




Center for Advancing Research in
Transportation Emissions, Energy, and Health
A USDOT University Transportation Center

2nd Transportation, Air Quality, and Health Symposium

May 18–20, 2021 | Virtual Event

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Tuesday, May 18, 2021 — Conference Day One

Welcome and Opening Remarks

10:30 a.m.–11:00 a.m. (CDT)

The welcome and opening remarks will be delivered by **Joe Zietsman** of the Texas A&M Transportation Institute and Center for Advancing Research in Transportation Emissions, Energy, and Health, and **Matt Barth** of the University of California, Riverside.

Keynote Session: Challenges and Opportunities in Community Air Quality and Health

11:00 a.m.–12:00 p.m. (CDT)

The keynote session will feature remarks from **Liane Randolph** of the California Air Resources Board, and a facilitated discussion moderated by **Matt Barth** of the University of California, Riverside.

Break

12:00 p.m.–12:15 p.m. (CDT)

Breakout Sessions

Breakout Session A: Modeling Traffic Emissions and Air Pollution

12:15 p.m.–1:30 p.m. (CDT)

Moderator: Kirsten Koehler, Johns Hopkins University

Presentations: *Presenting authors ONLY are listed*

1. A Surrogate Approach for Estimating Vehicle-Related Emissions Under Heterogenous Traffic Patterns
Yuche Chen, University of South Carolina
2. Assessing Ambient Pollution Concentrations and Personal Exposures in Baltimore: The SEARCH Project
Misti Zamora, Johns Hopkins University's Bloomberg School of Public Health

3. Estimating Traffic-Related Air Pollution Using a Noise-Based Model
Masoud Fallah-Shorshani, *University of Southern California*
4. Modeling Spatiotemporal Exposures to Traffic-Related Air Pollutants in a Near-Highway Microenvironment
Mayra Chavez, *The University of Texas at El Paso*

Breakout Session B: Characterizing Traffic-Related Air Pollution

12:15 p.m.–1:30 p.m. (CDT)

Moderator: Wen-Whai Li, The University of Texas at El Paso

Presentations: *Presenting authors ONLY are listed*

1. Dynamic Receptor Grid Method for Regional-Level Near-Road Air Quality Analysis: A Case Study for Particulate Matter
Daejin Kim, *Gangneung-Wonju National University*
2. Dust and Particulate Matter Hazard on Interstate 10 at Lordsburg Playa in Southwestern New Mexico
Thomas E. Gill, *The University of Texas at El Paso*
3. Elemental Analysis of PM_{2.5} at Four Schools in El Paso, TX, USA and Ciudad Juarez, Chihuahua, MX
Amit Raysoni, *University of Texas Rio Grande Valley*
4. COVID-19 and Air Pollution: A Case Study of a London Street
Daisy Thomas, *3DATX Corporation*

Break

1:30 p.m.–1:45 p.m. (CDT)

Breakout Sessions

CARTEEH Spotlight Session 1: UTC Paves the Way for Transportation, Air Quality and Health

1:45 p.m.–3:00 p.m. (CDT)

Moderator: Ann Xu, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Advancing a Research Agenda for Transportation Emissions, Health and Beyond
Tara Ramani, Texas A&M Transportation Institute
2. Improving Public Health in Disadvantaged Communities Near Ports Through Heavy-Duty Truck Electrification
Kanok Boriboonsomsin, University of California, Riverside
3. Characterization of Exposures and Associated Health Risks in Underserved Near-Road Communities Due to Traffic Emissions: Recent Investigations in the U.S.-Mexico Border Region
Wen-Whai Li, The University of Texas at El Paso
4. Public Health Methods for Decision Making in Communities
Mary Fox, Johns Hopkins University
5. Teaching Transportation, Air Quality and Public Health
Michael Rodgers, Georgia Institute of Technology

Breakout Session C: Addressing Transportation Emissions to Improve Public Health

1:45 p.m.–3:00 p.m. (CDT)

Moderator: John Hall, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Short-Term Associations of Traffic-Related Air Pollutants on Cardiorespiratory Risk Factors from Low-Income Populations in El Paso, TX
Juan Aguilera, The University of Texas at El Paso
2. The TRANSIT Accountability Study: Preliminary Results & Methods to Assess Impacts of Local Congestion Programs on Pregnant Women in Texas
Perry Hystad, Oregon State University
3. Reducing Community Exposure to Diesel Emissions Through Health-Conscious Truck Routing
Ji Luo, University of California, Riverside

Wednesday, May 19, 2021 — Conference Day Two

Plenary Session: Protecting Community Air Quality and Health

10:30 a.m.–12:00 p.m. (CDT)

The plenary session will feature remarks from **Hanjiro Ambrose** of the California Air Resources Board, **Philip Martien** of the Bay Area Air Quality Management District, **Jo Kay Ghosh** of the South Coast Air Quality Management District, and **Chris Chavez** of the Coalition for Clean Air. The session will be moderated by **Vernon Hughes** of the California Air Resources Board.

Moderator: Vernon Hughes, California Air Resources Board

Presentations:

1. Toward Improved Mobile Source Activity Data for AB 617 Communities
Hanjiro Ambrose, California Air Resources Board
2. Environmental Justice and Air Quality: AB 617 Implementation in the San Francisco Bay Area
Philip Martien, Bay Area Air Quality Management District
3. Improving Air Quality in Environmental Justice Communities in Southern California
Jo Kay Ghosh, South Coast Air Quality Management District
4. Communities' Experience and Perspective on Local Air Quality and Health Impacts
Chris Chavez, Coalition for Clean Air

Break

12:00 p.m.–12:15 p.m. (CDT)

Lightning Talks and Poster Session

12:15 p.m.–2:00 p.m. (CDT)

Moderator: Ben Ettelman, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Off-Road Construction Equipment Electrification: Current State of Technology Development and Pathway toward Market Adoption
Fuad Un-Noor, *University of California, Riverside*
2. The Effect of Vehicular Emissions on the Traffic Wardens
Aderemi Adewunmi, *Nigerian Institute of Transport Technology (NITT)*
3. Can Battery Electric Trucks Replace Conventional Heavy-Duty Trucks Used in Port Drayage Operation?
Shams Tanvir, *California Polytechnic State University*
4. Development of a Standard Testing Method for Vehicle Cabin Air Quality Index
Heejung Jung, *University of California, Riverside*
5. Development and Application of a Micro-PEMS System for Onboard Sensing, Analysis and Reporting
Kent Johnson, *University of California, Riverside*
6. Pollutants and Adverse Health Effects of Traffic Related Air Pollution: A Literature Review
Shabnam Bhuiyan, *The University of Texas Health Science Center at Houston*
7. Bridging Modeling Estimates of Vehicular Emissions with Near-Roadway Ambient Measurements
Ayla Moretti, *University of California, Riverside*
8. Effects of Route Selection on In-Use NO_x Emissions from Heavy-Duty Diesel Trucks
George Scora, *University of California, Riverside*
9. Evaluation of Population Exposure to Traffic-Related Air Pollution by Demographic Characteristics Using Activity-Based Models with Path Retention and Streamlined Dispersion Modeling Tool: Case in Atlanta, GA
Hongyu Lu, *Georgia Institute of Technology*

10. Energy Consumption Estimation for Buses Under Mountain Driving Characteristics: A Machine-Learning Approach
Yuche Chen, University of South Carolina
11. Overview of Active Transportation Programs Implemented Between 2017-2020 in the U.S.
Olga Bredikhina, The University of Alabama
Sanaa Rafique, The University of Alabama

Breakout Sessions

Breakout Session D: Heavy Duty and Non-Road Transportation Emissions

2:00 p.m.–3:00 p.m. (CDT)

Moderator: Haobing Liu, The University of New Mexico

Presentations: *Presenting authors ONLY are listed*

1. Measurement of Particulate Matter and Gaseous Emissions from Commercial Harbor Craft During Real-World Operation
Chas Frederickson, University of California, Riverside
2. Oversize/Overweight Heavy-Duty Vehicle Emissions Impacts Study
Jason Brown, North Central Texas Council of Governments
3. In-Cab Pollutant Measurements for Nonroad Diesel Equipment
Phil Lewis, Texas A&M University

Breakout Session E: Life-Cycle and Regional Assessments of Transportation Emissions

2:00 p.m.–3:00 p.m. (CDT)

Moderator: Kanok Borboonsomsin, University of California, Riverside

Presentations: *Presenting authors ONLY are listed*

1. Life-Cycle Modeling of Technologies and Strategies for a Sustainable Freight System in California
Hanjiro Ambrose, University of California, Davis
Alissa Kendall, University of California, Davis
2. Regional Assessment of Implementing Autonomous Vehicle Dedicated Lanes on Transportation Congestion and Emissions
Farinoush Sharifi, Texas A&M Transportation Institute
3. Energy Use of Full Electric and Combustion Engine Vehicles in Transient Traffic
Aron Jazcilevich, Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México

Thursday, May 20, 2021 — Conference Day Three

Breakout Sessions

Breakout Session F: Health Effects of Air Pollution

10:30 a.m.–11:45 a.m. (CDT)

Moderator: Haneen Khreis, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Air Pollution and Mental Health-Related Emergency Room Visits in California
Ruwan Thilakaratne, Air and Climate Epidemiology Section, California Office of Environmental Health Hazard Assessment, Oakland, CA
2. Development of a Consumer Cumulative Risk Profile
Mary Fox, Johns Hopkins University
3. Systematic Review on the Health Effects of Long-term Exposure to Traffic Related Air Pollution
Hanna Boogaard, Health Effects Institute
4. Air Quality Monitoring in Glasgow
Craig Michie, University of Strathclyde

Breakout Session G: Policy Making and Partnerships for Transportation and Health

10:30 a.m.–11:45 a.m. (CDT)

Moderator: Katie Turnbull, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Development of a Fuel-Economy Based Automobile Excise Tax in the District of Columbia
Joseph Jakuta, District of Columbia Department of Energy and Environment
2. A Systems Approach into Health Pathways from Community Development, Active Travel Behavior to Body Mass Index and Health
Xiaobing Li, Alabama Transportation Institute

3. Frameworks and Tools for Measuring, Understanding, and Realizing Transportation Land Use Coordination for Sustainability, Livability, Health, and Equity
Bruce Appleyard, San Diego State University
4. Software Eats the World: A No Added Hardware, Connected Vehicle Data Driven Approach to Automating Signal Retiming
Jatish Patel, Flow Labs

Break

11:45 a.m.–12:00 p.m. (CDT)

Breakout Sessions

CARTEEH Spotlight Session 2: Highlights from Students and Early Career Researchers

12:00 p.m.–1:15 p.m. (CDT)

Moderator: Haneen Khreis, Texas A&M Transportation Institute

Presentations: *Presenting authors ONLY are listed*

1. Transportation, Technology and Public Health: Assessing the Health Impacts of Automated Vehicles
Soheil Sohrabi, Texas A&M Transportation Institute
2. Use of Traffic-Related Air Quality Estimates to Inform Health-Aware Travel Route Choice
Ji Luo, University of California, Riverside
3. Accurately Tracking Emissions from Electric Power Generation
Yuanrui Sang, The University of Texas at El Paso
4. Evaluation of Potential Autonomous Vehicle Deployment Strategies to Improve Health-Food Accessibility
Chia Hsiu Chang, Johns Hopkins University
5. Investigations of MOVES and AERMOD Uncertainty: Impact of Temporal- and Spatial-Aggregation of On-Road Operating Conditions on Emissions and Dispersion Modeling
Hongyu Lu, Georgia Institute of Technology

Breakout Session H: Exposures and Health Effects

12:00 p.m.–1:15 p.m. (CDT)

Moderator: Mary Fox, Johns Hopkins University

Presentations: *Presenting authors ONLY are listed*

1. Investigating Health Effects of Various Particulate Matter on Mice by Using Animal Exposure Chambers
Qi Li, University of California, Riverside
2. Ambient Near-Road Mobile Source Air Toxics Concentrations in the United States: 2016–2018
Olivia Ryder, Sonoma Technology, Inc.
3. Benzene Exposure and Cancer Risk from Commercial Gasoline Station Fueling Events Using a Novel Self-Sampling Protocol
Andrew Patton, Johns Hopkins University's Bloomberg School of Public Health
4. The Impact of Roadside Structures on Near-Road Air Quality
Ranga Rajan Thiruvenkatachari, University of California, Riverside

Break

1:15 p.m.–1:30 p.m. (CDT)

Plenary Session: Building Back Better — New Directions for Transportation and Health after the Global Pandemic

1:30 p.m.–3:00 p.m. (CDT)

The plenary session will feature presentations from **Larry Frank** of the University of California, San Diego, **Alberto Ayala** of the Sacramento Metropolitan Air Quality Management District, and **Carter Blakey** of the U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion. The session will be moderated by **Joe Zietsman** of the Texas A&M Transportation Institute and Center for Advancing Research in Transportation Emissions, Energy, and Health.

Moderator: **Joe Zietsman**, Texas A&M Transportation Institute and Center for Advancing Research in Transportation Emissions, Energy, and Health

Presentations: *Presenting authors ONLY are listed*

1. Two Pandemics for the Price of One: Chronic and Infectious Disease Impacts of the Built and Natural Environment
Larry Frank, University of California San Diego
2. Advancing Future Mobility, Clean Air, and Climate Actions in the California Capital Region
Alberto Ayala, Sacramento Metropolitan Air Quality Management District
3. Pathway to Better Health for All: Connecting Healthy People 2030 and Transportation Policy
Carter Blakey, U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion

Closing Remarks and Student Awards

3:00 p.m.–3:30 p.m. (CDT)

The closing remarks and student awards will be delivered by **Joe Zietsman** of the Texas A&M Transportation Institute and Center for Advancing Research in Transportation Emissions, Energy, and Health, and **Matt Barth** of the University of California, Riverside.

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#RoadToCleanAir and the **#RoadToHealth!**

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