



MICHIGAN UNIVERSITY-WIDE
SUSTAINABILITY & ENVIRONMENT
CONFERENCE 2019

Location: Rackham Building (3rd and 4th floors)

Thursday, February 21

- 11:30am – 12:30pm **Pre-conference workshops – advance registration required**
1. Mixed models in environmental science (*East*)
2. Elevator pitches: taking your communication to the next level (*West*)
- 12:30 – 1:00pm **Registration (with tea, coffee, and light snacks) (Assembly hall)**
- 1:00 – 2:30pm **Welcoming Plenary (Amphitheater)**
Perrin Selcer (History), Anna White (IOE), Caitlin Drummond (Erb)
- 2:45 – 4:45pm **Themed parallel sessions**
A1: Food systems (*East*)
A2: Policy, politics, and governance (*West*)
A3: Materials and waste (*Earl Lewis*)
- 5:00 – 7:00pm **Poster Reception & Poster Lightning Talks (with finger food & bar) (Assembly hall)**
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Friday, February 22

- 9:00 – 9:30am **Breakfast (Assembly hall)**
- 9:30 – 10:20am **Morning Plenary (Amphitheater)**
Barry Rabe (Ford)
- 10:30am – 12:30pm **Themed parallel sessions**
B1: Environmental communication (*East*)
B2: Urban systems and infrastructure (*West*)
B3: Business and sustainability (*Earl Lewis*)
- 12:30 – 1:30pm **Lunch (Assembly hall)**
- 1:30 – 3:30pm **Themed parallel sessions**
C1: Public impact (*East*)
C2: Health (*West*)
C3: Energy (*Earl Lewis*)
- 3:30 – 3:45pm **Tea and coffee break (Assembly hall)**
- 3:45 – 5:15pm **Leadership Roundtable (Amphitheater)**
“Institutionalizing interdisciplinary environment and sustainability research”
DuBois Bowman (SPH), Jennifer Haverkamp (Graham), Jonathan Overpeck (SEAS)
- 6:00 – 8:00pm **Public reception – RSVP required (Zingerman’s Greyline)**
“Urban Resilience: From Theory to Practice”
Dr. Missy Stults (Sustainability and Innovations Manager, City of Ann Arbor)

Learn more about MUSE: <https://muse-initiative.umich.edu>

Join the conversation: #MUSE_Umich

About the MUSE Initiative

The pace and scale of global environmental changes to Earth systems and the pivotal role humans are playing in driving those changes have introduced challenges which confront science and society. Although many scholars are working in this area, these challenges are far from solved. Tackling these challenges requires communication and collaboration both within academia and between researchers and the public. The Michigan University-Wide Sustainability and Environment (MUSE) Initiative was founded to bring together emerging scholars to foster this crucial dialogue and encourage collaborations. MUSE consists of a bi-weekly workshop, an online network of scholars, and this annual conference.



We warmly welcome you to the 3rd annual MUSE Conference! The conference's goals are to bring together the immense array of sustainability and environment related research that we are doing here at the University of Michigan, Ann Arbor and foster on-going connections and collaborations. The conference is a constructive environment where we will share ideas and be open to the differences between disciplinary approaches – recognizing, embracing, and exploring this diversity is what will make our research richer and perhaps provide it that extra impact, so that together we can make real change in this world.

We offer our sincere thanks to our sponsors without whom this conference would not be possible.



Additional sponsors: *College of Literature Science and Arts, College of Engineering, Rackham Graduate School, School of Public Health, Industrial and Operations Engineering, Political Science, English Language and Literature*

MUSE Conference 2019 Organizing Committee:

Co-chair: Michael Lerner (Political Science and Ford School of Public Policy)

Co-chair: Jennifer Carman (School for Environment and Sustainability)

Sara Goto Gray (School for Environment and Sustainability)

Brent Heard (School for Environment and Sustainability)

Katherine Hummel (English)

Theodore Kulczycki (Economics)

Tom Logan (Industrial and Operations Engineering)

Nicole Ryan (School for Environment and Sustainability)

Tim Williams (Industrial and Operations Engineering)

Emily Yang (Climate and Space Sciences and Engineering)

Conference Organizing Partner: Arman Golrokhian (Alumnus, Public Policy & SEAS)

Plenary sessions (Amphitheater)

1:00pm Thursday **Welcome Plenary**

Perrin Selcer (History) *Stockholm, 1972: Environment, Development and the Search for a New International Order*

Anna White (IOE) *Persistent patterns of discriminatory housing policy and inequity: A spatial analysis*

Caitlin Drummond (Erb) *Downstream Consequences of Exposure to Climate Misinformation*

9:30am Friday **Breakfast plenary**

Barry Rabe (Ford) *The politics of carbon pricing*

Themed parallel sessions (following pages)

A: Thursday 21 February, 2:45 - 4:45pm

A1: Food Systems (East)

Katerina Stylianou (EHS/SPH) *Making More Sustainable Food Choices: A Comparison of Environmental and Nutritional Impacts and Benefits of Pizzas*

Brent R. Heard (SEAS) *Comparison of Life Cycle Greenhouse Gas Emissions from Meal Kits and Grocery Store Meals*

Kaitlin Alyssa Vapenik (SEAS) *Mapping Urban Agriculture*

Tim Williams (IOE) *Data science and computation for food security*

Zoe Engle (LSA) *A Woman's Right: Understanding The Impact Of Empowerment On Food Security And Sustainability In The Global South*

Anne Elise Stratton (SEAS) *Transitions to sustainable farm management: impacts of crop diversification vary across environmental gradients*

A2: Policy, Politics, & Governance (West)

Brett Zeuner (SEAS) *An Obsolescing Bargain in a Rentier State: Multinationals, Artisanal Miners, and Cobalt in the Democratic Republic of Congo*

Pia Ann-Louise Lu (SEAS) *Between a Shock and a Hard Place*

Melanie Kay Chasseur (IFRI/SEAS) *Stewarding Michigan's Forests: Matching Management Perceptions with Practice*

Benjamin Pollins (SEAS) *Life After Delisting: Sustaining Economic, Ecological, and Social Revitalization in Michigan Areas of Concern*

Michael Lerner (Ford/PoliSci) *Decentralization, Siting Restrictions, and the Development of Utility-Scale Wind Power in the United States*

A3: Materials & Waste (Earl Lewis)

Sonja Gagen (CEE) *Waste systems in rural Vietnam, Cambodia, and Nepal*

Carol Maione (SEAS) *Waste Economies in Zanzibar, Tanzania: The Emergence of Ocean Plastic Pollution as a Major Result of Ecotourism Growth*

Aubrey Arain (SPH) *Analysis of environmental impacts of informal e-waste recycling using Life Cycle Assessment and Material Flow Analysis methods*

Hui Zhang (CEE) *Removal of trimethoprim by iron sulfide activated persulfate oxidation*

Tae Lim (MechE) *Reducing life cycle CO2 emissions from concrete manufacturing by utilizing CO2*

Yongxian Zhu (MechE) *Is circular economy feasible for U.S. aluminum industry?*

B: Friday 22 February, 10:30am – 12:30pm

B1: Environmental Communication (East)

Zoe Bultman and Andrew Cox (SEAS) *Lost in translation: how the dominance of English in science inhibits conservation and sustainability*

Stephanie Preston (Psychology) *Beauty in the Eye of the Activist: Narratives about Monarch butterflies affect environmental engagement*

Jennifer Carman (SEAS) *Expanding the role of human behavior in climate change adaptation: Proposed framework and practices*

Lauren Lutzke (SEAS) *Structured Introspection: Can a simple intervention help people identify fake news about climate change on Facebook?*

James Arnott (SEAS) *Defining knowledge use for sustainability*

B2: Urban Systems & Infrastructure (West)

Irene E. Brisson (Taubman) *Cane fields to paved yards: Transformations in inhabiting a suburban Leyogann*

Cristian Pablo Muñoz Abarca (URP) *Landscapes of resilience: Devising landscape strategies for the protection of urban wetlands in Concepción, Chile.*

Zhengtian Xu (CEE) *On the Capacity and Efficiency of Ride-Sourcing Systems*

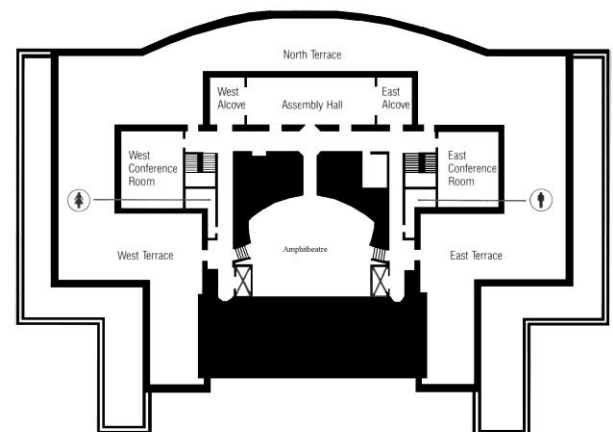
Jim Gawron (SEAS) *Deep Decarbonization from Electrified Autonomous Taxi Fleets: Life Cycle Assessment and Case Study in Austin, TX*

B3: Business & Sustainability (Earl Lewis)

Tim Doering (Ross) *The Mere Packaging Effect*

Joshua Newell (SEAS) *Revealing supply chains to increase sustainability and reduce risk*

Merriam Haffar (Erb Institute), Brittany Szczepanik (NSF International), Zoe Hoster (Maven/General Motors), Pamela Taylor (Bedrock Detroit) *Panel discussion*



Note: The Earl Lewis Room is on the 3rd Floor of the Rackham Building

C: Friday 22 February, 1:30 – 3:30pm

C1: Public Impact (East)

Matthew Vedrin (CEE) *Intermittent water supply systems in Ethiopia, Gabon, and Mexico - building collectively impactful dissertations*

Heather Tanner (Biology) *Cooperative Science*

Sara Adlerstein (SEAS) *Arts & sustainability: a personal vision converges with a new school direction*

Adam Simon (EES) *A Plan for Carbon Neutrality at the University of Michigan*

Emilia Askari (PiTE) *Environmental Justice as a High School Elective Class: Flint Students Respond to the Water Crisis*

C2: Health (West)

Danielle Wilkins (SEAS) *The Environmental Impact of Chronic Disease: A Life Cycle Assessment of Type 2 Diabetes*

Tim Williams (IOE) *Parks and safety: a comparative study of green space access and its inequities in five US cities*

Jung Yeon Won (Biostat/SPH) *Quantifying the impact of geocoding error on estimating environment-health associations and reduce bias with SIMEX*

Tom Logan (IOE) *Co-benefits of urban density on public health in the 500 largest US cities*

Megan Czerwinski (Nursing) *Beliefs, knowledge, and educational needs of disaster health providers surrounding climate change and health*

C3: Energy (Earl Lewis)

Amelia Esenstad (Ford) *The Taxation of Wind Energy*

Perry Samson (CLASP) *Monitoring Extreme Weather Frequency per Congressional District*

Alan Gorchoy Negron (CLASP) *Methane Emissions from Offshore Oil and Gas Platforms in the Gulf of Mexico*

Davied Cordero (SEAS) *Biomass Residue-Fueled Micro-Grid for a Rural Community in Puerto Rico*

Sarah Mills (Ford) *When Land Use & Renewable Energy Goals Collide*

3 **Zachary Fair (CLASP)** *Importance of detecting supraglacial lakes and melt ponds using laser altimetry*

4 **Emily Yang (CLASP)** *Toward using OCO-2 observations and Lagrangian modeling to estimate urban carbon dioxide emissions in the Middle East*

5 **Phoebe Aron (EES)** *Structural controls on forest canopy water cycling revealed through stable water isotopes*

6 **Connor Cox (Ross/SEAS)** *Business Models for Energy Entrepreneurship in Emerging Markets*

7 **Lea Sarment (Dentistry)** *Sustainability in Dental Care*

8 **Mara Page (EES)** *Understanding pressures from environmental variability in Kenya during the emergence of *H. sapiens**

9 **Brian Lezzi (MSE)** *Growing Bricks: Assessing Biocement for Lower Embodied Carbon Structures*

10 **Luisa Barrera (ME)** *Solar device for nitrate removal from wastewater coupled with energy and nutrient recovery*

11 **Danielle Fagnani (Chemistry)** *A Second Life: Chemical Approaches to Repurposing Plastics*

12 **Tom Logan (IOE)** *Measuring urban resilience using access to essential services: Case study with Hurricane Florence*

13 **Thomas Chen (IOE)** *Optimizing Inspection Routes in Pipeline Networks*

14 **Adam Peterson (SPH)** *Examining Spatial-Temporal Associations through Spatial Temporal Aggregated Predictors*

15 **Tahmeed Tureen (Biostat)** *Does sidewalk availability promote walking in working-class urban neighborhoods in Latin America?*

16 **Elnaz Kabir (IOE)** *Probabilistic Mixture Models for Predicting Thunderstorm-Induced Power Outages*

17 **Gwen Gell (Taubman/SEAS/SI/Ross)** *Supporting Community-Driven Green Space Design Using Visualization Software*

18 **Derek Smith (EES)** *Investigating impacts of hydrogen peroxide on microbial interactions and metabolism during toxic cyanobacterial blooms in western Lake Erie*

19 **Xiaodan Zhou (SEAS)** *Water as an economic good: does water price reflect water scarcity?*

20 **Emily Canosa (SEAS)** *Exploring the Impact of Sustainable Learning Communities on First Year Students at Michigan*

Poster Presentations

5-7pm Thursday 21 February (Assembly Hall)

- 1 **Kallisse Dent (SPH)** *Understanding Pathways Between Agriculture Investment and Household Food Security and Diet Diversity in Rwanda*
- 2 **Alexander Thompson (EES)** *Modulation of mid-Holocene African rainfall by dust aerosol direct and indirect effects*