given that greater public accountability and transparency are strongly linked to verifiable quantitative metrics, the municipalities are exploring a holistic approach to complement their existing qualitative assessment processes with extensive quantitative data generated through carbon budgeting. This raises further questions on the critical role accountants can play in re-designing the climate impact assessment and measurement landscape whilst providing the expertise relevant to the new organizational needs of leveraging carbon budgets as a valuable tool to mitigating GHG emissions in any future iterations of climate impact assessment.

Bio

A PhD student and a course instructor at the Trent University School of Business in Peterborough, Ontario. I have a research interest in Corporate Sustainability Reporting and Climate Impact Assessment with a special focus on conducting relevant action-oriented research capable of extending existing knowledge on how local governments and communities could effectively build capacity against the adverse impacts of climate change.

Net-Zero and Decarbonization Strategies ; Net-zero futures for cities: Future orientation and climate actions from a Canadian perspective

Ying Zhou

University of Waterloo, School of Environment, Enterprise and Development

Amelia Clarke, University of Waterloo, School of Environment, Enterprise and Development,
amelia.clarke@uwaterloo.ca

Abstract

Climate change is an urgent global challenge that demands transformative changes at a global and local scale. To achieve net-zero emissions by 2050, local governments, including those in Canada, are beginning to adopt science-based target approaches. This paper employs a comparative case analysis to evaluate how this future-oriented approach impacts the development of forward-looking climate actions in Canada. Specifically, the paper examines the role of temporalities and ecological limits between local governments with short-term and long-term orientation approaches to tackle future challenges related to climate change. The cases analyzed in the study were chosen from Canadian cities that participated in the Transition 2050 program, which was funded by the Federation of Canadian Municipalities to assist Canadian municipalities in achieving net-zero emissions by 2050. The paper seeks to offer insights into the effectiveness of a future-oriented approach in addressing major challenges and overcoming obstacles to effective action.

Concurrent Session -CD6

Multiple Perspectives on Sustainability

Day 3 | October 13, 2023 | 10:45am

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Multiple Perspectives on Sustainability; A Critical Examination of the Importance of Women's Leadership for Sustainability Action with Recommendations for Practice

Emily Dobrich

PhD Candidate
Ontario Institute for Studies in Education/University of Toronto

Abstract

"Gender inequality persistently renders women and girls more vulnerable to the negative impacts of climate change. In response, the Glasgow Women's Leadership Statement from COP 26 issued calls for global change to increase women's participation in policy and decision-making at all levels of society. Women's leadership is needed to produce effective and equitable results in climate action and sustainability initiatives. How can women's voices, their needs and their perspectives be elevated in sustainability and climate action projects and agendas?"

Taking an intersectional and eco-feminist approach, this paper examines the importance of women's leadership for sustainability action. It will make recommendations for practice to encourage gender equity in sustainability action focused on strengthening women's sustainability leadership potential through education and social change. This research contributes to advancing SDG 4 (Quality Education) and SDG 5 (Gender Equality) with transdisciplinary relevance for feminist scholars, activists, educators, and community practitioners."

Bio

Emily Dobrich is a Ph.D. Candidate in Adult Education and Community Development at the Ontario Institute for Studies in Education at the University of Toronto. Her research interests include embodied learning, transformative education, social justice, relationality, decolonization, and sustainability. In 2022, Emily received a Congress Graduate Merit Award from the Federation for the Humanities and Social Sciences for her research into the role of women in transitioning towards more just and sustainable food systems. She is also the recipient of the 2023 Alan Thomas Graduate Student Paper Award from the Canadian Association for the Study of Adult Education.

Multiple Perspectives on Sustainability; The Role of Migrants in International Knowledge Transfer

Daniel Gulanowski

Assistant Professor
Carleton University, Sprott School of Business

Daniel Gulanowski, Carleton University, daniel.gulanowski@carleton.ca; Vivi (Hui) Zhang, Carleton University, huizhang3@cmail.carleton.ca

Abstract

Global migrants are recognized as high-potential employees who can contribute to organizations' and nations' international competitiveness due to increased access to higher education, innovative ideas, and social networks. Despite these individuals' potential role in acquiring, retaining, and transferring knowledge across borders, the extent to which they facilitate international knowledge transfer is underexplored. Based on a narrative review of 36 journal articles published between 2007 and 2022, we provide new insights into the role of migrants in facilitating international knowledge transfer. Our preliminary findings recognize the positive impacts of migrants on their home and host countries while identifying various contextual factors influencing the effectiveness of knowledge transfer across borders, such as national policies, organizational practices, and individual characteristics. The study highlights the importance of considering multilevel stakeholders' perspectives, integrating both collective (e.g., firms, country) and increasingly more critical individual-level analysis in understanding the process of international knowledge transfer.

Bio

Daniel Gulanowski is an Assistant Professor specializing in International Business at Ottawa's Carleton University within the Sprott School of Business. His instructional background spans both graduate and undergraduate levels, with an emphasis on international business and international management courses. Dr. Gulanowski's research centers on several key areas, including newcomers' integration into the labour market, computer-mediated communication, effective management pedagogy, and internationalization processes. His academic contributions have been featured in the *International Journal of Intercultural Relations*, *Human Relations*, *Review of International Business and Strategy*, and *Journal of International Technology and Information Management*.

Concurrent Session -CD7

Sustainability

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A stylized, light green globe is positioned at the bottom of the page, showing the continents of North and South America. The globe is semi-transparent and serves as a background for the lower portion of the slide.

Sustainability; Climate Change, Water Security and Conflict Potentials in South Africa: Assessing Conflict and Coping Strategies

Hosea Patrick

Department of Geography, Geomatic, and Environment, University of Toronto

Abstract

The peculiarity of South Africa to vulnerability to climate change, especially water scarcity, is an issue of political and economic concern. The study assessed the security implications triggered by the impact of climate change on the water security of rural communities in the uMkhanyakude District Municipality, KwaZulu-Natal. It focused on the extent to which this might trigger conflict as a coping mechanism to inform policy options. Using a mixed method to source data, the study showed that the continuous variation in climate patterns has adverse effects in the study area. The vulnerability of rural communities in South Africa to these realities, especially water, is intensified by its weak coping capacity and overdependence on climate-sensitive resources. This is further intensified by government post-resilience instead of pre-emptive pre-resilience strategies. Given this, the study indicated that the propensity for conflict to intensify due to the resultant climate-induced water shortages continues to rise steadily as rural communities channel their frustrations over the negligence of their immediate water needs.

Bio

Dr. Hosea Patrick is a transdisciplinary researcher and postdoctoral fellow at the Department of Geography, Geomatics, and Environment, University of Toronto, Mississauga. Hosea has a Ph.D. in Political Science with a specialization in environmental politics from the University of KwaZulu-Natal, South Africa. His research focuses centrally on the United Nations' sustainable development goals application and implications in the areas of climate change (SDG 13), human security and food (SDG 2 and 6), as well as social and environmental justice (SDG 16). He also works on public policy, decolonization, and academic exclusion research areas.

Sustainability; A blueprint for sustainable small-scale mining in sub-Saharan Africa

Gavin Hilson

Surrey Business School, University of Surrey, United Kingdom

Sustainability; Formalizing Small-Scale Mining in Sub-Saharan Africa: A Route for Empowering Women?

Cynthia Kumah

Carleton University

Abstract

This presentation builds a case for supporting women engaged in artisanal and small-scale mining (ASM) – low-tech, labour-intensive mineral extraction and processing – in rural sub-Saharan Africa. It does so by drawing attention to how, despite occurring mostly in the region’s informal economy, ASM activities provide millions of otherwise-jobless women with a much-needed source of income. Drawing on findings gathered over a one-year period in Ghana, the location of one of the largest ASM sectors in sub-Saharan Africa, the presentation captures how, with this income, women are able to purchase food for their households; pay for children’s school fees and cover healthcare for their families; invest in other trades and arm themselves with more life skills; and perhaps most importantly, gain fiscal autonomy from men. Many of these benefits, and more broadly, the way in which ASM empowers women in sub-Saharan Africa, however, go unrealized because of the sector’s predominantly informal sector existence. The presentation calls on the Government of Ghana to absorb women’s ASM activities within its ongoing program of formalization, specifically, the Community Mining Scheme (CMS), which has been launched in several districts in the country, ringfences territory for miners can work, with the protection of a license, and access crucial support services. The CMS illuminates the roles a supported ASM sector could play in empowering the lives of hundreds of thousands of women in rural sub-Saharan Africa.

Bio

Cynthia Kumah is a doctoral student in the Department of Sociology and Anthropology at Carleton University. She holds an MA in Development Management and a BA in Human Resource Management. Cynthia is also the founder and director of the NGO, C-Trust Foundation, which focuses on environmental, social advocacy, and human rights activities, particularly in women's empowerment, protecting women and girls' rights, societal development, community improvement, and citizen participation.

Throughout her career, Cynthia has been involved in various research projects, including studying small-scale gold mining in Ghana, raising awareness about the use of mercury in gold production, and re-evaluating the Minamata Convention in Africa. She has collaborated with renowned professors from the University of Surrey (UK), University of Mines and Technology (Ghana), and the University of Bath.

In addition to her academic pursuits, Cynthia serves as a volunteering officer for the Ghanaian NGO, Women in Mining Ghana. This organization aims to change perceptions, transform lives, and enhance opportunities for women in the mining sector in Ghana.

Cynthia is passionate about socializing, networking, community engagement, and volunteer work. She resonates with Malcolm Gladwell's famous quote: 'If you work hard enough and assert yourself, and use your mind and imagination, you can shape the world to your desires.'

Workshop Session -W6

Tech4All - How to Refurbish Computers through Community Empowerment

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Tech4All - How to Refurbish Computers through Community Empowerment

Alison Canning

Let's Get Together

Abstract

Computers have become an essential tool for individuals to contribute, connect and thrive professionally, personally, and academically. The increase demand and advancement in technology creates a significant e-waste problem across the world. This youth-led session will begin with an open discussion of the impact of e-waste on a local and global scale. It will be followed by a hands-on learning session on the internal components of a computer so that participants can then refurbish a used computer and test it through our easy-to-follow process. The session will end with participants making a pledge to protect our planet while helping others.

Bio

Ali Canning is the visionary Founder and Executive Director of Let's Get Together, a non-profit committed to leveling the educational playing field. Leading the Tech4All initiative, Ali, along with her peers and many volunteers, strive to provide every Canadian in need with a computer to own by 2026. As a dedicated mother, community champion, and tech enthusiast, Ali sees post-secondary students as catalysts for healthier, more equitable communities and a sustainable future. Her mantra, "Every hand counts. No hand is too small," drives her mission. With a rich background from working at the Miles Nadal Jewish Community Centre, University of Toronto, and Habitat for Humanity Halton-Mississauga, Ali brings a wealth of experience to her transformative work.



END NOTES

Thank you for attending the 2023 Sustainability: Theory, Practice, and Action (STTPA) Conference. We can't wait to welcome you back in 2025!