



CLEETS

Clean Energy and Equitable Transportation
Solutions NSF-UKRI Global Center



UK Research
and Innovation

SRI 2025

SUSTAINABILITY RESEARCH
& INNOVATION CONGRESS
CHICAGO
16-19 June 2025

SRI-Congress 2025 and CLEETS 2nd Annual Meeting

June 16-20, 2025

The **NSF-UKRI Clean Energy and Equitable Transportation Solutions CLEETS) Global Center** is conducting its Annual Meeting (June 16-20, 2025) which will be co-located with the **Sustainability Research and Innovation (SRI) Congress** in Chicago. This event provides an excellent opportunity to showcase cutting-edge research to a global audience of experts, policymakers, and industry leaders dedicated to sustainability, energy transitions, and equitable transportation solutions. Join us in shaping the future of clean energy and equitable transportation solutions.

Focus area topics include:

- Responding to Weather Hazards on Transportation
- Solutions for Sustainable Transport & Mobility Systems
- Present and Future Energy Transitions & Policy for the Transportation Sector.
- Data Science for Sustainable Transport and Energy: Enhancing Decision-Making Tools and Future Directions

Workshop Goals

- Be part of a growing Global Center with partnerships in multiple countries as a CLEETS Associate.
- Opportunity for an invitation to a special issue journal.
- Network with leading researchers, policymakers, and professionals in climate, transport, and energy.
- Engage in interdisciplinary solutions research with experts.
- Selected interesting talks will be listed as “featured” talks.

Workshop Agenda and Presentations

Arrival (Day 0): Sunday, June 15, 2025	
Hotel Check-in	Sheraton, Chicago, IL
Day 1 Agenda: Monday, June 16, 2025	
Time (CDT)	Session
7:30 a.m.	SRI/CLEETS Registration Opens
9:00 a.m. – 10:30 a.m.	SRI Plenary Session Room: Sheraton Chicago Ballroom
10:30 a.m. – 10:50 a.m.	<i>Break – Free Discussion Time</i>
10:50 a.m. – 12:05 p.m.	<p>CLEETS Partner Panel 1: Building Better Solutions for Climate-induced Multi-Hazards in the Global South Room: Arkansas</p> <ul style="list-style-type: none"> • Gavin Shaddik (Cardiff University) • Tristram Hales (Cardiff University) • Lu Shuo (Cardiff University) • F Albert Liu (University of Alberta) • Chris Funk (University of California, Santa Barbara) • Abhinav Wadhwa (Discovery Partners Institute) <p>CLEETS Partner Panel 2: Chicago as a Global Leader in Climate Resilience: Industry-Academic Collaborative Strategies for Urban Sustainability and Economic Growth Room: Mississippi</p> <ul style="list-style-type: none"> • Ashish Sharma (Discovery Partners Institute, University of Illinois System, <i>Moderator</i>) • Sean Quinn (HOK) • Michelle Carr (Evergreen Climate Innovations)
12:05 a.m. - 1:30 p.m.	Lunch Break
1:30 p.m. – 2:45 p.m.	<p>CLEETS Partner Event: Participatory workshop for environmental sustainability for urban communities Room: Michigan A</p>
2:45 p.m. – 3:00 p.m.	Afternoon Coffee Break
3:00 p.m. – 4:15 p.m.	Independent time
4:15 p.m. – 6:00 p.m.	Plenary: Powering a Sustainable Future: The Dual Imperative of Water and Energy Transitions

	Room: Sheraton Chicago Ballroom
--	--

Workshop Agenda and Presentations

Day 2 Agenda: Tuesday, June 17, 2025	
Time (CDT)	Session
7:30 a.m.	Registration Opens
8 a.m. – 9 a.m.	CLEETS Annual Meeting – Morning Check-Ins Room: Michigan A
9 a.m. – 10:30 a.m.	Plenary: One Health: Holistic Approaches for Sustainable Human and Planetary Health Room: Sheraton Chicago Ballroom
10:00 a.m. – 10:30 a.m.	<i>Break – Free Discussion Time</i>
10:50 a.m. – 12:05 p.m.	<p>CLEETS Science Session 1: Responding to Weather Hazards on Transportation (7 minutes talks + 3 minutes of Q&A) Room: Michigan A Moderator: Karn Vohra (University of Birmingham)</p> <ul style="list-style-type: none"> • Brittany Welch (NSF National Center for Atmospheric Research): Assessing Electric and Autonomous Vehicle Operability in Adverse Weather with Large Eddy Simulations • Gavin Shaddick (Cardiff University): Global climate, local challenges: using Data Science and AI to develop adaptation strategies and increase resilience to environmental change. • Sicheng Wu: (Discovery Partners Institute, University of Illinois System): Assessing the impact of traffic anthropogenic heat emissions on urban climate during heatwave and non-heat wave periods: a case study in the Chicago metropolitan area • Peiyuan Li (Discovery Partners Institute, University of Illinois System): Developing region-aligned climate scenarios for informed decision making on climate resilience and risk management. • Wencheng Bao (University of Illinois Urbana-Champaign): Electric Vehicle Charging Stations at Risk from Hazardous Events and Power Outages: Analytics and Resilience Implications • Karn Vohra (University of Birmingham): Establishing a robust contemporary meteorological baseline towards decarbonizing rapidly growing road transportation hubs in the US and UK • Wencheng Bao (University of Illinois Urbana-Champaign): Flood-Resilient Electric Vehicle Infrastructure: A Bi-Level Optimization Framework for Urban Transportation Networks

Day 2 Agenda: Tuesday, June 17, 2025	
Time (CDT)	Session
12:05 a.m. - 1:30 p.m.	Lunch Break
1:30 p.m. – 2:45 p.m.	<p>CLEETS Science Session 2: Current Decision-Making Tools for Transportation Sector and Future Directions. <i>(5-minute lightning talks; Q/A and discussion in poster session)</i> Room: Michigan A Moderator: Suvin Venthuruthiyil (<i>University of Illinois, Chicago</i>)</p> <ul style="list-style-type: none"> • Rukmini Manasa Avadhanam (Discovery Partners Institute, University of Illinois System): An exploration of climate change education interventions across US and UK. • Aurora Cossairt (Arizona State University): A Bioeconomic Model of Pollution in Urban Mobility Infrastructure Systems • Carolina Veiga (Discovery Partners Institute, University of Illinois System): A Visual System for Creating and Analyzing Multiple Battery Electric Truck Simulations • Manogna Nimishakavi: (University of Birmingham): Life cycle assessment of recycling of spent li-ion batteries • Ameer Mustafa (University of Illinois, Chicago): Agent-based Simulation of Battery Electric Trucks • Maurizio Albano (Cardiff University): An Agent-based Comparative Study of Heavy-Duty Transportation Electrification • Abhinav Wadhwa (Discovery Partners Institute, University of Illinois System): Building Flood-Resilient Cities: A Scientific Toolkit for Urban Planning Decisions • Ajay Satish Kumar (Discovery Partners Institute, University of Illinois System): Data-driven early warning and visualization platform for environmental and transportation resilience • Kazi Shahrukh Omar (University of Illinois Chicago): Developing an Open Computational Framework for Decision Support Across Transportation, Weather, and Public Health • Nima Valizadeh (Cardiff University): Edge-Intelligent Energy and Mobility Orchestration for Climate-Resilient Transport Networks • Mishal Assif Poovan Kavil (University of Illinois Urbana-Champaign): Network Simulation Platform for Hydrogen Fuel Trucking in Illinois • Suvin Padinjare Venthuruthiyil (University of Illinois, Chicago): A Model-Free Stochastic Link Traffic Approximation Framework for Network-Wide Traffic Assignment and Emissions Estimation • Curtis Walker (NSF National Center for Atmospheric Research): Pikalert NSF-NCAR's Road Weather Hazard Prediction System • Manogna Nimishakavi: (University of Birmingham): Electric vehicle charging infrastructure placement and prediction in the West Midlands, United Kingdom
2:45 p.m. – 3:00 p.m.	Break – Free Discussion Time

SRI-Congress 2025 and CLEETS 2nd Annual Meeting

Day 2 Agenda: Tuesday, June 17, 2025	
Time (CDT)	Session
3:05 p.m. – 4:20 p.m.	CLEETS: Poster Session (36"x 24" poster size) Room: Superior B
4:30 p.m. - 5:45 p.m.	Plenary: Respectful Scientific Collaborations with Indigenous Peoples Room: Sheraton Chicago Ballroom

Workshop Agenda and Presentations

Day 3 Agenda: Wednesday, June 18, 2025	
Time (CDT)	Session
7:30 a.m.	Registration Opens
8 a.m. – 9 a.m.	CLEETS Annual Meeting – Morning Check-Ins Room: Michigan A
9 a.m. – 10:30 a.m.	Plenary: Financing the Future – Mobilizing Capital for Sustainability Room: Sheraton Chicago Ballroom

10:30 a.m. – 10:50 a.m.	Break – Free Discussion Time
10:50 a.m. – 12:20 p.m.	<p>CLEETS Science Session 3: Solutions for Sustainable Transport & Mobility Systems (7 minutes long + 3 minutes of Q&A) Room: Michigan A Moderator: Paul Haggar (Cardiff University)</p> <ul style="list-style-type: none"> • Maurizio Albano (Cardiff University): Future Cardiff Electric Vehicle Infrastructure: usage metrics, impact on electrical distribution networks, equality and socio-economic impact and economic performances in local community • Manaswinee Kar (University of Illinois, Chicago): High-Resolution Data-Driven Emission Trajectory Estimation for Urban Transportation Networks: A Case Study of the Chicago Metropolitan Area • Manaswinee Kar (University of Illinois, Chicago): Strategic Electrification and Infrastructure Modernization: Advancing Sustainable Energy Transition in the Illinois Port District • Yangbo Bi (University of Birmingham): New Opportunities for Active Mobility Perspective: Application of 3D Reconstruction and Text-Instruction Model Editing in VR Simulation • Shubham Kela (Pandit Deendayal Energy University, India): Synchronized Traffic Signals: A Scalable Smart City Solution for Reducing Vehicular Emissions and Advancing Global Sustainability Goals

SRI-Congress 2025 and CLEETS 2nd Annual Meeting

	<ul style="list-style-type: none"> • Nitin Auluck (Indian Institute of Technology — Ropar, India): OffloadX: Uncertainty-Aware Decision-Making in Self-Driving Car Networks • Ye Hang (University of Birmingham): Sustainable transport actions: A comprehensive review of policy in West Midlands, UK • Malik Muhammad Arslan (Lahore University of Management Sciences, Pakistan): Transforming Urban Transport: The Role of Electric Three-Wheelers in Sustainable Mobility • Yanbing Wang (Arizona State University): V2X-Enabled Strategies to Reduce Energy Waste in Stop-and-Go Traffic: A Digital Testbed Evaluation
12:20 p.m. - 1:30 p.m.	Lunch Break
1:30 p.m. – 2:45 p.m.	<p>CLEETS Panel Discussion 1: Interdependent Transportation and Energy Systems: Solutions Bridging Sustainability and Resilience Room: Michigan A</p> <ul style="list-style-type: none"> • Ria Kontou (University of Illinois Urbana-Champaign) <u>Moderator</u> • Dr. Ranjitha Shivaram (Electric Power Research Institute) • Prof. Xinwu Qian (Rice University) • Dimitris Potoglou (Cardiff University) • Dr. Alex Vlachokostas (Pacific Northwest National Laboratory)
3:00 p.m. – 3:30 p.m.	Break – Free Discussion Time
3:05 p.m. – 5:00 p.m.	SCIENTIFIC EXCURSION

Workshop Agenda and Presentations

Day 4 Agenda: Thursday, June 19, 2025	
Time (CDT)	Session
7:30 a.m.	Registration Opens
8 a.m. – 9 a.m.	CLEETS Annual Meeting – Morning Check-Ins <u>Room:</u> Michigan A
9 a.m. – 10:30 a.m.	Plenary: Sustainability, Justice & Joy: A Juneteenth Reflection <u>Room:</u> Sheraton Chicago Ballroom

10:00 a.m. – 10:30 a.m.	Break – Free Discussion Time
10:50 a.m. – 12:20 p.m.	<p>CLEETS Science Session 4: Present and Future Energy Transitions & Policy for Transportation Sector (7 minutes long + 3 minutes of Q&A) <u>Room:</u> Michigan A <u>Moderator:</u> Terence (Terry) Johnson (University of Birmingham)</p> <ul style="list-style-type: none"> • Sutanu Kumar Ghosh (University of Illinois, Chicago): Adaptive Reinforcement Learning for Autonomous Cyber Defense in Critical Infrastructure • Priyankadevi Murugappan (WSP, UAE): Assessing Economic Diversification and Decarbonization Pathways in the GCC: A Multi-Criteria Decision Analysis of EV Adoption and Circular Economy Strategies • Terence Johnson (University of Birmingham): Climate change mitigation through innovations in the road passenger transportation sector with attention to lower emission Fuel types • Berlan Rodríguez (Pontifical Catholic University of Peru, Peru): Feasibility of a Policy for the Acquisition of Electric

SRI-Congress 2025 and CLEETS 2nd Annual Meeting

	<p>Vehicles by Taxi Drivers in Lima: A Life Cycle Assessment Approach</p> <ul style="list-style-type: none"> • Eleftheria Kontou (University of Illinois Urbana-Champaign): Preparing for the Energy Transition: Projecting the Impact of Electric Vehicle Adoption on the U.S. Gasoline Supply Chain Through 2050 • Paul Haggar (Cardiff University): Sustainability in Future Urban Transport Scenarios: Qualitative Synthesis • Shamal Chandra Karmaker (Kyushu University, Japan): Tax policies, innovation, and emission reduction: A data-driven approach to sustainable transportation. • Raja Sekhar Mamillapalli (NICMAR, Hyderabad, India): Public Private Partnership (PPP) in Public Transport System Policy for Urban Transportation.
--	--

12:20 p.m. - 1:30 p.m.	Lunch Break
1:00 p.m. – 2:15 p.m.	<p>CLEETS Panel Discussion 2: Compute, Transport, and Energy Nexus Panel Room: Michigan A</p> <ul style="list-style-type: none"> • Omer Rana (Cardiff University, <i>Moderator</i>) • Venkat Venkatakrishnan (Discovery Partners Institute) • Girish Chowdhary (EarthSense) • Lavanya Marla (UIUC) • Kristy Salmon (BP)
3:00 p.m. – 3:30 p.m.	Break – Free Discussion Time
3:30 p.m. – 5:00 p.m.	<p>Closing Ceremony Room: Sheraton Chicago Ballroom</p>

Internal Meeting

Day 5 Meeting Agenda: Thursday, June 20, 2025	
Location: DPI, 200 S. Wacker, Chicago, IL (4th Floor)	
Time (CDT)	Session
8:00 a.m. - 8.30 a.m.	Breakfast (catered)
8:30 a.m. – 10:00 a.m.	CLEETS: Year 2 review and report presentations (PIs)
10:00 a.m. – 10:30 a.m.	<i>Break – Free Discussion Time</i>
10:30 a.m. – 12:00 p.m.	CLEETS: Session 1: Cross-cutting Research and Data Overview (CLEETS team)
12:00 p.m. – 1:00 p.m.	<i>Working Lunch “presentation by one of the speakers”: TBD</i>
1:15 p.m. – 2:15 p.m.	CLEETS: Breakout sessions: Thrust-based future planning
2:45 p.m. – 4:15 p.m.	CLEETS Session 2: Year 3 Plans
6 p.m. – 8 p.m.	<i>CLEETS Working dinner: Industry speaker/panel (TBD)</i>

Arrival (Day 6): Saturday, June 21, 2025	
Hotel Check-out	Sheraton, Chicago, IL