CARTEEH

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

Transportation, Air Quality, and Health Symposium

February 18–20, 2019 | Austin, Texas

Texas A&M Transportation Institute | Georgia Tech College of Engineering | Johns Hopkins Bloomberg School of Public Health | College of Engineering | UC Riverside CE-CERT

Monday, February 18, 2019 — Pre-conference Day

Registration Desk Open

12:00 noon–6:00 p.m.

Workshop 1: Beyond Air Quality — The Wider Impacts of Transportation on Health

1:30 p.m.–3:00 p.m.	**Part 1**	**South Park A**
3:00 p.m.–3:30 p.m.	**Break**	
3:30 p.m.–5:00 p.m.	**Part 2**	**South Park A**

This two-part workshop discusses transportation and health linkages beyond air quality. Part 1 of the workshop includes four presentations, and Part 2 involves a facilitated discussion and brainstorming of research needs in the broader transportation and health space.

Facilitator: **Haneen Khreis**, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

Presentations:

1. Investigation of the Transport–Health Links: An Observational Study from the United Arab Emirates
   ***Ghassan Abu-Lebdeh**, American University of Sharjah*
   ***Mohamed AlQahtani**, American University of Sharjah*

2. A Smart Growth Livability Framework and Calculator for Measuring, Understanding, and Realizing Sustainability, Health, and Equity
   ***Bruce Appleyard**, San Diego State University*

3. Interdependencies Between Transport Planning, Urban Planning, and Health
   ***Karin Menges**, Technische Universität Darmstadt*
   ***Manfred Boltze**, Technische Universität Darmstadt*

4. Monetizing Health Impacts of the Built and Natural Environment: Matching Health Care Utilization and Cost with Land Use, Greenspace, and Regional Accessibility
   ***Lawrence Frank**, University of British Columbia*
   ***Andy Hong**, University of Oxford*

Workshop 2: Data for Transportation, Air Quality, and Health Research

1:30 p.m.–3:00 p.m. South Park B

In this workshop, three presentations will be followed by a facilitated discussion of data needs, gaps, and data management best practices to support cross-disciplinary research on transportation, air quality, and health.

Facilitator: Ann Xu, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

Presentations:

1. Developing a Transportation, Emissions, and Health Data Hub
   ***Dan Seedah**, Texas A&M Transportation Institute*
   ***Andrew Birt**, Texas A&M Transportation Institute*

2. Data Needs for Updating and Improving the U.S. Environmental Protection Agency's NONROAD Model
   ***Phil Lewis**, Texas A&M University*
   ***Carl Fulper**, U.S. Environmental Protection Agency*
   ***Sarah Roberts**, U.S. Environmental Protection Agency*
   ***Jeremy Johnson**, Texas A&M Transportation Institute*
   ***Reza Farzaneh**, Texas A&M Transportation Institute*

3. Using National Traffic Datasets for Emissions and Noise Modeling
   ***Scott Boone**, Cambridge Systematics*
   ***Richard Margiotta**, Cambridge Systematics*
   ***Aldo Tudela Rivadeneyra**, Cambridge Systematics*
   ***Christopher Porter**, Cambridge Systematics*
   ***John Koupal**, ERG*
   ***Roger Wayson**, AECOM*
   ***David Kall**, Federal Highway Administration*

Break

3:00 p.m.–3:30 p.m.

Workshop 3: Freight, Air Quality, and Occupational Health

3:30 p.m.–5:00 p.m. South Park B

In this workshop, three presentations will be followed by a facilitated discussion of various facets of freight/heavy-duty vehicles, as well as occupational health issues and in-cab exposure for heavy-duty vehicle drivers. Participants will brainstorm research needs as they relate to unique aspects of freight and heavy-duty vehicle operations.

Facilitator: **Tara Ramani**, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

Presentations:

1. Oversize/Overweight Heavy-Duty Vehicle Emissions Impact Study
   ***Chris Klaus**, North Central Texas Council of Governments*
   ***Jason Brown**, North Central Texas Council of Governments*

2. Truck Driver Wellness Pilot Study
   ***Reza Farzaneh**, Texas A&M Transportation Institute*
   ***Teresa Penbrooke**, GreenPlay, LLC*
   ***Joe Zietsman**, Texas A&M Transportation Institute*

3. Assessing In-Cab Air Quality for Construction Equipment
   ***Phil Lewis**, Texas A&M University*
   ***Sherif El Khouly**, Texas A&M University*
   ***Andrea Strzelec**, Mississippi State University*
   ***Jeremy Johnson**, Texas A&M Transportation Institute*
   ***Adam Mayer**, Texas A&M Transportation Institute*

Dine Around Austin

6:30 p.m. Meet in Hotel Lobby

Experience the local flavor and get to know your fellow conference attendees. (Dinner cost on your own.)

Tuesday, February 19, 2019 — Conference Day One

Registration Desk Open

7:30 a.m.–5:00 p.m.

Continental Breakfast

7:30 a.m.–8:30 a.m.

Welcome and Opening Remarks

8:30 a.m.–9:00 a.m. **Ballroom DEF**

The welcome and opening remarks will be delivered by **Joe Zietsman**, director of the Center for Advancing Research in Transportation Emissions, Energy, and Health; and **Greg Winfree**, the Texas A&M Transportation Institute's agency director.

Keynote Session

9:00 a.m.–10:30 a.m. **Ballroom DEF**

The keynote session will feature remarks from **Daniel Greenbaum** of the Health Effects Institute and **Neil Pedersen** of the Transportation Research Board, and a facilitated discussion moderated by **Katie Turnbull** of the Texas A&M Transportation Institute.

Break

10:30 a.m.–11:00 a.m.

Plenary Session: Setting the Stage — From Transportation Emissions to Health Effects

11:00 a.m.–12:15 p.m. **Ballroom DEF**

The plenary session will feature presentations from **Christopher Frey** of North Carolina State University, **Bakeyah Nelson** of Air Alliance Houston, and **Oliver Gao** of Cornell University. The session will be facilitated by **Thomas Burke** of Johns Hopkins Bloomberg School of Public Health.

Presentations:

1. Trends in On-Road Transportation Energy and Emissions
   ***Christopher Frey**, North Carolina State University*
2. Transportation, Environmental Justice, and Health
   ***Bakeyah Nelson**, Air Alliance Houston*
3. Systems Integration of Transportation, Environment, and Health Planning: Models, Tools, and Insights
   ***Oliver Gao**, Cornell University*

Lunch and Networking

12:15 p.m.–1:15 p.m. Ballroom DEF

Lunch buffet and networking.

Special Discussion Sessions

These sessions will feature presentations on themes of interest to practitioners and the public, followed by facilitated discussion of what stakeholders can do to work together and advance health in transportation and city planning.

Special Discussion Session 1: Partnerships and Collaborations for Transportation and Health

1:15 p.m.–2:30 p.m. South Park AB

Facilitator: Rob McConnell, *University of Southern California*

Presentations:

1. Heavy-Duty Diesel Vehicle Collaborations and Partnerships and Air Quality Projects
   ***Chris Klaus**, North Central Texas Council of Governments*
   ***Jason Brown**, North Central Texas Council of Governments*
2. City Partnerships Toward Local Transportation–Air Quality Nexus
   ***James McGuire**, City of Dallas*
3. U.S. Environmental Protection Agency Cooperative Research and Development Partnerships
   ***Sarah Roberts**, U.S. Environmental Protection Agency*

Special Discussion Session 2: Schools, Childhood Asthma, and Interventions

1:15 p.m.–2:30 p.m. **Ballroom C**

Facilitator: Kathy Jack, *The Nature Conservancy*

Presentations:

1. Asthma 411: A Collaboration to Enhance School Health Services and Integrate School, Transportation, and Air Quality Data to Reduce the Impact of Asthma at School
   ***Leslie Allsopp**, University of North Texas, School of Public Health, Department of Biostatistics and Epidemiology, Health Science Center*
   ***David A. Sterling**, University of North Texas, School of Public Health, Department of Biostatistics and Epidemiology, Health Science Center*
   ***Subhash Aryal**, University of North Texas, School of Public Health, Department of Biostatistics and Epidemiology, Health Science Center, SaferCare Texas*

2. Breathe Easy Dallas: Measuring the Impact of School-Based Interventions on Air Quality and Daily Asthma Exacerbations at High-Risk Schools
   ***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Kathy Jack**, The Nature Conservancy*
   ***Suriya Vallamsundar**, Texas A&M Transportation Institute*
   ***Bahar Dadashova**, Texas A&M Transportation Institute*
   ***Jeremy Johnson**, Texas A&M Transportation Institute*

3. Assessment of Asthma Control Questionnaire as a Metric for Children's Traffic Air Pollution Exposures at Two Roadside El Paso Elementary Schools
   ***Amit Raysoni**, The University of Texas Rio Grande Valley*
   ***Soyoung Jeon**, The University of Texas at El Paso*
   ***Juan Aguilera**, The University of Texas at El Paso*
   ***Wen-Whai Li**, The University of Texas at El Paso*

Special Discussion Session 3: Health in Transportation Planning and Project Development

1:15 p.m.–2:30 p.m. **Ballroom DEF**

Facilitator: Cecilia Ho, *Federal Highway Administration*

Presentations:

1. Making Healthy Connections Framework: Safe, Multimodal, and Community Considerations in Corridor Planning
   ***Victoria Martinez**, Federal Highway Administration*

2. Incorporating Health Impacts in Transportation Project Decision Making
   ***Eleni Christofa**, University of Massachusetts Amherst*
   ***Aikaterini Deliali**, University of Massachusetts Amherst*
   ***Sarah Esenther**, Yale University*
   ***Christine Frisard**, University of Massachusetts Medical School*
   ***Karin Valentine Goins**, University of Massachusetts Medical School*
   ***Stephenie Lemon**, University of Massachusetts Medical School*
   ***Mitchell Page**, University of Massachusetts Amherst*
   ***Krystal Pollitt**, Yale University*
   ***Elliot Sperling**, Massachusetts Department of Transportation*

3. Healthy Regions
   ***Kelly Porter**, Capital Area Metropolitan Planning Organization*

Poster Session 1

2:30 p.m.–3:30 p.m. Lower Foyer

Presentations:

1. Quantifying Light-Duty Vehicles' Emissions to $PM_{2.5}$ and PM_{10} Focusing on Platinum Group Metals: Yearlong Measurements at a Near-Highway Elementary School in Houston
   ***Sourav Das**, Texas A&M University*
   ***Shankar Chellam**, Texas A&M University*

2. Greenhouse Gas Emissions Analysis of Regional Transportation Plans with the U.S. Environmental Protection Agency's MOVES Model: Experience with the Fairbanks Metropolitan Planning Organization in Alaska
   ***Ming Lee**, Florida International University, Civil and Environmental Engineering*

3. An Advanced Modal-Based Modeling Approach for Estimating the Energy Consumption of Electric Vehicle Subfleets in Large-Scale Transportation Networks
   ***Xiaodan Xu**, Georgia Institute of Technology*
   ***H. M. Abdul Aziz**, Oak Ridge National Laboratory*
   ***Haobing Liu**, Georgia Institute of Technology*
   ***Michael Rodgers**, Georgia Institute of Technology*
   ***Randall Guensler**, Georgia Institute of Technology*

4. A Comparative Study of a Multimodal Second-Generation Biomass Biofuel Supply Chain
   ***Seyed Ali Haji Esmaeili**, North Dakota State University, College of Business, Department of Transportation, Logistics, and Finance*
   ***Joseph Szmerekovsky**, North Dakota State University, College of Business, Department of Transportation, Logistics, and Finance*
   ***Ahmad Sobhani**, Oakland University, School of Business*

5. Developing a Mesoscopic Energy Consumption Model for Battery Electric Trucks Based on Real-World Driving Data
   ***Chao Wang**, University of California, Riverside*
   ***Peng Hao**, University of California, Riverside*
   ***Kanok Boriboonsomsin**, University of California, Riverside*
   ***Zhiming Gao**, Oak Ridge National Laboratory, National Transportation Research Center*
   ***Matthew Barth**, University of California, Riverside*

6. An Optimization Model to Choose Bus Fleets Under Environmental Constraints: A Case Study
   ***Fangzheng Yuan**, North Dakota State University, Upper Great Plains Transportation Institute*
   ***Yuan Xu**, North Dakota State University, Upper Great Plains Transportation Institute*
   ***Joseph Szmerekovsky**, North Dakota State University, College of Business, Department of Transportation, Logistics, and Finance*

7. Understanding Air Quality Data, Traffic, and Weather Parameters Collected from Near-Road Stations
   ***Ayla Moretti**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Ji Luo**, University of California, Riverside*
   ***Guoyuan Wu**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Brandon Feenstra**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Kanok Boriboonsomsin**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Matthew Barth**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*

8. Traffic-Related Air Pollution Exposures from Border Crossings: Assessing Affected Populations in El Paso, Texas
   ***Inyang Uwak**, Texas A&M Transportation Institute*
   ***Rohit Jaikumar**, Texas A&M Transportation Institute*
   ***Tara Ramani**, Texas A&M Transportation Institute*
   ***Amber Trueblood**, Texas A&M Transportation Institute*
   ***Suriya Vallamsundar**, Texas A&M Transportation Institute*
   ***Natalie Johnson**, Texas A&M University*
   ***Joe Zietsman**, Texas A&M Transportation Institute*

9. The Effect of Re-suspended Dust Emissions on Near-Road Traffic-Related Air Pollution
   ***Mohammad Hashem Askariyeh**, Texas A&M Transportation Institute*
   ***Madhusudhan Venugopal**, Texas A&M Transportation Institute*
   ***Richard Baldauf**, U.S. Environmental Protection Agency*
   ***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Suriya Vallamsundar**, Texas A&M Transportation Institute*
   ***Reza Farzaneh**, Texas A&M Transportation Institute*
   ***Andrew Birt**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Joe Zietsman**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

10. Transforming Our Cities: Best Practices Toward Clean Air and Active Transportation
    ***Andrew Glazener**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
    ***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

11. The Environmental Justice Case for Congestion Pricing
    ***Austin Stanion**, University of California, Los Angeles Luskin*

12. Intercomparison of Purple Air® Particulate Matter Sensors with a GRIMM® Optical Particulate Matter Sensor
    ***Alex Samoylov**, Georgia Institute of Technology*
    ***Kumar Rajarshi**, Georgia Institute of Technology*
    ***Michael Rodgers**, Georgia Institute of Technology*
    ***Kaitlyn Schaffer**, Georgia Institute of Technology*

13. Oxidative Potential of Diesel Exhaust Particles: Role of Fuel, Engine Load, and Emissions Control
    ***Shantanu Jathar**, Colorado State University*
    ***Naman Sharma**, Colorado State University*
    ***Cody Vanderheyden**, Colorado State University*
    ***Kevin Klunder**, Colorado State University*
    ***Charles Henry**, Colorado State University*
    ***John Volckens**, Colorado State University*

Break

3:30 p.m.–3:45 p.m.

Breakout Sessions

Breakout Session A: Active Travel, Micro-environments, and Exposure Assessment

3:45 p.m.–5:15 p.m. South Park AB

Facilitator: **Kirsten Koehler**, *Johns Hopkins University*

Presentations:

1. Influence of Bike Infrastructure on Cyclist Air Pollution Exposure
   ***April Gadsby**, Georgia Institute of Technology*
   ***Kaitlyn Schaffer**, Georgia Institute of Technology*
   ***Nic Alton**, Georgia Institute of Technology*
   ***Kari Watkins**, Georgia Institute of Technology*
   ***Christopher Le Dantec**, Georgia Institute of Technology*

2. Consideration of Exposure to Traffic-Related Air Pollution in Bicycle Route Planning
   ***Ji Luo**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Kanok Boriboonsomsin**, University of California, Riverside*
   ***Matthew Barth**, University of California, Riverside*

3. Multipollutant Analysis of Traffic and Other Micro-environmental Exposures
   ***Kirsten Koehler**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Nicholas Good**, Colorado State University*
   ***Ander Wilson**, Colorado State University*
   ***Anna Molter**, University of Manchester*
   ***Brianna Moore**, Colorado State University*
   ***Taylor Carpenter**, Colorado State University*
   ***Jennifer Peel**, Colorado State University*
   ***John Volckens**, Colorado State University*

4. Maternal Exposure to $PM_{2.5}$ in South Texas: A Pilot Study
   ***Misti Levy Zamora**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Jairus Pulczinski**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Natalie Johnson**, Texas A&M University, School of Public Health*
   ***Rosa Garcia-Hernandez**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Ana Rule**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Genny Carrillo**, Texas A&M University, School of Public Health*
   ***Joe Zietsman**, Texas A&M Transportation Institute*
   ***Brenda Sandragorsian**, Texas A&M University, School of Public Health*
   ***Suriya Vallamsundar**, Texas A&M Transportation Institute*
   ***Mohammad Askariyeh**, Texas A&M Transportation Institute*
   ***Kristen Koehler**, Johns Hopkins University, Bloomberg School of Public Health*

Breakout Session B: Advances in Air Pollution Monitoring, and Modeling and Application in Health Studies

3:45 p.m.–5:15 p.m. **Ballroom C**

Facilitator: **Chad Bailey**, *U.S. Environmental Protection Agency*

Presentations:

1. New Applications in the Use of Satellite Data Monitoring of Air Quality for Population Health, Exposure Risk Estimation, and Public Outreach
   ***Susan Alexander**, University of Alabama in Huntsville*
   ***Michael Newchurch**, University of Alabama in Huntsville*
   ***Aaron Naeger**, University of Alabama in Huntsville*
   ***David Klubert**, Apogee Informatics*

2. Development of an Internet-of-Things–Enabled, On-Road, Traffic-Related, Air Pollution Monitoring Laboratory with Real-Time Computer-Vision-Based Vehicle Counter
   ***Asanga Wijesinghe**, Houston Advanced Research Center*
   ***Mustapha Beydoun**, Houston Advanced Research Center*
   ***John Colvin**, Houston Advanced Research Center*

3. Assessing the Sensitivity of Modeled Near-Road Air Quality to Traffic Data in Six Neighborhoods in Salt Lake County, Utah
   ***Chad Bailey**, U.S. Environmental Protection Agency*
   ***Daniel Mendoza**, University of Utah*

4. Monte-Carlo Analysis to Inform Mobile Monitoring for Spatial-Temporal Regression Models of Particle Number Concentration near a Highway
   ***Allison Patton**, Health Effects Institute*
   ***John Durant**, Tufts University*
   ***Elena Naumova**, Tufts University*

Breakout Session C: Characterizing Traffic-Related Air Pollution

3:45 p.m.–5:15 p.m. Ballroom DEF

Facilitator: Andrew Hoekzema, *Capital Area Council of Governments*

Presentations:

1. Near-Road Monitoring Data Assessment: Impact of Traffic, Meteorology, and Background Concentration
   ***Suriya Vallamsundar**, Texas A&M Transportation Institute*
   ***Mohammad Askariyeh**, Texas A&M Transportation Institute*
   ***Reza Farzaneh**, Texas A&M Transportation Institute*
   ***Madhusudhan Venugopal**, Texas A&M Transportation Institute*
   ***Wen-Whai Li**, The University of Texas at El Paso*

2. Near-Road Human Exposure Assessment Using an Agent-Based Traffic Simulator and a Computational Fluid Dynamics Street-Canyon Model
   ***Aron Jazcilevich**, Universidad Nacional Autónoma de México, Centro de Ciencias de la Atmósfera*
   ***Juan de la Cruz Zavala**, Universidad Nacional Autónoma de México, Centro de Ciencias de la Atmósfera*
   ***Ivan Y. Hernandez**, CONACYT-Consorcio CENTROMET*
   ***Adolfo Hernandez**, Universidad Nacional Autónoma de México, Centro de Ciencias de la Atmósfera*
   ***Ulises Diego Ayala**, Escola Universitària Salesiana de Sarrià*
   ***Irma Rosas**, Universidad Nacional Autónoma de México, Centro de Ciencias de la Atmósfera*

3. Implications of Elevated Gasoline Sulfur Content on Air Quality in Central Texas and Beyond
   ***Andrew Hoekzema**, Capital Area Council of Governments*
   ***Sandeep Kishan**, Eastern Research Group*
   ***Allison DenBleyker**, Eastern Research Group*
   ***Christiane Alepuz**, Capital Area Council of Governments*

4. Measuring the Spatio-temporal Distribution of Pollution (NO_2, O_3, CH_2O, SO_2, and Aerosols/Particulate Matter) with Tropospheric Emissions: Monitoring of Pollution Geostationary Satellite Observations and Ground-Based Tropospheric Ozone Lidar Network Ozone/Aerosol Differential Absorption Lidar
   ***Mike Newchurch**, University of Alabama in Huntsville*
   ***Kelly Chance**, Smithsonian Astrophysical Observatory*
   ***Shi Kuang**, University of Alabama in Huntsville*
   ***Aaron Naeger**, University of Alabama in Huntsville*
   ***Susan Alexander**, University of Alabama in Huntsville*

Breakout Session D: Air Pollution and the Burden of Disease

5:15 p.m.–6:30 p.m. Ballroom DEF

Facilitator: Kenneth Davidson, *U.S. Environmental Protection Agency*

Presentations:

1. Air Pollution and the Burden of Childhood Asthma in the Contiguous United States in 2000 and 2010
   ***Raed Alotaibi**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Mathew Bechle**, University of Washington, Department of Civil and Environmental Engineering*
   ***Julian Marshall**, University of Washington, Department of Civil and Environmental Engineering*
   ***Tara Ramani**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Mark Nieuwenhuijsen**, ISGlobal, Centre for Research in Environmental Epidemiology*
   ***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

2. Ambient and Traffic-Related Air Pollution Exposures as Novel Risk Factors for Metabolic Dysfunction and Type 2 Diabetes
   ***Zhanghua Chen**, University of Southern California*
   ***Frank Gilliland**, University of Southern California*
   ***Thomas Buchanan**, University of Southern California*
   ***Anny Xiang**, University of Southern California*
   ***Richard Watanabe**, University of Southern California*
   ***Rob McConnell**, University of Southern California*
   ***Carrie Breton**, University of Southern California*
   ***Ed Avol**, University of Southern California*
   ***Leda Chatzi**, University of Southern California*
   ***Megan Herting**, University of Southern California*
   ***Kiros Berhane**, University of Southern California*
   ***Duncan Thomas**, University of Southern California*
   ***Britni Belcher**, University of Southern California*
   ***Tanya Alderete**, University of Southern California*
   ***Claudia Toledo-Corral**, University of Southern California*
   ***Jeniffer Kim**, University of Southern California*
   ***Rima Habre**, University of Southern California*
   ***Theresa Bastain**, University of Southern California*
   ***John Wilson**, University of Southern California*
   ***Elizabeth Hauser**, Duke University*
   ***Christopher Newgard**, Duke University*
   ***Olga Ilkayeva**, Duke University*
   ***Dean Jones**, Emory University*
   ***Douglas Walker**, Emory University*
   ***Fred Lurmann**, Sonoma Technology, Inc.*

3. Mobile Source Contributions to Ambient Concentrations of Pollution, Attributable Health Burden, and Monetized Health-Benefit-per-Ton Values in the United States in 2025
   ***Kenneth Davidson**, U.S. Environmental Protection Agency*
   ***Margaret Zawacki**, U.S. Environmental Protection Agency*

4. Compact Urban Re-development and Near-Roadway Air Pollution Health Impact Assessment: Identifying Opportunities for Health Co-benefits of Climate Change Mitigation in Southern California
   ***Rob McConnell**, University of Southern California*
   ***Nino Kunzli**, Swiss Tropical and Public Health Institute; University of Basel*

Breakout Session E: Advances in Vehicle Emission Modeling and Monitoring

5:15 p.m.–6:30 p.m. Ballroom C

Facilitator: **Jackie Ploch**, *Texas Department of Transportation*

Presentations:

1. Some Early Findings from Recent Scottish EDAR Vehicle Emissions Studies
   ***Karl Ropkins**, University of Leeds, Institute for Transport Studies*
   ***Drew Hill**, Transport Scotland*

2. Using an On-Road Heavy-Duty Emissions Measurement System for a Heavy-Duty Vehicle Inspection and Maintenance Program
   ***Chris Klaus**, North Central Texas Council of Governments*
   ***Jason Brown**, North Central Texas Council of Governments*

3. Artificial Neural Networks for Emissions Modeling and Environmental Routing for Light-Duty Passenger Vehicles
   ***Shantanu Jathar**, Colorado State University*
   ***Shiva Tarun**, Colorado State University*
   ***Zachary Asher**, Western Michigan University*
   ***Thomas Bradley**, Colorado State University*
   ***Brian Johnston**, Colorado State University*

4. Nonlinear Vehicle Emission Modeling for Urban Areas
   ***Hajar Hajmohammadi**, University College London, Centre for Transport Studies*
   ***Giampiero Marra**, University College London, Department of Statistical Science*
   ***Benjamin Heydecker**, University College London, Centre for Transport Studies*

Breakout Session F: Chemistry, Composition, and Toxicology of Traffic-Related Air Pollution

5:15 p.m.–6:30 p.m. **South Park AB**

Facilitator: **Natalie Johnson**, *Texas A&M University*

Presentations:

1. Elemental Characterization of $PM_{2.5}$ and PM_{10} Emitted by Light-Duty Vehicles: Measurements of Rhodium, Palladium, and Platinum in the Washburn Tunnel
   ***Shankar Chellam**, Texas A&M University, Zachry Department of Civil Engineering*

2. Quantum Mechanical Modeling of Soot, Pyrene, and Benzo[a]pyrene
   ***James Kubicki**, The University of Texas at El Paso*

3. A Mouse Model of In-Utero Ultrafine Particulate Matter Exposure and Infant Respiratory Syncytial Virus Disease
   ***Natalie Johnson**, Texas A&M University*
   ***Carmen Lau**, Texas A&M University*
   ***Dennis Garcia-Rhodes**, Texas A&M University*
   ***Drew Pendleton**, Texas A&M University*
   ***Alexandra Myers**, Texas A&M University*
   ***Jeremiah Secrest**, Texas A&M University*
   ***Yixin Li**, Texas A&M University*
   ***Tiffanie Vargas**, Texas A&M University*
   ***Renyi Zhang**, Texas A&M University*
   ***Aline Rodrigues Hoffmann**, Texas A&M University*

4. Tracking Epitranscriptomics Modifications to Understand Early Health Effects of Oxidative-Prone Air
   ***Lydia Contreras**, The University of Texas at Austin*
   ***Juan Gonzalez-Rivera**, The University of Texas at Austin*
   ***Kevin Baldridge**, The University of Texas at Austin*
   ***Dongyu Wang**, The University of Texas at Austin*
   ***Jamie Chuvalo-Abraham**, The University of Texas at Austin*
   ***Lea Hildebrandt Ruiz**, The University of Texas at Austin*

Poster Session 2 and Networking Reception

6:30 p.m.–7:30 p.m. **Lower Foyer**

Presentations:

1. Health Canada's Assessment of Traffic-Related Air Pollution: Exposure, Health Effects, and Population Health Impacts
   ***Mathieu Rouleau**, Health Canada, Fuels Assessment Section*

2. Leukemia Risk Assessment Approximation from Commercial Gasoline Station Benzene Exposures
Andrew Patton, *Johns Hopkins University, Bloomberg School of Public Health*
Kirsten Koehler, *Johns Hopkins University, Bloomberg School of Public Health*
Mary Fox, *Johns Hopkins University, Bloomberg School of Public Health*
Misti Zamora, *Johns Hopkins University, Bloomberg School of Public Health*

3. Characterization of Construction Equipment In-Cab Pollutants
Sherif El Khouly, *Texas A&M University*
Phil Lewis, *Texas A&M University*

4. Mobility and Public Health: A Conceptual Model and Literature Review
Andrew Glazener, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Tara Ramani, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Joe Zietsman, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Mark Nieuwenhuijsen, *ISGlobal, Centre for Research in Environmental Epidemiology*
Karen Lucas, *University of Leeds, Institute for Transport Studies*
Jennifer Mindell, *University College London, Department of Epidemiology and Public Health*
Haneen Khreis, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

5. Developing and Analyzing a Literature Library on Traffic Emissions, Air Pollution, Exposures, and Health
Kristen Sanchez, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Tara Ramani, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Joe Zietsman, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Mark Nieuwenhuijsen, *ISGlobal, Centre for Research in Environmental Epidemiology*
Haneen Khreis, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

6. Application of the Navigation Guide Systematic Review Methodology to Evaluate the Association Between Prenatal Particulate Matter Air Pollution Exposure and Birth Weight
Natalie Johnson, *Texas A&M University*
Inyang Uwak, *Texas A&M Transportation Institute*
Juleen Lam, *California State University, East Bay*
Xiaohui Xu, *Texas A&M University*
Brandy Taylor, *Temple University*
Margaret Foster, *Texas A&M University*
Megan Moriarty, *Texas A&M University*
Samuel Taiwo, *Texas A&M University*
Angelica Fuentes, *Texas A&M University*
Natalie Olson, *Texas A&M University*
Weihsueh Chiu, *Texas A&M University*

7. Conceptualizing Spatial Disparity in Child Health
Amaryllis Park, *Texas A&M University*
Chanam Lee, *Texas A&M University*

8. Active Transportation and Self-Impression of Health: Evidence from 2017 National Household Travel Survey Data
Farinoush Sharifi, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
Reza Farzaneh, *Texas A&M Transportation Institute*
Soheil Sohrabi, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health; Texas A&M University, Zachry Department of Civil Engineering*
Haneen Khreis, *Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

9. An Experimental Study of Range-Hood Performance Metrics to Support Energy Savings and Improve Indoor Air Quality
Sammy Meleika, *Texas A&M University*
James Sweeney, *Texas A&M University*
Michael Pate, *Texas A&M University*

10. Using the 13C/12C Carbon Isotope Ratio to Characterize the Emission Sources of Airborne Particulate Matter: A Review of Literature
Juan Aguilera, *The University of Texas at El Paso*
Leah D. Whigham, *Paso del Norte Institute for Healthy Living*

11. Determination of the Optimal Sample Size for a Limited Longitudinal Cohort Study of Children's Respiratory Health and Air Quality
Soyoung Jeon, *The University of Texas at El Paso, Department of Mathematical Sciences*
Joan Staniswalis, *The University of Texas at El Paso, Department of Mathematical Sciences*
Amit Raysoni, *The University of Texas at Rio Grande Valley, School of Earth, Environment, and Marine Sciences*
Wen-Whai Li, *The University of Texas at El Paso*

12. Assessing the Health Impact of Transportation Systems: A Burden of Disease Analysis
***Soheil Sohrabi**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health; Texas A&M University, Zachry Department of Civil Engineering*
***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

13. Developing an Enhanced Street Smart Walk Score for Health Research
***Bruce Appleyard**, San Diego State University*
***Lawrence Frank**, University of British Columbia*

Wednesday, February 20, 2019 — Conference Day Two

Registration Desk Open

7:30 a.m.–10:00 a.m.

Continental Breakfast

7:30 a.m.–8:30 a.m.

Breakout Sessions

Breakout Session G: Influencing Policy Making and Regulations

8:30 a.m.–9:45 a.m. **South Park AB**

Facilitator: **Tara Ramani**, *Texas A&M Transportation Institute*

Presentations:

1. The Fuels Assessment Section of Health Canada: Transportation, Air Pollution, and Human Health
***Mathieu Rouleau**, Health Canada, Fuels Assessment Section*

2. Smart Growth for Dallas: Using Data and Geographic Information System Mapping for a Greener, Healthier, More Resilient City
***Molly Plummer**, Trust for Public Land*

3. It's All Connected: Using an Air Quality Health Assessment of a Freeway Expansion Project in Houston as the Basis for Developing Mitigation Recommendations Benefiting Multiple Environmental Impacts
   ***Adele Houghton**, Biositu, LLC*
   ***Bakeyah Nelson**, Air Alliance Houston*
   ***Corey Williams**, Air Alliance Houston*

Breakout Session H: Cumulative Risk Assessment

8:30 a.m.–9:45 a.m. Ballroom C

Facilitator: **Mary Fox**, *Johns Hopkins Bloomberg School of Public Health*

Presentations:

1. Exploring Transportation-Related Chemical Mixtures and Cumulative Risks
   ***Mary Fox**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Joseph Amoah**, Johns Hopkins University, School of Medicine*
   ***Andrew Patton**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Misti Zamora**, Johns Hopkins University, Bloomberg School of Public Health*
   ***Kristen Koehler**, Johns Hopkins University, Bloomberg School of Public Health*

2. Assessing the Acute Safety Hazard to Highway Transportation from Blowing Dust at Lordsburg Playa, New Mexico
   ***Thomas Gill**, The University of Texas at El Paso*
   ***David Dubois**, New Mexico State University*
   ***Iyasu Eibedingil**, The University of Texas at El Paso*
   ***Jaylen Fuentes**, New Mexico State University*
   ***Lixin Jin**, The University of Texas at El Paso*
   ***Junran Li**, University of Tulsa*
   ***Marcos Mendez**, The University of Texas at El Paso*
   ***John Tatarko**, U.S. Department of Agriculture, Agricultural Research Service*
   ***R. Scott Van Pelt**, U.S. Department of Agriculture, Agricultural Research Service*
   ***Nicholas Webb**, U.S. Department of Agriculture, Agricultural Research Service*

3. Assessment of the Joint Effects of Traffic-Related Noise, Air Pollution, and Green Space on Children's Stress
   ***Rebecca Lee**, University of Southern California, Department of Preventive Medicine*
   ***Meredith Franklin**, University of Southern California, Department of Preventive Medicine*
   ***Scott Fruin**, University of Southern California, Department of Preventive Medicine*
   ***Robert Urman**, University of Southern California, Department of Preventive Medicine*
   ***Rob McConnell**, University of Southern California, Department of Preventive Medicine*

4. Relationship Between Physical Activity, Fruits and Vegetables, and Air Quality in Children with Asthma
   ***Juan Aguilera**, The University of Texas at El Paso*
   ***David Perez**, The University of Texas at El Paso*
   ***Alisha Redelfs**, The University of Texas at El Paso*
   ***Soyoung Jeon**, The University of Texas at El Paso*
   ***Amit Raysoni**, The University of Texas Rio Grande Valley, School of Earth, Environment, and Marine Sciences*
   ***Wen-Whai Li**, The University of Texas at El Paso*
   ***Leah D. Whigham**, Paso del Norte Institute for Healthy Living*

Breakout Session I: Local Issues, Interventions, and Public Awareness

8:30 a.m.–9:45 a.m. Ballroom DEF

Facilitator: Kristen Sanchez, *Texas A&M Transportation Institute*

Presentations:

1. A Closer Look at Transportation and Health in Houston
   ***Kai Zhang**, The University of Texas Health Science Center at Houston*

2. Air Quality Awareness in the Big City: Breathe Today — SA Tomorrow
   ***Julia Murphy**, City of San Antonio*

3. Assessing the Contribution of Traffic Emissions to Near-Road $PM_{2.5}$ Pollution Using Concentrations Observed at Near-Road and Urban-Scale Background Air Monitors
   ***Wen-Whai Li**, The University of Texas at El Paso, Department of Civil Engineering*
   ***Mayra Chavez**, The University of Texas at El Paso, Department of Civil Engineering*
   ***Soyoung Jeon**, The University of Texas at El Paso, Department of Mathematical Sciences*
   ***Ivan Ramirez**, The University of Texas at El Paso, Department of Civil Engineering*

4. How Urban Green Infrastructure Can Affect Air Pollution and Health
   ***Richard Baldauf**, U.S. Environmental Protection Agency*

Break

9:45 a.m.–10:15 a.m.

Breakout Session J: Sensors' Evaluations and Applications

10:15 a.m.–11:30 a.m. **South Park AB**

Facilitator: **Michael Rodgers**, *Georgia Institute of Technology*

Presentations:

1. Feasibility of Low-Cost Air Quality Sensors for Mobile Emissions Analysis
   ***Nic Alton**, Georgia Institute of Technology*
   ***Saumik Narayanan**, University of Minnesota*
   ***April Gadsby**, Georgia Institute of Technology*
   ***Christopher Le Dantec**, Georgia Institute of Technology*
   ***Kari Watkins**, Georgia Institute of Technology*

2. Application of Dust Aerosol Spectrometer for In-Cabin PM Exposure of Paratransit Transport
   ***Kaitlyn Schaffer**, Georgia Institute of Technology*
   ***Michael Rodgers**, Georgia Institute of Technology*
   ***Alex Samoylov**, Georgia Institute of Technology*
   ***Kumar Rajarshi**, Georgia Institute of Technology*

3. Performance Evaluation of Low-Cost Air Quality Sensors at Near-Road Air Quality Monitoring Stations
   ***Ji Luo**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Ayla Moretti**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Guoyuan Wu**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Brandon Feenstra**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Kanok Boriboonsomsin**, University of California, Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*
   ***Matthew Barth**, University of California Riverside, Department of Chemical and Environmental Engineering, Center for Environmental Research and Technology*

4. Using Machine Learning to Calibrate Low-Cost Laser-Based Observations of Airborne Particulates
   ***Lakitha Wijeratne**, The University of Texas at Dallas*
   ***David Lary**, The University of Texas at Dallas*

Breakout Session K: Health Effects of Air Pollution

10:15 a.m.–11:30 a.m. **Ballroom C**

Facilitator: **Wen-Whai Li**, *The University of Texas at El Paso, Department of Civil Engineering*

Presentations:

1. Short-Term Effects of Urban Traffic-Related Air Pollution on Blood Pressure
   ***Neelakshi Hudda**, Tufts University*
   ***Misha Eliasziw**, Tufts University*
   ***Wig Zamore**, Somerville Transportation Equity Partnership*
   ***Ellin Reisner**, Somerville Transportation Equity Partnership*
   ***John Durant**, Tufts University*
   ***Doug Brugge**, Tufts University*

2. Near-Highway Criteria Pollutant Concentrations Are Weakly Associated with Adverse Respiratory Symptoms for Asthmatic Children Attending Roadside Schools
   ***Wen-Whai Li**, The University of Texas at El Paso, Department of Civil Engineering*
   ***Soyoung Jeon**, The University of Texas at El Paso*
   ***Amit Raysoni**, The University of Texas Rio Grande Valley, School of Earth, Environment, and Marine Sciences*
   ***Leah Whigham**, Paso del Norte Institute for Healthy Living*

3. Examining Spatially Varying Relationships Between Preterm Births and Ambient Air Pollution in Georgia Using Geographically Weighted Logistic Regression
   ***Jun Tu**, Kennesaw State University*

4. Cumulative Impact of Traffic-Related Air Pollution Regulations on Infant Health Outcomes
   ***Mary Willis**, Oregon State University*
   ***Perry Hystad**, Oregon State University*

Breakout Session L: Impact of Technologies

10:15 a.m.–11:30 a.m. Ballroom DEF

Facilitator: Kanok Boriboonsomsin, *University of California, Riverside*

Presentations:

1. Beyond Safety: Utilizing Strategic Highway Research Program 2 Naturalistic Driving Study Data to Model Emissions from Passenger Vehicles at Project Level for Different Work Zone Configurations
   ***Georges Bou-Saab**, Iowa State University*
   ***Shauna Hallmark**, Iowa State University*
   ***Omar Smadi**, Iowa State University*

2. An Overview of the University of California, Riverside's Research on Secondary Organic Aerosol (SOA) Production from Mobile Sources: Discussions on the Effects of High-Speed Driving Conditions on SOA Formation Potential from GDI Vehicles
   ***Georgios Karavalakis**, University of California, Riverside*
   ***Niina Kuittinen**, Tampere University of Technology*
   ***Cavan McCaffery**, University of California, Riverside*
   ***Stephen Zimmerman**, University of California, Riverside*
   ***Weihan Peng**, University of California, Riverside*
   ***Patrick Roth**, University of California, Riverside*
   ***Roya Bahreini**, University of California, Riverside*
   ***David Cocker**, University of California, Riverside*
   ***Topi Rönkkö**, Tampere University of Technology*
   ***Jorma Keskinen**, Tampere University of Technology*

3. Use of Connected Vehicle Technology to Reduce Human Exposure to Traffic-Related Air Pollutants
   ***Kanok Boriboonsomsin**, University of California, Riverside*
   ***Ji Luo**, University of California, Riverside*
   ***Chao Wang**, University of California, Riverside*
   ***Matthew Barth**, University of California, Riverside*

4. The Impact of Connected and Autonomous Vehicles on Public Health: A Conceptual Model
   ***Soheil Sohrabi**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health; Texas A&M University, Zachry Department of Civil Engineering*
   ***Farinoush Sharifi**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*
   ***Haneen Khreis**, Texas A&M Transportation Institute, Center for Advancing Research in Transportation Emissions, Energy, and Health*

Closing Plenary: The Way Forward — Health Promotion and the Role of Transportation

11:30 a.m.–12:15 p.m. **Ballroom DEF**

The closing plenary will feature remarks from **Carter Blakey** of the U.S. Department of Health and Human Services and a facilitated discussion moderated by **Joe Zietsman**, director of the Center for Advancing Research in Transportation Emissions, Energy, and Health.

Student Awards

Two student awards will be presented at the closing plenary session**.** The **Best Student Poster** and **Best Student Oral Presentation** awards are sponsored by the Texas A&M Transportation Institute.

NOTES

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Join the conversation!

During the symposium, follow and use **#TAQH19** and **#CARTEEH** on social media to help spread the word and get us on the **#RoadToCleanAir** and the **#RoadToHealth**.

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