

The 15th Annual EnSciMan PhD Symposium

Empowering Tomorrow: Building Climate Resilience with Generation Green



Friday May 3, 2024 – 11:00 AM to 4:00 PM

Centre for Urban Innovation (2nd Floor) - CUI Atrium and CUI 219

44 Gerrard Street East

Symposium Overview

From wildfires, droughts, extreme flooding, scorching heat, and pollution, there is no doubt that the climate crisis is the biggest challenge faced by humankind. Climate change and government inaction are exacerbating hopelessness and distress in youth all around the world. This year's symposium seeks to answer one looming question: *How can we collaboratively work to ensure all voices are contributing towards creating a green tomorrow?* The discussions led by our guest speakers are designed to help and inform individuals across research, industry, and government on how they can support youth to channel their feelings of grief, despair, and hopelessness into purposeful climate action, hence paving a path towards resilience.

To lead and generate insightful and motivational conversations, we have brought together scholars from universities, community-led organizations, and corporations - all experts in their respective fields. Their talks will be focused on bridging diverse experiences in climate research and policy and making space for youth from all backgrounds to become active participants in tackling the climate crisis.

Our keynote is hosted by Dr. Imogen Coe and will include conversations of why science requires all voices at the table, what successful partnership looks like, and how we can ensure youth from all walks of life are able to find their place in STEM. The first speaker session will include the significance of Indigenous and non-Indigenous lived experiences coming together to facilitate climate action. The second speaker session showcases how we can engage youth, who often feel like they do not have a place at the table, to consider where they can fit and move forward on climate action solutions collectively. The event will include a poster session from Urban Water TMU students and TMU broadly, spanning disciplines in science, engineering, geography, public health, immigrant and settlement studies, and food security. Let's embark on this journey together to exchange innovative ideas, build strong relationships, and find meaningful ways to work towards climate action at all levels of education!

Program Schedule

Session/Activity	Time
Welcome and Registration	11:00 AM - 11:30
Coffee and Snacks	11:30 AM - 12:00 PM
Session 1: Opening Remarks by Bryant Serre	12:00 – 12:05
Keynote Address	Dr. Imogen Coe , Professor, TMU: 12:05 – 12:30
Session 2: Harnessing Curiosity: The Power of Indigenous Knowledge in Facilitating Climate Action	Jess Ilan Wainer , CEO, Rainforest Reliance: 12:35 – 12:55 Brooke Filsinger , PhD Candidate, EnSciMan, TMU: 1:00 – 1:20
Session 3: Lunch Break and Poster Talks	1:20 – 2:05
Session 4: Empowering Future Leaders: Transforming Climate Anxiety into Climate Courage, Resilience and Action	Dr. Smita Dhakal , Research Associate, UHN: 2:10 – 2:30 Susan Debreceni , Program Lead, University of Toronto Trash Team: 2:35 – 2:55
Session 5: Closing Remarks by Bryant Serre	3:00 – 3:05
Session 6: Coffee, Lab tours, and Wrap-up	3:10 – 4:00

Session Overview

Welcome

Opening Remarks: Bryant Serre will welcome attendees to the 15th Annual Environmental Applied Science and Management (EnSciman) PhD Symposium. This year's symposium seeks to answer one looming question: *How can we work collaboratively to ensure all voices are contributing towards creating a green tomorrow?* Our goal is to encourage and empower youth and individuals from all walks of life to learn and actively participate in climate action that is transformative and community-driven.

Keynote Address by Dr. Imogen Coe, Scientist, founding dean, Faculty of Science (2012-2018) Toronto Metropolitan University

Dr. Coe has worked extensively as an academic scientist and administrator, challenging stereotypes and breaking barriers for girls and women in her field. Her talk will address and reflect upon the lack of female representation in STEM; science, technology, engineering and math. Dr. Coe encourages women (and their allies) to break barriers, challenge stereotypes and demand their opportunity to contribute to science.

Session 2: Harnessing Curiosity: The Power of Indigenous Knowledge in Facilitating Climate Action

What can we learn from diverse voices and creative ways to foresee an equitable future for everyone on this planet? In this session, Jess Wainer, CEO of Rainforest Reliance, will address the need to put a stop to deforestation by empowering local, rural Indigenous communities by way of job creation based on regenerative agriculture and renewables and building an independent sustainable ecological indigenous society through restoration, conservation and preservation.

Rainforest Reliance is a non-profit organization that strives to incorporate a long-term sustainability strategy that focuses not only on tree planting and land restoration but also takes into consideration all aspects of biodiversity, conservation and preservation, simultaneously addressing the UN's 17 SDGs. Although the organization is largely focused on the climate crisis encompassing regenerative landscape restoration through

planting trees, they also focus on creating an equilibrium between nature and humans whilst protecting both from mass extinction.

As a young organization with over ten-years operating in the Mesoamerican Biological corridor working with local and Indigenous people, focused on correcting the mistakes of past generations by developing and enforcing novel and innovative practical sustainable solutions that have proven to work. They have successfully showcased that they are more than capable and up to the task based on their proven track record and continued efforts in protecting the second largest rainforest in the Western Hemisphere, after the Amazon.

As a PhD candidate at TMU's EnSciMan program, Brooke Filsinger's research focuses on the inclusion of Indigenous pedagogies and research methodologies in STEM, privileging the Indigenous student experience. Her talk will be centered around inclusion practices for researchers. Brooke's first-hand experience as a Haudenosaunee Indigenous student and learnings from prior decolonization efforts are invaluable to the faculty's efforts in reconciliation and knowledge sharing with Indigenous communities.

Session 3: Lunch Break and Poster Talks

Join this informal breakout session during the lunch break in witnessing a fun poster session from Urban Water TMU students and TMU broadly, spanning disciplines in science, engineering, geography, public health, immigrant and settlement studies, and food security. This will be a great way to meet passionate individuals and learn about some of the research that we are all taking in responding to the climate crisis.

Session 4: Empowering Future Leaders: Transforming Climate Anxiety into Climate Courage, Resilience and Action

By working collaboratively, educators, youth, and youth workers can all work together to become Generation Green - a generation who cares for each other and for the planet. In this session, Dr. Smita Dhakal, an international dentist and currently a research associate at UHN, will share her insights on how immigrant youth can contribute to addressing climate change and building resilience. By highlighting the unique perspectives of immigrant communities, Dr. Dhakal aims to foster a more comprehensive understanding of climate change challenges and develop strategies that reflect the diversity of Canada's population.

Susan Debreceni, Program Lead at University of Toronto's Trash Team, will share her experience of what UofT Trash Team does, and what options individuals/groups have within their community when it comes to plastic, and how they empower students to take action to reduce plastic through a combination of community outreach, education, and solutions-based research programs.


Founded in 2017, the University of Toronto's Trash Team is a science-based community outreach organization of undergraduate and graduate students, postdoctoral fellows, academics, community volunteers and staff all working together with a common objective of increasing waste literacy in societies while reducing plastic pollution in the environment.

Session 5: Closing Remarks

Closing remarks by Bryant Serre. Join us in thanking our guest speakers and department for their efforts in delivering an insightful 15th Annual PhD Symposium.

Session 6: Coffee, Lab tours, and Wrap-up

Grab a coffee and engage in this fun, mix-and-mingle session with an opportunity to meet new people and observe the labs and research taking place at the Centre for Urban Innovation. The Centre for Urban Innovation is a collaborative space where innovative thinkers come together to address the issues posed by the climate crisis in our cities. From alternative energy and water management to data analytics and smart urban infrastructure, our researchers and students are helping to define the cities of the next century.



Our Guest Speakers

Dr. Imogen Coe: Dr. Imogen R. Coe is a professor in the Department of Chemistry and Biology, and is also an affiliate scientist in the Li Ka Shing Knowledge Institute, Keenan Research Centre, at St. Michael's Hospital, where her research group studies the biology of drug transporters which are proteins that facilitate the entry into cells of anti-cancer and antiviral drugs. Dr. Coe is internationally recognized as a Canadian thought leader in the area of inclusion, diversity, equity, and accessibility (IDEA) in STEM.



Jess Wainer: As the CEO of Rainforest Reliance, Jess has more than two decades of experience in food cultivation, production, sales and distribution spanning five continents and more than ten years of experience in climate, regenerative agriculture, renewable energy, food security and Indigenous Peoples rights.



Brooke Filsinger: After a sixteen-year research career for Cancer Care Ontario (now part of Ontario Health), Brooke Filsinger joined the Faculty of Science to focus on her passion – Indigenous science. In addition to being an advisor to the Dean, she is also an EnSciMan PhD candidate, where the overlap between her two roles share the objective of creating spaces for Indigenous students to apply traditional research methods and teachings in STEM. Since joining the faculty, Brooke has worked on cultivating relationships with Indigenous community members at TMU to integrate Indigenous representation within the curriculum while identifying systemic barriers preventing Indigenous students from pursuing education in STEM. Brooke’s first-hand experience as a Haudenosaunee Indigenous student and learnings from prior decolonization efforts are invaluable to the faculty’s efforts in reconciliation and knowledge sharing with Indigenous communities.



Dr. Smita Dhakal: Dr. Smita Dhakal, an international dentist and public health graduate from Western University London, Ontario, is a dedicated researcher at Toronto General Hospital Research Institute and University Health Network, specializing in immigrant health and impact of social factors on health. As an immigrant herself from Nepal, she has first-hand experience of the climate crisis, understanding its profound impact on mental health. Canada’s diverse population inspires Smita to explore how immigrant youth can contribute to addressing climate change and building



resilience. She believes that empowering immigrant communities to engage with climate action initiatives is essential for creating inclusive and effective solutions. Smita has demonstrated leadership as a board member of Global Humanitarian Aid, where she plays a vital role in addressing humanitarian crises and promoting resilience in vulnerable populations worldwide.

Smita aims to share her insights on empowering immigrant youth to address climate anxiety. By highlighting the unique perspectives of immigrant communities, she aims to foster a more comprehensive understanding of climate change challenges and develop strategies that reflect the diversity of Canada's population.

Susan Debreceni: Susan is passionate about connecting individuals with meaningful opportunities and spent over a decade supporting a national network of community volunteers through the Great Canadian Shoreline Cleanup. Her goal is to connect individuals to meaningful opportunities that provide them with the ability to become more active in their local community.



Event Team

Bryant Serre: Co-supervised by Drs. Stephanie Melles and Claire Oswald, Bryant's research involves both in-lab and field techniques to assess the concentration, duration, and frequency of chloride zooplankton exposed to in the nearshore environment of the Toronto and Region Area of Concern. His research will be combining a series of field high-frequency chloride sensors, and zooplankton sampling to support in-lab water column experiments and the development of a pulse exposure apparatus. Bryant currently serves on the steering committee for SETAC's Freshwater Salinization Working Group, and the Global Lakes Environmental Observatory Network student association.

Prior to TMU, Bryant completed his Masters of Science at McGill, and later Landscape Ecology and Ecotoxicology at University of Idaho, where in collaboration with nearly 40 conservation practitioners from local- to international scales with Google Outreach, evaluated the reliability and validity of large landscape ecology models that support North America's 30-in-30: to decide on which 30% of land to protect by 2030.



Saidia Ali: Saidia is a first-year Ph.D. student, in the Environmental Applied Science and Management program. She has considerable experience in public education and actively advocates for sustainable e-waste management practices by participating in community outreach programs in Peel and conferences throughout Canada. With more than five years of experience in research and teaching, she has knowledge in the field of environmental data analysis, green IT, sustainability, and municipal waste policies. Specifically, her dissertation focuses on sustainable electronic waste management in Canada through comparative analyses with other countries. Through her research, Saidia aims to guide governmental policies and propel Canada's adoption of the circular economy tailored towards the e-waste sector.



Steve Naraine: Steve is a second year PhD student in the EnSciMan program. He holds an M.Sc in Molecular Science, and B.Sc in Medical Physics. His research interests are in the science and policy of controlled substances as pharmaceuticals. In particular his dissertation focuses on the Psilocybe mushroom, comparing morphology and chemistry of pharmaceutical products and grey market products, compiling historical and ancient medicine uses, to draft a potential Canadian regulatory framework. These studies aim to guide policy and support the development of an emerging industry in Canada.



Ghadir Reza Dokht: As a dedicated educator with a passion for environmental stewardship, Ghadir holds a Bachelor's degree in Chemical Engineering and a Master's in Environmental Sciences. Currently pursuing her Ph.D. in Environmental Science and Applied Management, she is channeling her expertise in modeling, environmental behavior, and waste management to nurture the next generation of eco-conscious leaders through her role as an educator and manager of Scholars a learning center, where Ghadir guides youth towards their academic aspirations while instilling a commitment to sustainable practices.



Arjun Bhattarai: Arjun is a current PhD student at TMU with more than ten years of extensive experience in public health program planning, implementation, inspection, evaluation, and research at the national and international levels. Arjun previously completed his MPH from the State University of Bangladesh, his MSc in Health Studies and Gerontology from the University of Waterloo, B.Ed in Health Education from Tribhuvan University Nepal, and BASc in Public Health and Safety from TMU.

He is a certified public health Inspector from the Canadian Institute of Public Health Inspectors. He previously worked at the Grey Bruce Health Unit and North Bay Parry Sound District Health Unit under the Ontario Ministry of Health and Long-term Care. Arjun was a gold medalist in his MPH degree and also awarded with the *Top 100 most effective innovative ideas in the world* issued by the Bertha Centre for Social Innovation and Entrepreneurship, University of Cape Town in 2015. Arjun has a deep interest in conducting research on Ontario's water and wastewater sectors, where he is collaborating with his professors at TMU, Dr. Thomas Tenkate and Dr. Ciro LeCompte.



