

# Transportation & Air Quality Committee (ADC20) of TRB

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## **PLANNING AND ENVIRONMENT GROUP Environment and Energy Section (ADC00)**

### **Standing Committee on Transportation and Air Quality (ADC20) Triennial Strategic Plan (TSP) Update**

April 15, 2013 through April 14, 2015

Submitted by:

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Vice President, Chief Scientist, Transportation Policy and Planning  
Sonoma Technology, Inc. (STI)

Incoming Chair, ADC20 (April 15, 2017-April 15, 2020)

**November 2016**

COMMITTEE NAME AND NUMBER: Transportation and Air Quality (ADC20)

COMMITTEE CHAIRPERSON:

- Jie (Jane) Lin, April 15, 2011-April 15, 2017
- Douglas Eisinger, April 15, 2017-April 15, 2020

TSP Three-Year Period: April 15, 2013 to April 15, 2015

Date Prepared: November 2016

## **I. Committee Future Outlook Statement**

The mission of the Transportation and Air Quality Committee (ADC20) is to provide leadership to identify, stimulate, and disseminate important research related to transportation and air quality. Our scope is to examine the full range of relationships between transportation and air quality including regulatory and policy considerations, modeling practices, health effects, new technologies, and transportation management strategies.

Despite being the focus of regulatory attention for many decades, transportation sources remain a key contributor to microscale (i.e., near-road) and regional air pollution problems, and are one of the most important contributors to greenhouse gas (GHG) emissions. Accordingly, transportation-air quality remains of central interest to practitioners and researchers, as evidenced by the 100-plus paper submissions reviewed annually by ADC20.

Committee work is poised to be affected by several major issues in the coming years. These are identified next and divided into short and long term issues (note that there will likely be cross-over between the two groups).

Short term (one to three years)

1. Ongoing interest in evaluating and improving how well modeled traffic activity, emissions, and air quality, compare to real-world conditions, and how those topics relate to land use.
2. Transformation of the fleet to advanced technologies such as hybrid-electrics, plug-in hybrid electrics, other low or zero emission technologies, and self-driving vehicles.
3. Shifts in driving behavior demographics, evidenced by a reduction in the historic growth rate in per capita vehicle miles traveled (VMT), and assessment of the durability of post-Great Recession trends (e.g., 2006 through 2012) compared to recent data (e.g., 2015 to 2016).
4. Substantially improved U.S. and western-nations' urban air quality, and greater emphasis on residual pollution problems such as those that occur near heavily traveled roads.
5. Recognition, brought into sharp relief by the Volkswagen emissions cheating scandal, of the need to improve identification, assessment, and resolution of discrepancies among real-world vehicle emissions, certification requirements, and emissions modeling forecasts.
6. Availability and development of "big data" resources, analysis methods, and information sharing platforms.

7. Modified gasoline content based on anticipated implementation of Tier 3 sulfur rules.

Long term (four to seven years)

1. Increased need to address climate change mitigation and adaptation, and assess the overlap between climate-related efforts and programs and policies focused on urban air quality.
2. Forecasted growth in goods movement and related increased use of diesel-powered on- and off-road mobile sources such as ships and locomotives.
3. Concern about worsening air pollution problems affecting Asia and selected lesser developed nations.
4. Ongoing U.S. EPA review of the U.S. National Ambient Air Quality Standards (NAAQS), and potential tightening of those standards to reflect emerging health-based findings.
5. Emergence of low-cost technology to monitor air quality, promote "citizen science," and share data in real time via the Internet.
6. Growing concern over health impacts from exposure to as-yet-unregulated (in the United States) traffic-related ultra-fine particles.

For the past several years, ADC20 has included three subcommittees: regional air quality, project-level air quality, and research. This structure remains robust. One planned change is to fold paper review responsibilities under the research subcommittee.

Key statutory and regulatory drivers remain the same as in past years: the need to complete transportation conformity analyses under the U.S. Clean Air Act; the need to fund transportation projects that achieve congestion relief and air quality improvements (the CMAQ program under federal highway legislation); and the need to complete other environmental analyses to comply with the U.S. National Environmental Policy Act.

ADC20 remains a vibrant committee that is at the forefront of several cross-cutting issues. The committee will keep abreast of new regulations and standards that affect transportation and air quality and will focus and adjust the committee's priorities to address changing needs. The committee will continue to ensure that key research needs and critical issues are identified and addressed, engaging other relevant TRB committees in the process.

## **II. Committee Plan**

### ***1. Long-Term and Cross-Cutting Issues:***

- a. The committee has developed the ADC20 *Long Term and Emerging Issues* list (attached). A number of these long-term and emerging issues are cross-cutting in their application. The committee reviews and updates the ADC20 *Long Term and Emerging Issues* list periodically, and we co-sponsor TRB annual and summer sessions with other TRB committees to address these important topics. Currently, the list includes Understanding fine particulate matter pollution from transportation
- b. Quantifying vehicle contributions to primary and secondary mobile source air toxics

- c. Evaluating the sensitivity of MOVES (49 states) and EMFAC (California) input variables and addressing uncertainty in model use
- d. Estimating modal vehicle activity for emissions modeling
- e. Improving PM hot-spot modeling by addressing data needs, model technical requirements, and model performance
- f. Collecting real-world emission rate and vehicle activity data to support ongoing model development
- g. Assessing ambient air quality monitoring data and analysis methods used in air quality designations
- h. Understanding the emissions, impacts, and controls for surface freight transportation
- i. Understanding emissions, impacts, and controls for non-road mobile sources such as marine vessels, locomotive engines, construction equipment, and air transportation
- j. Characterizing and addressing the high-emitter portion of on- and off-road mobile sources
- k. Assisting small urban and rural areas to meet the transportation conformity requirements
- l. Characterizing the emissions and fuel economy of advanced technology vehicles such as hybrids
- m. Identifying the co-benefits of transportation emissions control, air quality mitigation and climate change strategies
- n. Assessing alternative fuels/electric power strategies
- o. Evaluating the future of transportation control measures
- p. Evaluating the health impacts (such as asthma and other respiratory problems) associated with traffic-related emissions
- q. Collecting, mining, and applying resources to address the "Big Data" challenge
- r. Applying intelligent transportation technologies for emissions control and air pollution mitigation
- s. Assessing the benefits of eco-driving and eco-routing
- t. Supporting the implementation of model improvement programs for air quality following the recommendations of the 2007 NRC report "*Models in Environmental Regulatory Decision Making*"; addressing not only the individual traffic/activity, emission, dispersion, and related models but also the overall modeling chain.

## **2. Committee Activity Plans:**

2a) TRB annual meetings: Over the next several years, the committee plans to have sessions at the TRB annual meetings on the following cross-cutting and emerging topics: (1) co-benefits of transportation emissions control, air quality mitigation, and climate change strategies, co-sponsored with the Climate Change and Transportation Energy committees; (2) understanding emissions and control strategies for non-road mobile sources; (3) understanding the emissions impacts of surface freight transportation; (4) assessment of travel activity and fleet demographics; and (5) evaluation methods and needed improvements to best evaluate near-road "hot-spot" air quality problems.

2b) Summer conference: This committee has a summer conference series. The summer conference has typically been held every other year, with the most recent ones taking place in 2014 (Developing Healthy and Livable Communities) and 2016 (The Changing Landscape of Transportation and Air Quality: Confronting the Challenges at the Global, Regional, and Local Scales). A 2018 summer conference will be planned next year. Past conferences have been co-sponsored with the American

Society of Civil Engineers (ASCE); the Transportation & Development Institute (T&DI)'s Planning, Economics and Finance Committee; the Air and Waste Management Association (AWMA); and the Federal Highway Administration (FHWA).

2c) Research needs statements: At recent TRB annual meetings and during follow-up conference calls, the three subcommittees have identified numerous research needs. Examples include:

- Improving Modeling tools and methods to more accurately forecast regional heavy-duty diesel vehicle activity and goods movement
- Optimizing control strategy development to yield co-benefits across criteria pollutant, air toxics, and greenhouse gas emissions reductions
- Evaluating whether SIP Processes need improvements to reflect the importance of background concentration and pollutant transports as NAAQS become more stringent
- Activity data for project-level Air Quality Analysis
- Best Practices for Project-Level Air Quality Analysis
- Comprehensive Review and Assessment of Federal Transportation Conformity Rule
- Validation of the MOVES model for project –level analysis
- Update of the FHWA strategic plan for PM Research

Research needs statements are being continuously developed and entered into the Research Needs Statements (RNS) database and the American Association of State Highway and Transportation Officials (AASHTO) TERI database

(see: [http://environment.transportation.org/teri\\_database/view\\_ideas.aspx?focus\\_filter=1](http://environment.transportation.org/teri_database/view_ideas.aspx?focus_filter=1)). The Committee Research Coordinator (CRC) will work with other TRB Committees and relevant partners to facilitate the funding of research needs through venues such as the Cooperative Research Programs.

The committee is keeping a record of the research ideas generated over the years and will update the list every year during the annual meeting.

2d) Committee website and other online social networking means: The committee has a committee website (<https://www.trbairquality.org/>) and will continue to improve it. In addition, the committee is seeking to use other online social networking tools to have the members and friends stay connected, attract new people, and share information more effectively.

### **3. Interaction with Other TRB Committees and Other Organizations**

The committee interacts with a number of other TRB committees and outside organizations. Attached as **Appendix A** is a list of organizations with which ADC20 has a liaison relationship.

## **III. Committee History**

### 1. Committee Organization and Membership

- Committee chair since April 2011: Jie (Jane) Lin

- Incoming chair effective April 2017: Doug Eisinger
- The subcommittees and chairs: (1) Project-Level Air Quality Analysis Subcommittee: Christopher Voigt; (2) Regional Air Quality Analysis Subcommittee: Doug Eisinger, and (3) Research subcommittee (new since January 2012): Joe Zietsman
- Number of regular members (excluding young and emeritus members) = 30; Young members= 4; and Emeritus members= 3;
- Female = 7; male = 27; African American = 0; Asian or Pacific Islander = 10
- The geographic breakdown of the committee is as follows: North East-7; North West-1; South West -13, South East-5; Central-4; and International-4 (excluding emeritus).
- Professional affiliation is as follows: Academic-14; Government-11; Consultant-5.
- There are 300+ friends of the committee.

## 2. Sponsored and Co-sponsored sessions at TRB annual meetings

Given the high volume of paper submissions, ADC20 has a substantial record of sponsoring and co-sponsoring sessions at the annual research conference. Data are included in **Appendix B** attached.

## **Appendix A: ADC20 Liaison Activities**

The organizations below are those with which ADC20 has established liaison relationships; also shown is a recent listing of individuals serving on behalf of ADC20 in the liaison role.

Transportation Demand Management (Arnie Sherwood)  
Energy and Alternative Fuels (Mike Lawrence)  
Environmental Impacts of Aviation (Roger Wayson)  
Climate Change Subcommittee (Bob Noland)  
Urban Transportation Data and Information Systems (Charles Baber)  
AWMA (Mike Claggett, Jeff Houk and George Schewe)  
Transportation and Land Development (Richard Baldauf)  
Marine and Ports Environmental Task Force (John Koupal)  
International Transportation Issues (Robin North)  
Highway Capacity and Quality of Service (John Byun)  
Transportation Simulation Model Committees (Yi-Chang Chiu)  
ASCE air quality committee (Roger Wayson)  
AASHTO subcommittee on air quality (Tim Sexton)  
Telecommunications (Arnie Sherwood)  
Environmental Analysis in Transportation (Julia Gamas)  
Planning for Small and Medium Sized Communities (Sue Kimbrough)  
Congestion Pricing (Randy Guensler)  
Transportation related Noise and Vibration (Tim Sexton)  
Transportation and Sustainability (Joe Zietsman)  
Environmental Justice in Transportation (Eloisa Raynault)

## Appendix B: Data on Sponsored and Co-Sponsored Sessions at TRB Annual Meetings

### **2016 Data:**

3 Paper/Conference Sessions

4 Published Meetings

1 Poster Session

2 Workshops

Lectern Session 266

Diesel: Staying Focused on the Most Important Air Pollution Source

Monday, Jan 11, 2016 10:15AM 12:00PM

Lectern Session 753

Hot Spots and the Air Pollution Bullseye: Understanding Near-Road Pollution and Exposure

Wednesday, Jan 13, 2016 8:00AM 9:45AM

Lectern Session 609

Solving the Air-Quality Dilemma: Land Use, Vehicle Technology, Eco-driving, and Transit Service

Tuesday, Jan 12, 2016 1:30PM 3:15PM

Published Meeting - Committee

Regional Air Quality Analysis Subcommittee, ADC20(2)

Tuesday, Jan 12, 2016 10:15AM 12:00PM

Published Meeting - Committee

Project Level Air Quality Analysis Subcommittee, ADC20(1)

Wednesday, Jan 13, 2016 10:15AM 12:00PM

Published Meeting - Committee

CANCELLED - Transportation Air Quality Research Subcommittee, ADC20(3)

Wednesday, Jan 13, 2016 10:15AM 12:00PM

Published Meeting - Committee

Transportation and Air Quality Committee

Wednesday, Jan 13, 2016 2:30PM 6:00PM

Poster Session 438

Current Issues in Transportation and Air Quality

Monday, Jan 11, 2016 4:15PM 6:00PM

Workshop 116

Why All the Interest in Good Data and Emissions Estimates for Congestion, Mitigation, and Air Quality



Improvement Program Projects?  
Sunday, Jan 10, 2016 9:00AM 12:00PM

Workshop 872

Transportation Modeling: Effects of Changes to U.S. Environmental Protection Agency Guideline on Air Quality Models Thursday, Jan 14, 2016 8:00AM 12:00PM

### **2015 Data**

3 Paper/Conference Sessions

1 Poster Session

2 Workshops

4 Published Meetings

6 Cosponsored Sessions/Meetings

Paper or Conference Session (S)s

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**802** (CGS15-033)

Wednesday, January 14, 2015, 10:15am-12:00pm, Convention Center, 156

[Vehicle Emission Reduction Strategies: Electric Vehicle Adoption and Taxation](#)

[Yan Liu](#), University of Maryland, College Park, presiding

*Sponsored by Committee on Transportation and Air Quality; Committee on Transportation Energy; Committee on Alternative Transportation Fuels and Technologies*

[Air Quality Impacts of Electric Vehicle Adoption in Texas](#) (15-1813)

[Brice Gregory Nichols](#), Puget Sound Regional Council

[Kara Kockelman](#), University of Texas, Austin

[Matthew Reiter](#), University of Texas, Austin

[Emission and Cost Implications of Controlled Electric Vehicle Charging](#) (15-5431)

[Allison Elizabeth Weis](#), Carnegie Mellon University

[Roger Lueken](#), Carnegie Mellon University

[Paulina Jaramillo](#), Carnegie Mellon University

[Jeremy J. Michalek](#), Carnegie Mellon University

[Emergence of Electric-Powered Two-Wheelers on Asian Roads: Curse or Blessing from a Sustainable Transport Perspective?](#) (15-5461)

[Juan Miguel Velasquez](#), EMBARQ/World Resources Institute

[Katrin Julia Eisenbeiss](#), Consultant, GIZ

[Model System to Evaluate Impacts of Vehicle Purchase Tax and Fuel Tax on Household Greenhouse Gas Emissions](#) (15-1894)

[Yan Liu](#), University of Maryland, College Park  
[Cinzia Cirillo](#), University of Maryland, College Park

**675** (CGS15-034)

Tuesday, January 13, 2015, 3:45pm- 5:30pm, Convention Center, 156

[On-road and Not-on-Road Truck Activities and Emissions](#)

[John Koupal](#), Eastern Research Group, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality*

[Environmental and Health Impacts of Shifting Drayage Truck Operations to Off-peak Hours: Analysis of PierPASS Program in Southern California](#) (15-5198)

[Ankoo Bhagat](#), University of California, Irvine

[Jean-Daniel Maurice Saphores](#), University of California, Irvine

[R. Jayakrishnan](#), University of California, Irvine

[Fusion of Vehicle Weight and Activity Data for Improved Vehicle Emission Modeling](#) (15-5825)

[Kanok Boriboonsomsin](#), University of California, Riverside

[Guoyuan Wu](#), University of California, Riverside

[Peng Hao](#), University of California, Riverside

[Matthew J. Barth](#), University of California, Riverside

[Improvement of Default Local MOVES Input Data for 2011 National Emissions Inventory](#) (15-5124)

[John Koupal](#), Eastern Research Group, Inc.

[Tim DeFries](#), Eastern Research Group, Inc.

[Cindy Palacios](#), Eastern Research Group, Inc.

[Allison DenBleyker](#), Eastern Research Group, Inc.

[Heather Perez](#), Eastern Research Group, Inc.

[Transportation Activities Associated with High-Volume Hydraulic Fracturing Operations in the Marcellus Shale Formation: Analysis of Environmental and Infrastructure Impacts](#) (15-3146)

[Karl Korfmacher](#), Rochester Institute of Technology

[Scott Hawker](#), Rochester Institute of Technology

[James J. Winebrake](#), Rochester Institute of Technology

**828** (CGS15-044)

Wednesday, January 14, 2015, 2:30pm- 4:00pm, Convention Center, 140A

[Development of Drive Schedule/Operating Mode Distribution Input to MOVES Modeling](#)

[Mohamadreza Farzaneh](#), Texas A&M Transportation Institute , presiding

*Sponsored by Committee on Transportation and Air Quality*

[Developing Texas-Specific Drive Cycles for Use with the MOVES Model](#) (15-4919)

[Mohamadreza Farzaneh](#), Texas A&M Transportation Institute

[Chaoyi Gu](#), Texas A&M University, College Station

[Nicholas S. Wood](#), Texas A&M Transportation Institute

[Josias Zietsman](#), Texas A&M Transportation Institute

**Modeling Transit Bus Emissions using MOVES: Validation of Default Distributions and Embedded Drive Cycles with Local Data** (15-2958)

[Ahsan Alam](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Implications of Driving Style and Road Grade for Accurate Vehicle Activity Data and Emissions Estimates** (15-4702)

[Karen M. Sentoff](#), University of Vermont

[Lisa Aultman-Hall](#), University of Vermont

[Britt A. Holmen](#), University of Vermont

**Feasibility Study of Using Driving Simulator to Develop Operating Mode Distributions for Emission Analysis** (15-1437)

[Ziyue Li](#), Texas Southern University

[Lei Yu](#), Texas Southern University

[Fengxiang Qiao](#), Texas Southern University

[Jinghui Wang](#), Virginia Polytechnic Institute and State University

**Improved Method for Real-Time Vehicle Emission Estimation at Intersections Based on Radar Sensor Data and MOVES Model** (15-5512)

[Lang Yu](#), University of Wisconsin, Madison

[Zhixia Li](#), University of Wisconsin, Madison

[Madhav V. Chitturi](#), University of Wisconsin, Madison

[Andrea R. Bill](#), University of Wisconsin, Madison

[David A. Noyce](#), University of Wisconsin, Madison

Poster Session (P)s

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**531** (CGP15-002)

Tuesday, January 13, 2015, 8:30am-10:15am, Convention Center, Hall E

**Current Issues in Transportation and Air Quality**

[Britt A. Holmen](#), University of Vermont, presiding

*Sponsored by Committee on Transportation and Air Quality*

**Incorporating Vehicle Emissions Models into the Geometric Highway Design Process: Application on Horizontal Curves** (15-0199)

[Myunghoon Ko](#), Texas A&M Transportation Institute

**Effects of Pavement Surface Roughness and Congestion on Expected Freeway Traffic Energy**

**Consumption** (15-1015)

[Laura E. Ghosh](#), University of Illinois, Urbana-Champaign

[Ligun Lu](#), University of Illinois, Urbana-Champaign

[Hasan Ozer](#), University of Illinois, Urbana-Champaign

[Yanfeng Ouyang](#), University of Illinois, Urbana-Champaign

[Imad L. Al-Qadi](#), University of Illinois, Urbana-Champaign

**Operating Mode Distribution Characteristics of Different Freeway Weaving Configurations and Their Effects on Vehicular Emissions** (15-1429)

[Jinghui Wang](#), Virginia Polytechnic Institute and State University

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

[Lei Yu](#), Texas Southern University

**Influence of Fuel Injection System and Engine Timing Adjustments on Regulated Emissions from Four Biodiesel Fuels** (15-1481)

[Christopher Depcik](#), University of Kansas

[Joshua Jachuck](#), University of Rochester

[Dylan Jantz](#), Bethel College

[Farshid Kiani](#), University of Kansas

[Michael Mangus](#), GE Transportation Systems

[Jonathan Mattson](#), University of Kansas

[Edward Peltier](#), University of Kansas

[Susan M. Stagg-Williams](#), University of Kansas

**Hybrid Model for Prediction of Carbon Monoxide and Fine Particulate Matter Concentrations near a Road Intersection** (15-1498)

[Zhanyong Wang](#), Shanghai Jiaotong University, China

[Hong-di He](#), Shanghai Maritime University, China

[Feng Lu](#), Nantong University, China

[Qing-Chang Lu](#), Jiaotong University, China

[Zhong-Ren Peng](#), University of Florida

**Assessment of Corridors with Different Types of Intersections: Environmental and Traffic Performance Analysis** (15-1527)

[Paulo Jorge Fernandes](#), University of Aveiro, Portugal

[Tânia Fontes](#), FEUP

[Mark Neves](#), University of Aveiro, Portugal

[Sérgio Filipe Ramos Pereira](#), University of Aveiro, Portugal

[Jorge Filipe Marto Bandeira](#), University of Aveiro, Portugal

[Margarida Cabrita Coelho](#), University of Aveiro, Portugal

[Nagui M. Roupail](#), North Carolina State University, Raleigh

**Empirical Assessment of Turbo-Roundabout Operations on Traffic and Emissions** (15-1532)

[Paulo Jorge Fernandes](#), University of Aveiro, Portugal

[Sérgio Filipe Ramos Pereira](#), University of Aveiro, Portugal

[Jorge Filipe Marto Bandeira](#), University of Aveiro, Portugal

[Luís Vasconcelos](#), Polytechnic Institute of Viseu, Portugal

[Ana Bastos Silva](#), University of Coimbra, Portugal

[Margarida Cabrita Coelho](#), University of Aveiro, Portugal

**Characteristics of Fine Particulate Matter in Number Concentrations at Urban Traffic Intersection in Hong Kong** (15-1752)

[Hongdi He](#), Shanghai Maritime University, China

**MOVES Project-Level Traffic and Air Quality Analyses: New Collaborative Approach** (15-1869)

[Lorraine Farrell](#), New York City Department of Environmental Protection

[Einah Reza Manalo Pelaez](#), HDR Inc.

[Gary Comerford](#), HDR Inc.

[Robert Frazier](#), HDR Inc.

[Mallory Goff](#), HDR Inc.

[Shakil Ahmed](#), New York City Department of Transportation

[Joon Park](#), New York City Department of Transportation

[Andrew J. Weeks](#), New York City Department of Transportation

**Performance Evaluation of CAL3QHC and CALINE4 for Short-Term Simulation of Fine Particulate Matter and Carbon Monoxide Concentrations at Road Intersection** (15-2020)

[Dongsheng Wang](#), Jiaotong University, China

[Zhanyong Wang](#), Shanghai Jiaotong University, China

[Zhong-Ren Peng](#), University of Florida

**Analysis of Effects of Signal-Related Parameters on Intersection Speed Profiles: Alternative Perspective to Estimate Emissions for Signalized Intersections** (15-2102)

[Xumei Chen](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Yi Qi](#), Texas Southern University

[Xin Li](#), Beijing Jiaotong University

[Xiaofei Sun](#), Beijing Jiaotong University

**Smartdecision: Route Choice App Based on Ecofriendly Criteria** (15-2209)

[Sérgio Filipe Ramos Pereira](#), University of Aveiro, Portugal

[Tânia Fontes](#), FEUP

[Jorge Filipe Marto Bandeira](#), University of Aveiro, Portugal

[Paulo Jorge Fernandes](#), University of Aveiro, Portugal

[Margarida Cabrita Coelho](#), University of Aveiro, Portugal

**The Problem of Cold Starts: Closer Look at Mobile Source Emission Levels** (15-2371)

[Matthew Reiter](#), University of Texas, Austin

[Kara Kockelman](#), University of Texas, Austin

**Emission Implications of Alternative Origin-Destination Routes: Case Study in Houston, Texas** (15-2511)

[Chelse Hoover](#), Texas Southern University

[Lei Yu](#), Texas Southern University

[Fengxiang Qiao](#), Texas Southern University

[Mehdi Azimj](#), Texas Southern University

**Real-Time Emissions Modeling with Environment Protection Agency MOVES: Framework**

**Development and Preliminary Investigation** (15-2604)

[Sangjun Park](#), Chosun University, South Korea

[Kyoungho Ahn](#), Virginia Polytechnic Institute and State University

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

[Chungwon Lee](#), Seoul National University, South Korea

**Development of Emission Factors for A Urban Road Network Based on Speed Distributions** (15-2731)

[Ming Li](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Zhiqiang Zhai](#), Beijing Jiaotong University, China

[Weinan He](#), Beijing Transport Energy and Environment Center, China

[Guohua Song](#), Beijing Jiaotong University, China

**Macroscopic Consumption Matrix for Energy-efficient Route Guidance** (15-2751)

[Peter Hemmerle](#), Daimler, Germany

[Gerhard Hermanns](#), University of Duisburg-Essen, Germany

[Micha Koller](#), Daimler, Germany

[Hubert Rehborn](#), Daimler, Germany

[Boris S. Kerner](#), University of Duisburg-Essen, Germany

[Michael Schreckenber](#), University of Duisburg-Essen, Germany

**Analysis of Instantaneous Speed Distributions and Emissions for Transit Buses Across an Urban Network** (15-2941)

[Ahsan Alam](#), McGill University, Canada

[Junshi Xu](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Gasoline Passenger Car Emission Deterioration: Results from Long-Term High-Volume On-Road Measurements in Europe** (15-3209)

[Yuche Chen](#), Texas A&M Transportation Institute

[Jens Borken](#), German Aerospace Center

**Efficient Approach to EPA's MOVES Hot-Spot Emission Analysis Using Comprehensive Traffic Modeling** (15-3281)

[Babu Veeregowda](#), Vanasse Hangen Brustlin Inc

[Teresa Lin](#), AKRF Inc

[Joshua Herman](#), Vanasse Hangen Brustlin Inc.

**Empirical Comparison of Fuel Consumption and Tailpipe Emissions for Light-Duty Vehicles Fueled with E85 and Conventional Gasoline** (15-3545)

[Maryam Delavarrafiee](#), North Carolina State University

[Xiaohui Zheng](#), North Carolina State University

[H. Christopher Frey](#), North Carolina State University

[Richard Weaver](#), U.S. Marine Corps Cherry Point Air Station

**Simplified Technology-Specific Simulation Approach for Estimation of CO2 Emissions from Traffic Simulation Models** (15-3855)

[Georgios Fontaras](#), European Commission Joint Research Centre, Italy

[Biagio Filippo Ciuffo](#), European Commission Joint Research Centre, Italy

[Stefanos Tsiakmakis](#), European Commission Joint Research Centre, Italy  
[Konstantinos Anagnostopoulos](#), European Commission Joint Research Centre, Italy  
[Alessandro Marotta](#), European Commission Joint Research Centre, Italy  
[Jelica Pavlovic](#), European Commission Joint Research Centre, Italy  
[Simone Serra](#), European Commission Joint Research Centre, Italy  
[Nikiforos Zacharof](#), European Commission Joint Research Centre, Italy

**Networkwide Impacts of Vehicle Ecospeed Control in the Vicinity of Traffic Signalized Intersections**  
(15-4290)

[Raj Kishore Kamalanathsharma](#), Virginia Tech Transportation Institute  
[Hesham Rakha](#), Virginia Polytechnic Institute and State University  
[Hao Yang](#), Virginia Polytechnic Institute and State University

**Capturing Urban Canyon Effect on Near-Road Air Pollution Concentrations** (15-4535)

[William Farrell](#), McGill University, Canada  
[Laure Deville Cavellin](#), McGill University  
[Scott Weichenthal](#), McGill University  
[Mark S. Goldberg](#), McGill University, Canada  
[Marianne Hatzopoulou](#), McGill University, Canada

**Reducing Environmental Impact by Adaptive Traffic Control and Management for Urban Road Networks** (15-4823)

[Margherita Mascia](#), Polytechnic University of Bari, Italy  
[Jun Simon Hu](#), Imperial College London, United Kingdom  
[Ke Han](#), Imperial College London, United Kingdom  
[Robin J. North](#), Imperial College London, United Kingdom  
[Stijn Vranckx](#), Flemish Institute for Technological Research, Belgium  
[Martine Van Poppel](#), Flemish Institute for Technological Research, Belgium  
[Jan Theunis](#), Flemish Institute for Technological Research, Belgium  
[Martin Litzenberger](#), Austrian Institute of Technology

**Analysis of Vehicles' Daily Fuel Consumption Frontiers Using Long-Term Controller Area Network Data**  
(15-4828)

[Dawei Li](#), Southeast University, China  
[Tomio Miwa](#), Nagoya University, Japan  
[Takayuki Morikawa](#), Nagoya University, Japan

**Developing Emission Estimation Tool for Border Crossings** (15-4906)

[Mohamadreza Farzaneh](#), Texas A&M Transportation Institute  
[Tyler Fossett](#), Texas A&M Transportation Institute  
[Jon Williams](#), Texas A&M Transportation Institute  
[Chaoyi Gu](#), Texas A&M University, College Station  
[Nicholas S. Wood](#), Texas A&M Transportation Institute  
[Josias Zietsman](#), Texas A&M Transportation Institute

**Finding Link Driving Schedules for Integrated Traffic Emission Simulator by Clustering with Dynamic Time-Warping Measures** (15-5060)

[H. M. Abdul Aziz](#), Purdue University

[Satish V. Ukkusuri](#), Purdue University

**Measurement and Evaluation of Real-World Speed and Acceleration Activity Envelopes for Light Duty Vehicles** (15-5287)

[Bin Liu](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Evaluation of Sampling Strategies for Vehicular Emission Estimation Using Probe Vehicles** (15-5470)

[Peng Hao](#), University of California, Riverside

[Guoyuan Wu](#), University of California, Riverside

[Pierre Saikaly](#), ENSTA Paris Tech, France

**Validation of Puff Dispersion Model: Air Quality Simulation for New Highway Infrastructure** (15-5571)

[Maryam Shekarrizfard](#), McGill University, Canada

[Ahsan Alam](#), McGill University, Canada

[Adham Badran](#), McGill University, Canada

[Julien Faucher](#), Polytechnique Montreal, Canada

[Luis Fernando Miranda-Moreno](#), McGill University, Canada

[Catherine Morency](#), Polytechnique Montreal, Canada

[Nicolas Saunier](#), Polytechnique Montreal, Canada

[Zachary Rupert Patterson](#), Concordia University, Canada

[Martin Trepanier](#), Polytechnique Montreal, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Methodology to Determine Energy and Greenhouse Gases from Asphalt Binder Production for Various Regions in the United States** (15-5758)

[Rebekah Yang](#), University of Illinois, Urbana-Champaign

[Hasan Ozer](#), University of Illinois, Urbana-Champaign

[Imad L. Al-Qadi](#), University of Illinois, Urbana-Champaign

**Estimation of Link-Based Emissions for Truck Route in Downtown Halifax, Canada** (15-5946)

[Shamsad Irin](#), Dalhousie University, Canada

[Ahsan Habib](#), Dalhousie University, Canada

**Estimating Fuel Consumption and Vehicle Emissions from Multiyear Travel Survey Data** (15-5995)

[Levi Eric Megenbir](#), Dalhousie University, Canada

[Ahsan Habib](#), Dalhousie University, Canada

**Reducing Commuting-Related Environmental Impacts in the Healthcare Sector: An Exploratory Study** (15-6057)

[Ning Ai](#), University of Illinois, Chicago

[Susan Kaplan](#), University of Illinois, Chicago

[Peter Orris](#), University of Illinois Hospital and Health Sciences System

[P. S. Sriraj](#), University of Illinois, Chicago

**Integrated Approach to Estimate Pedestrian Exposure to Vehicle Emissions** (15-1897)

[Fangzhou Su](#), University of Toronto, Canada

[Matthew J. Roorda](#), University of Toronto, Canada

[Eric J. Miller](#), University of Toronto, Canada

[Erin Morrow](#), Arup, Canada



**Individual Exposure to Traffic-Related Air Pollution Across Land-Use Clusters** (15-3306)

[Maryam Shekarrizfard](#), McGill University, Canada  
[Ahmadreza Faghih-Imani](#), McGill University, Canada  
[Dan Crouse](#), McGill University  
[Mark S. Goldberg](#), McGill University, Canada  
[Nancy Ross](#), McGill University, Canada  
[Naveen Eluru](#), University of Central Florida  
[Marianne Hatzopoulou](#), McGill University, Canada

**Exposure to Particulate Air Pollution While Cycling** (15-5053)

[Steve Hankey](#), Virginia Tech  
[Julian Marshall](#), University of Minnesota

**Integrating Truck Emissions Cost in Traffic Assignment** (15-4936)

[Peter Foytik](#), Old Dominion University, Norfolk  
[Robert Michael Robinson](#), Old Dominion University, Suffolk

**Optimization of Wiedemann and Fritzsche Car-Following Models for Emission Estimation** (15-5701)

[Guohua Song](#), Beijing Jiaotong University, China  
[Lei Yu](#), Texas Southern University  
[Zhongbo Geng](#), Beijing Jiaotong University, China

**Development of Carbon Emission Management System Linked with Land Use-Transportation Model**  
(15-2395)

[Hyejung Hu](#), Korea Institute of Civil Engineering and Building Technology  
[Choong Heon Yang](#), Korea Institute of Construction Technology  
[Chunjoon Yoon](#), Korea Institute of Civil Engineering and Building Technology  
[In Soo Kim](#), Korea Institute of Construction Technology  
[Jung Gon Sung](#), Korea Institute of Construction Technology

**Assessing Emission Impacts of Transportation Management Strategies for Large-Scale Regional Networks** (15-4446)

[Shams Tanvir](#), North Carolina State University, Raleigh  
[Bin Liu](#), North Carolina State University, Raleigh  
[Xuesong Zhou](#), Arizona State University  
[H. Christopher Frey](#), North Carolina State University  
[Nagui M. Rouphail](#), North Carolina State University, Raleigh

**Evaluation of Impacts of Bicycle-Sharing Systems on Carbon Emission Reductions: Empirical Study in Beijing** (15-2699)

[Chunyan Li](#), Beijing Transportation Research Center, China  
[Shengyang Sun](#), Deutsche Gesellschaft für Technische Zusammenarbeit GmbH, China

**Estimating Baseline Greenhouse Gas Emissions from Motorcycle-Taxi in Bandung, Indonesia** (15-3959)

[Sudarmanto Budi Nugroho](#), Institute for Global Environmental Strategies, Japan  
[Eric Zusman](#), Institute for Global Environmental Strategies, Japan  
[Akimasa Fujiwara](#), Hiroshima University, Japan  
[Zhang Junyi](#), Hiroshima University, Japan

**Mandatory Employer Trip Reduction Regulatory Development in Mexico City** (15-5799)

[Rachel R. Weinberger](#), Nelson\Nygaard Consulting Associates  
[Erin Franke](#), CTS EMBARQ Mexico  
[Eric N. Schreffler](#), Transportation Consultant  
[Jorge Macias Mora](#), Center for Sustainable Transport, Mexico  
[Maria Catalina Ochoa Sepulveda](#), World Bank

**Development of the Worldwide Harmonized Test Procedure for Light-Duty Vehicles: Pathway for Implementation in European Union Legislation** (15-4935)

[Biagio Filippo Ciuffo](#), European Commission Joint Research Centre, Italy  
[Alessandro Marotta](#), European Commission Joint Research Centre, Italy  
[Monica Tutuianu](#), AVL List GmbH, Austria  
[Konstantinos Anagnostopoulos](#), European Commission Joint Research Centre, Italy  
[Georgios Fontaras](#), European Commission Joint Research Centre, Italy  
[Jelica Pavlovic](#), European Commission Joint Research Centre, Italy  
[Simone Serra](#), European Commission Joint Research Centre, Italy  
[Stefanos Tsiakmakis](#), European Commission Joint Research Centre, Italy  
[Nikiforos Zacharof](#), European Commission Joint Research Centre, Italy

**Comparison of Gaseous Emissions from Light-Duty Vehicles Under New European Driving Cycle and World-Wide Harmonized Light-Duty Test Procedures** (15-4945)

[Alessandro Marotta](#), European Commission Joint Research Centre, Italy  
[Jelica Pavlovic](#), European Commission Joint Research Centre, Italy  
[Simone Serra](#), European Commission Joint Research Centre, Italy  
[Konstantinos Anagnostopoulos](#), European Commission Joint Research Centre, Italy  
[Biagio Filippo Ciuffo](#), European Commission Joint Research Centre, Italy  
[Georgios Fontaras](#), European Commission Joint Research Centre, Italy  
[Stefanos Tsiakmakis](#), European Commission Joint Research Centre, Italy  
[Nikiforos Zacharof](#), European Commission Joint Research Centre, Italy

**Roadway Determinants of Bicyclist Multi-pollutant Exposure Concentrations** (15-3401)

[Alexander York Bigazzi](#), Portland State University  
[Miguel Figliozzi](#), Portland State University

Workshop (W)s

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**861** (CGW15-009)

Thursday, January 15, 2015, 8:00am-12:00pm, Convention Center, 102B

**Tools for Evaluating Greenhouse Gas Reduction Strategies**

[Robert Chamberlin](#), RSG, presiding

*Sponsored by Committee on Transportation and Air Quality; Committee on Transportation Energy; Committee on Alternative Transportation Fuels and Technologies; Committee on Environmental Analysis in Transportation; Task Force on Special Task Force on Climate Change and Energy*

With growing interest in tools for evaluating transportation-based greenhouse gas (GHG) emissions, such emissions are becoming part of the MPO and DOT planning process at multiple levels—from corridor planning and transportation improvement plans to statewide climate action plans. In response, several software tools have been developed to meet the needs of these plans. This workshop illustrates the capacity of these tools to broaden and simplify analysis.

**Introduction/Keynote Address** (P15-7173)

[David Lloyd Greene](#), University of Tennessee, Knoxville

**Climate Initiatives Program: Meeting the Bay Area’s GHG Emission Reduction Goals** (P15-5862)

[David Vautin](#), Metropolitan Transportation Commission

[Brenda Dix](#), ICF International

**Validating and Calibrating EERPAT to Study Statewide and Regional GHG Reduction Measures** (P15-5863)

[Hejun Kang](#), Baltimore Metropolitan Council

**EPA’s Travel Efficiency Assessment Method: Using MOVES to Estimate Greenhouse Gas Reductions** (P15-7093)

[Laura Berry](#), U.S. Environmental Protection Agency

**GHG Reduction Strategies for Washington State - Pilot Study of FHWA’s EERPAT Tool** (P15-5864)

[Natarajan Janarthanan](#), Washington Department of Transportation

**Using the EERPAT Model to Inform Climate Policy** (P15-5865)

[Amy Bell](#), Vermont Agency of Transportation

**Discussion of EERPAT Pilot and Relation to Maryland’s Climate Action Plan** (P15-7139)

[Howard Simons](#), Maryland Department of Transportation

**The Infrastructure Carbon Estimator** (P15-5869)

[John Davies](#), FHWA

**Using GREET for Insights on Life-Cycle GHG Reductions** (P15-5870)

[Michael Q. Wang](#), Argonne National Laboratory

**Estimating Life-Cycle Emissions from Transportation Construction Projects: New Jersey’s GASCAP Model** (P15-5872)

[Robert B. Noland](#), Rutgers University

**Wrap-Up - Synthesis of Workshop** (P15-5874)

[Robert B. Noland](#), Rutgers University

**117** (CGW15-010)

Sunday, January 11, 2015, 9:00am-12:00pm, Convention Center, 146A

**Integrated Land-use, Travel Demand, Air Quality, and Exposure Modeling: the Future of Regional Transportation Planning?**

[Gregory Rowangould](#), University of New Mexico; [Marianne Hatzopoulou](#), McGill University, Canada, presiding

*Sponsored by Committee on Transportation and Air Quality; Committee on Transportation Demand*

Exciting advances in land-use, travel demand, and air quality modeling provide new methods to assess the air quality and health effects of regional transportation plans. Integrated systems of these models are sensitive to a wide range of contemporary land-use and transportation policies and provide spatially resolved output but will this help us make more sustainable and health protective planning decisions? Experts and participants will explore the potential, limitations and challenges.

**Introduction to Integrated Modeling and Workshop Goals** (P15-5928)

[Gregory Rowangould](#), University of New Mexico

[Marianne Hatzopoulou](#), McGill University, Canada

**Accommodating the multidimensional nature of integrated models: emerging methods and challenges in capturing cause-effect relationships** (P15-5929)

[Chandra R. Bhat](#), University of Texas, Austin

**Activity-Travel Scripts as Linking Pin Between Land Use, Transportation, Energy Consumption, Air Quality, Exposure and Health: Theoretical Considerations and Selected Empirical Evidence** (P15-5930)

[Soora Rasouli](#), Eindhoven University of Technology, Netherlands

[Harry J. P. Timmermans](#), Eindhoven University of Technology, Netherlands

[Dujuan Yang](#), Eindhoven University of Technology, Netherlands

**What do we need for our benefit assessments? Three levels of modeling** (P15-5931)

[Kay W. Axhausen](#), Swiss Federal Institute of Technology, Zurich

**Challenges in modeling health effects in land use transportation interaction models** (P15-5932)

[Dick Ettema](#), Utrecht University, Netherlands

**Effects of Scale and Scope in Modeling and Decision Making** (P15-5933)

[Alex Karner](#), Arizona State University

[Deborah Niemeier](#), University of California, Davis

**A New Model for Models: Thinking Differently about Forecasting and Policymaking** (P15-5934)

[Martin Wachs](#), University of California, Los Angeles

**Panel Discussion** (P15-5935)

[Chandra R. Bhat](#), University of Texas, Austin

[Harry J. P. Timmermans](#), Eindhoven University of Technology, Netherlands

[Dujuan Yang](#), Eindhoven University of Technology, Netherlands

[Kay W. Axhausen](#), Swiss Federal Institute of Technology, Zurich

[Dick Ettema](#), Utrecht University, Netherlands

[Alex Karner](#), Arizona State University

[Deborah Niemeier](#), University of California, Davis

[Martin Wachs](#), University of California, Los Angeles

Monday, January 12, 2015, 8:00am- 9:45am, Marriott Marquis, Independence G (M4)

[Regional Air Quality Analysis Subcommittee, ADC20\(2\)](#)

[Douglas S. Eisinger](#), Sonoma Technology, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Goods movement and diesel emissions control, implementation and analysis lessons from Houston-Galveston, Texas](#)** (P15-6033)

[Sarah Roberts](#), Houston-Galveston Area Council

**[Modeling heavy duty vehicles, new insights based on MOVES2014](#)** (P15-6034)

[Andrew Eilbert](#), U.S. Environmental Protection Agency

**[Truck and port-related control programs, a national perspective.](#)** (P15-6290)

[Elena Craft](#), Environmental Defense Fund

CGM15-002

Monday, January 12, 2015, 1:30pm- 3:15pm, Marriott Marquis, Independence G (M4)

[Project Level Air Quality Analysis Subcommittee, ADC20\(1\)](#)

[Christopher Voigt](#), Virginia Department of Transportation, presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Streamlining Project-Level Analyses: NCHRP 25-25\(78\) Programmatic Agreements for Project-Level Air Quality Analyses](#)** (P15-7150)

[John Zamurs](#), ZAMURS AND ASSOCIATES, LLC

**[NCHRP 25-25\(89\): Establishing Representative Background Concentrations for Quantitative Hot-spot Analyses for Particulate Matter](#)** (P15-6319)

[Ashley Graham](#), Sonoma Technology, Inc.

**[NCHRP 25-48: Combined Interface for Project Level Air Quality Analysis](#)** (P15-6326)

[Robert Chamberlin](#), RSG

[Bryan Matthews](#), Lakes Environmental

**[CRC Research Overview](#)** (P15-6324)

[Chris Tennant](#), Coordinating Research Council, Inc.

**[MOVES2014 Update on hot-spot analysis](#)** (P15-6317)

[Chris Dresser](#), U.S. Environmental Protection Agency

**[Transportation Pooled Fund TPF-5\(284\) Near Road Air Quality Research](#)** (P15-7151)

[Tim Sexton](#), Minnesota Department of Transportation

[Douglas S. Eisinger](#), Sonoma Technology, Inc.

**[AASHTO Subcommittee on Environment \(SCOE\) Air Quality, Energy & Climate Change \(AQECC\) Subcommittee](#)** (P15-7152)

[Jacki Ploch](#), Texas Department of Transportation

**[FHWA](#)** (P15-7153)

[Cecilia Ho](#), Federal Highway Administration

**[US EPA](#)** (P15-7154)

[Laura Berry](#), U.S. Environmental Protection Agency

**[ADC20 Survey Results](#)** (P15-7155)

[Christopher Voigt](#), Virginia Department of Transportation

**[Discussion](#)** (P15-7156)

[Jane Jie Lin](#), University of Illinois, Chicago

[Josias Zietsman](#), Texas A&M Transportation Institute

[Douglas S. Eisinger](#), Sonoma Technology, Inc.

[Michael Claggett](#), Federal Highway Administration

[Jacki Ploch](#), Texas Department of Transportation

[Tim Sexton](#), Minnesota Department of Transportation

CGM15-035

Tuesday, January 13, 2015, 12:15pm- 3:15pm, Marriott Marquis, Independence E (M4)

**[Transportation and Air Quality Committee](#)**

[Jane Jie Lin](#), University of Illinois, Chicago, presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Developing Vehicle Classification Inputs for Project-Level MOVES Analysis](#)** (15-4119)

[Haobing Liu](#), Georgia Institute of Technology School of Civil and Environmental Engineering

[Yanzhi Xu](#), Georgia Institute of Technology

[Michael Owen Rodgers](#), Georgia Institute of Technology

[Randall Guensler](#), Georgia Institute of Technology

**[MOVES2014 Update](#)** (P15-5582)

[Megan Beardsley](#), U.S. Environmental Protection Agency

**[Status of the National Near-Road Ambient Air Monitoring Network](#)** (P15-5583)

[Nealson Watkins](#), U.S. Environmental Protection Agency

CGM15-053

Monday, January 12, 2015, 3:45pm- 5:30pm, Marriott Marquis, Independence G (M4)

**[Transportation Air Quality Research Subcommittee, ADC20\(3\)](#)**

[Josias Zietsman](#), Texas A&M Transportation Institute , presiding

*Sponsored by Committee on Transportation and Air Quality*

ADC20 Cosponsored Sessions (only editable by the primary committee sponsor)

**CGS15-023**

Wednesday, January 14, 2015, 4:30pm- 6:00pm, Convention Center, 140A

[Evaluating Environment and Energy Benefits: When Does Greenhouse Gas Reduction Make Sense Anyway?](#)

[Jean-Daniel Maurice Saphores](#), University of California, Irvine, presiding

[Analyzing Impacts of Global Transport CO2 Emissions Using Multisectoral Tool](#) (P15-6400)

[Erin Cooper](#), EMBARQ/World Resources Institute

[Benoit Lefevre](#), EMBARQ/World Resources Institute

[Julien Pestiaux](#), Cornell University

[Envisioning an Emission Diet: Application of Travel Demand Mechanisms to Facilitate Policy Decision Making](#) (P15-6401)

[Timothy F. Welch](#), Georgia Institute of Technology

[Sabyasachee Mishra](#), University of Memphis

[Understanding Co-benefits of Strategies to Reduce Greenhouse Gases: Overview of FHWA and AASHTO Activities](#) (P15-6402)

[Shari M. Schaftlein](#), Federal Highway Administration

[Michael Culp](#), Federal Highway Administration

[Stefan M. Natzke](#), Federal Highway Administration

[Mark Anthony Ferroni](#), Federal Highway Administration

[Gary Jensen](#), Federal Highway Administration

[Jennifer Brickett](#), American Association of State Highway and Transportation Officials

[Co-benefits of Carbon Mitigation in the Transportation Sector from Fine Particles, Black Carbon, Methane, and Hydrofluorocarbons](#) (P15-6403)

[Drew K. Kodjak](#), International Council on Clean Transportation

[Ray Minjares](#), International Council on Clean Transportation

[Analysis of Cost-effectiveness of Clean Trucks Program in Southern California](#) (P15-6404)

[Jean-Daniel Maurice Saphores](#), University of California, Irvine

[Tammie Kuo](#), University of California, Irvine

CGW15-005

Sunday, January 11, 2015, 1:30pm- 4:30pm, Convention Center, 146A

[Clean Truck Corridors: Understanding the Barriers and Opportunities](#)

[Philip M. Sheehy](#), ICF International, presiding

This workshop focuses on the opportunities for, and the barriers to, clean truck corridors in a period of unprecedented numbers of clean truck strategies available to motor carriers, transportation agencies, and the owners and operators of major freight terminals. Clean truck corridors are explored from a variety of perspectives from multiple jurisdictions, including regional planning agencies, motor carriers,

and infrastructure providers.

**Framing the Challenge of Clean Truck Corridors** (P15-6445)

Philip M. Sheehy, ICF International

**Zero Emissions Goods Movement: Progress, Lessons Learned, and Outlook** (P15-6446)

Matt Miyasato, South Coast Air Quality Management District

**Incorporating Sustainable Freight Practices into Corridor Planning** (P15-6447)

Michael Tunnell, American Transportation Research Institute

**Building a National Network of Natural Gas Infrastructure** (P15-6448)

Todd Campbell, Clean Energy

**Lessons Learned: Voluntary Truck Replacement in the Mid-Atlantic Region** (P15-7166)

Susan Wierman, Mid-Atlantic Regional Air Management Association

**JWS15-001**

Wednesday, January 14, 2015, 8:00am- 9:45am, Convention Center, 156

**Best Practices for Deploying Corridor-Based Alternative Fuel Infrastructure**

Diane Turchetta, U.S. Department of Transportation; Marcy Rood Werpy, Argonne National Laboratory, presiding

This joint panel session by the U.S. DOT and U.S. DOE considers the work of DOE's Clean Cities, which relies on local coalitions of fleets, fuel providers, equipment, engine and vehicle manufacturers, and government stakeholders such as state DOTs to reduce the nation's dependence on petroleum. One approach for greater market acceptance used by both DOE and DOT is to build corridors for light-, medium-, and heavy-duty vehicles using alternative fuels or having advanced vehicle power trains.

**Introduction to Clean Cities and Clean Corridors** (P15-5139)

Michael Scarpino, Volpe National Transportation Systems Center

Andrew Burnham, Argonne National Laboratory

**Lessons Learned from Electric Highway Initiative on I-5 in Washington State** (P15-5140)

Tonia Buell, Washington State Department of Transportation

**Alternative Fuels on the Pennsylvania Turnpike** (P15-5141)

Jack Christensen, Pennsylvania Turnpike Commission

**Metrics & Lessons from Building the Planet's Longest Biofuels Corridor – All 1,786 Miles of I-75** (P15-5142)

Jonathan G. Overly, University of Tennessee, Knoxville

**Coasting on the California Hydrogen Highway** (P15-5143)

Bill Elrick, California Fuel Cell Partnership

**JWS15-004**



Tuesday, January 13, 2015, 8:00am- 9:45am, Convention Center, 140A

[Climate Change and Transportation: Best Papers of 2015](#)

[Robert B. Noland](#), Rutgers University, presiding

This session is a special award program recognizing excellence in papers on climate change adaptation and mitigation in transportation. Peer reviewed with the assistance of multiple TRB committees, these four papers were selected among dozens of eligible papers for their innovation and content related to this very important topic.

[Policy Making Should Consider Time-Dependent Greenhouse Gas Benefits of Transit-Oriented Smart Growth](#) (15-0254)

[Matthew J. Nahlik](#), Arizona State University

[Mikhail V. Chester](#), Arizona State University

[Eco-driving Training and Fuel Consumption: Impact, Heterogeneity, and Sustainability](#) (15-0435)

[Philippe Barla](#), University of Laval, Canada

[Mathieu Gilbert-Gonthier](#), University of Laval, Canada

[Marco Antonio Lopez Castro](#), University of Laval, Canada

[Luis Fernando Miranda-Moreno](#), McGill University, Canada

[Mobility Choices and Climate Change: Assessing Effects of Social Norms and Economic Incentives Through Discrete Choice Experiments](#) (15-3934)

[Charles Raux](#), Transport Economics Laboratory, France

[Resilience Versus Risk: Assessing Cost of Climate Change Adaptation to California's Transportation System and the City of Sacramento](#) (15-4420)

[Amy Schweikert](#), Resilient Analytics

[Xavier Espinet](#), Resilient Analytics

[Sara Goldstein](#), University of Colorado Boulder

[Paul S. Chinowsky](#), Resilient Analytics

**KFM15-008**

Tuesday, January 13, 2015, 7:30pm- 9:30pm, Marriott Marquis, Monument (M4)

[Air Quality Issues in Small and Medium-Sized Communities Subcommittee, ADA30\(2\)](#)

[Evelyn Sue Kimbrough](#), U.S. Environmental Protection Agency, presiding

**RCM15-039**

Monday, January 12, 2015, 7:30pm-10:00pm, Marriott Marquis, Marquis Ballroom Salon 7 (M2)

[Traffic Simulation Models Joint Subcommittee of AHB45, AHB40, AHB25, AHB20, ADB30, AHB55, ADC20](#)

[George F. List](#), North Carolina State University, Raleigh, presiding

## 2014 Data

2 Paper/Conference Sessions

2 Poster Sessions

2 Workshops

4 Published Meetings

3 Cosponsored Sessions/Meetings

Paper or Conference Session (S)s

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**809** (CGS14-038)

Wednesday, January 15, 2014, 10:15am-12:00pm, Hilton, Lincoln East

[Quantification of Transportation Pollutant Exposure Concentrations](#)

[Marianne Hatzopoulou](#), McGill University, Canada, presiding

*Sponsored by Committee on Transportation and Air Quality*

[Comparison of Fine Particulate Matter and Carbon Monoxide Exposure Concentrations for Selected Transportation Modes](#) (14-0584)

[Wan Jiao](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

[Passive Control of Air Pollution in Dublin, Ireland: Combined Measurement and Modeling Case Study](#) (14-0199)

[John Gallagher](#), Bangor University, United Kingdom

[Aonghus McNabola](#), Trinity College Dublin

[Laurence W Gill](#), Trinity College Dublin

[Modeling Impact of Traffic Conditions on Variability of Midblock Roadside Fine Particulate Matter: Case Study of an Urban Arterial Corridor](#) (14-4970)

[Adam Moore](#), Portland State University

[Miguel Figliozzi](#), Portland State University

[Alexander York Bigazzi](#), Portland State University

[Statistical Model Explaining Air Pollution Exposures of Cyclists in Urban Environments](#) (14-4194)

[William Farrell](#), McGill University, Canada

[Scott Weichenthal](#), Health Canada

[Mark S. Goldberg](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

[Web-Based Evaluation Framework for Supporting Effective Air Quality Improvement Policies](#) (14-0841)

[Inchul Yang](#), Korea Institute of Construction Technology  
[Choong Heon Yang](#), Korea Institute of Construction Technology  
[Junggon Sung](#), Korea Institute of Construction Technology  
[Keechoo Choi](#), Ajou University, South Korea  
[Amelia Regan](#), University of California, Irvine

**663** (CGS14-039)

Tuesday, January 14, 2014, 3:45pm- 5:30pm, Hilton, Columbia Hall 6

[Integrated Transportation and Emission Modeling](#)

[Robert Chamberlin](#), RSG, presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Application of AIMSUN Microsimulation Model to Estimate Emissions on Signalized Arterial Corridors](#)**

(14-1481)

[Abseen Rifa Anya](#), North Carolina State University, Raleigh  
[Nagui M. Rouphail](#), North Carolina State University, Raleigh  
[H. Christopher Frey](#), North Carolina State University  
[Bastian J. Schroeder](#), North Carolina State University, Raleigh

**[Integrating Simplified Emission Estimation Model and Mesoscopic Dynamic Traffic Simulator to Evaluate Emission Impacts of Traffic Management Strategies](#)** (14-4968)

[Xuesong Zhou](#), Arizona State University  
[Hao Lei](#), University of Utah  
[Jeffrey Taylor](#), University of Utah  
[Bin Liu](#), North Carolina State University, Raleigh  
[Nagui M. Rouphail](#), North Carolina State University, Raleigh  
[H. Christopher Frey](#), North Carolina State University

**[Calibrating Traffic Microsimulation Model to Real-World Operating Mode Distributions](#)** (14-0406)

[Eric Talbot](#), Resource Systems Group, Inc  
[Robert Chamberlin](#), RSG  
[Britt A. Holmen](#), University of Vermont  
[Karen M. Sentoff](#), University of Vermont

**[Traffic Emissions and Air Quality Near Roads in Dense Urban neighborhood: Using Microscopic Simulation for Evaluating Effects of Vehicle Fleet, Travel Demand, and Road Network Changes](#)** (14-3071)

[Ahsan Alam](#), McGill University, Canada  
[Golnaz Ghafghazi](#), McGill University, Canada  
[Marianne Hatzopoulou](#), McGill University, Canada

**[Modeling Second-by-Second Traffic Emissions in a Mega-Region](#)** (14-2325)

[Nathanael Arthur Isbell](#), University of California, Santa Barbara  
[Konstadinos G. Goulias](#), University of California, Santa Barbara

**576** (CGP14-003)

Tuesday, January 14, 2014, 10:45am-12:30pm, Hilton, International Center

[Transportation and Air Quality](#)

[Song Bai](#), Sonoma Technology, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Examination of Attributes and Value of Ecologically Friendly Route Choice](#)** (14-1390)

[Kanok Boriboonsomsin](#), University of California, Riverside

[Joseph Dean](#), University of California, Riverside

[Matthew J. Barth](#), University of California, Riverside

**[Effect of Road Grade on Networkwide Vehicle Energy Consumption and Ecorouting](#)** (14-4080)

[Michael William Levin](#), University of Texas, Austin

[Melissa Duell](#), University of New South Wales, Australia

[S. Travis Waller](#), University of New South Wales, Australia

**[Development and Validation of Simplified Macromodel for Trip-Based Fuel Consumption and Emissions Estimation: Efficient Eco-Trip Evaluator](#)** (14-4793)

[Yunjie Zhao](#), State University of New York, Buffalo

[Andrew Bartlett](#), State University of New York, Buffalo

[Adel W. Sadek](#), State University of New York, Buffalo

**[Dynamic Traffic Assignment Framework to Assess Short-Term Network-Level Impacts of Eco-Routing Strategies](#)** (14-5689)

[Michael William Levin](#), University of Texas, Austin

[Ehsan Jafari](#), University of Texas, Austin

[Rohan Shah](#), University of Texas, Austin

[Natalia Ruiz Juri](#), University of Texas, Austin

[Kyriacos C. Mouskos](#), City College of New York

**[Model for Optimization of Ecodriving at Signalized Intersections](#)** (14-3965)

[Zhi Chen](#), Texas A&M University

[Yunlong Zhang](#), Texas A&M University

[Jinpeng Lv](#), Texas A&M University

[Yajie Zou](#), University of Washington

**[Agent-Based Simulation of Ecospeed-Controlled Vehicles at Signalized Intersections](#)** (14-1028)

[Raj Kishore Kamalanathsharma](#), Virginia Tech Transportation Institute

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

**[Ecolanes Applications: Preliminary Testing and Evaluation](#)** (14-3784)

[Kyoungho Ahn](#), Virginia Polytechnic Institute and State University

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

**Fuel Economy of Ecodriving Programs: Evaluation of Training and Real-World Driving Applications in Manila, Philippines, and in Tokyo** (14-3619)

[Abuzo Abugaa Anabel](#), Tokyo Institute of Technology, Japan

[Yasunori Muromachi](#), Tokyo Institute of Technology, Japan

**Effect of Driving Behaviors on Emissions in Eco-driving at Intersections** (14-0648)

[Peijia Tang](#), Texas Southern University

[Lei Yu](#), Texas Southern University

[Guohua Song](#), Beijing Jiaotong University, China

**Field Test of Dynamic Green Driving Strategy Based on Intervehicle Communications** (14-5414)

[Hao Yang](#), University of California, Irvine

[Lawrence Andres](#), University of California, Irvine

[Zhe Sun](#), University of California, Irvine

[Qijian Gan](#), University of California, Irvine

[Wen-Long Jin](#), University of California, Irvine

**Virginia Tech Comprehensive Power-Based Fuel Consumption Model: Modeling Diesel and Hybrid Buses** (14-3863)

[William Edwardes](#), Virginia Polytechnic Institute and State University

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

**Development of a Short-Duration Drive Cycle to Represent Long-Term Measured Drive Cycle Data: Evaluation of Truck Efficiency Technologies in Class 8 Tractor-Trailers** (14-1220)

[Tim LaClair](#), Oak Ridge National Laboratory

[Zhiming Gao](#), Oak Ridge National Laboratory

[Joshua S. Fu](#), University of Tennessee, Knoxville

[Jimmy Calcagno](#), University of Tennessee, Knoxville

[Jeongran Yun](#), University of Tennessee, Knoxville

**Developing A Microscopic Transportation Emissions Model to Estimate Carbon Dioxide Emissions on Limited-Access Highways** (14-5626)

[Hatem Abou-Senna](#), University of Central Florida

[Essam Radwan](#), University of Central Florida

**Comparative Study of Vehicle-Specific Power Binning Methods for Estimating Fuel Consumption of Light-Duty Vehicles on Urban Roads** (14-1963)

[Qi Zhao](#), Beijing Jiaotong University, China

[Guohua Song](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

**Estimating Fuel Consumption and Carbon Footprint at Signalized Intersections Using Probe Vehicle Trajectories** (14-2285)

[Mecit Cetin](#), Old Dominion University, Norfolk

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

**Fuel-Optimal Vehicle Throttle Control: Model Logic and Preliminary Testing** (14-0433)

[Raj Kishore Kamalanathsharma](#), Virginia Tech Transportation Institute

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

**Auditing Kansas Department of Transportation Vehicle Fleet Fuel Use and Carbon Footprint** (14-3598)

[Edward Peltier](#), University of Kansas

[Wai Oswald Chong](#), Arizona State University

[Eric Nielsen](#), University of Kansas

[Jeremiah Johnson](#), University of Kansas

**Trilevel Model with Environmental Considerations in Highway Alignment Optimization** (14-0376)

[Sabyasachee Mishra](#), University of Memphis

[Min-Wook Kang](#), University of South Alabama

[Manoj K. Jha](#), Beulah Transportation Infrastructure, and Energy Group

**Life-Cycle Greenhouse Gases and Energy Consumption for Material and Construction Phases of Pavement with Traffic Delay** (14-4893)

[Imad L. Al-Qadi](#), University of Illinois, Urbana-Champaign

[Rebekah Yang](#), University of Illinois, Urbana-Champaign

[Hasan Ozer](#), University of Illinois, Urbana-Champaign

[Imad L. Al-Qadi](#), University of Illinois, Urbana-Champaign

**Impacts of Restaurant Drive-Through Configurations on Vehicle Emissions** (14-4659)

[Keziah Hill](#), Texas Southern University

[Fengxiang Qiao](#), Texas Southern University

[Mehdi Azimj](#), Texas Southern University

[Lei Yu](#), Texas Southern University

**Effects of Intersection Lane Configuration on Traffic Emissions** (14-2592)

[Xue Bing](#), Jiaotong University, China

[Yuming Jiang](#), Shanghai Jiao Tong University, China

[Chi Zhang](#), Jiaotong University, China

[Jian John Lu](#), University of South Florida

[Yi Zhang](#), Jiaotong University, China

**Characterization of On-Road Emissions and Operational Efficiencies of Front-Loader Diesel Refuse Trucks** (14-5366)

[Mohammad Haft-Javaherian](#), University of Nebraska, Lincoln

[Elizabeth G. Jones](#), University of Nebraska, Lincoln

[Shannon L. Bartelt-Hunt](#), University of Nebraska, Lincoln

[Gurdas Singh Sandhu](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Comparison of Real-World Light-Duty Gasoline Vehicle Emissions for High-Altitude Mountainous Versus Low-Altitude Piedmont Study Areas** (14-1267)

[Jiangchuan Hu](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Effect of Drive Cycle and Fuel Type on Ultrafine Particle Number Emissions Model Input Selection** (14-4588)

[Tyler Feralio](#), University of Vermont

[Britt A. Holmen](#), University of Vermont

**Delay Correction Model for Estimating Bus Emissions at Intersections Based on Vehicle-Specific Power Distributions** (14-1956)

[Xixi Zhou](#), Beijing Jiaotong University, China

[Guohua Song](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

**Development of Speed Correction Factors Based on Speed-Specific Vehicle-Specific Power Distributions for Urban Restricted-Access Roadways in Beijing** (14-1953)

[Guohua Song](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Yizheng Wu](#), Beijing Jiaotong University, China

**Effects of Transportation Emissions on Air Quality in Southeast Los Angeles County** (14-5355)

[Edward Carr](#), ICF International

[Jeffrey Ang-Olson](#), ICF International

[Arlene Rosenbaum](#), ICF International

**Simulating Air Quality Impacts of Traffic Calming Schemes in a Dense Urban Neighborhood** (14-4052)

[Golnaz Ghafghazi](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Demonstrating a Bottom-Up Framework for Evaluating Energy and Emissions Performance of Various Electric Rail Transit Options** (14-4130)

[Franklin Gbologah](#), Georgia Institute of Technology

[YanZhi Xu](#), Georgia Institute of Technology

[Michael Owen Rodgers](#), Georgia Institute of Technology

[Randall Guensler](#), Georgia Institute of Technology

**Effect of Reducing Maximum Cycle Length on Roadside Air Quality and Travel Times on a Corridor in Portland, Oregon** (14-2779)

[Christine M. Kendrick](#), City of Portland, Oregon

[David Urowsky](#), Portland Bureau of Transportation

[Willie Kiplangat Rotich](#), City of Portland, Oregon

[Peter J.V. Koonce](#), City of Portland, Oregon

[Linda George](#), Portland State University

**Fuel and Toll Pricing: Assessment of Effectiveness in Emission Control** (14-2547)

[Tânia Fontes](#), FEUP

[Sérgio Filipe Ramos Pereira](#), University of Aveiro, Portugal

[Jorge Bandeira](#), University of Aveiro, Portugal

[Margarida Cabrita Coelho](#), University of Aveiro, Portugal

**Analysis of Air Pollution Impacts from PierPASS Program in Alameda Corridor, California** (14-5529)

[Ankoor Bhagat](#), University of California, Irvine

[Jean-Daniel Maurice Saphores](#), University of California, Irvine

[R. Jayakrishnan](#), University of California, Irvine

[Jaeyoung Jung](#), University of California, Irvine

**Influence of Highway Traffic Flow Condition on Pollutant Emissions of Diesel Passenger Cars Using Driving Simulator** (14-0372)

[Maria Rosaria De Blasiis](#), Roma Tre University, Italy

[Mauro Di Prete](#), Institute of Research for Eco-Sustainable Engineering, Italy

[Claudia Guattari](#), Roma Tre University, Italy

[Valerio Veraldi](#), Roma Tre University, Italy

[Giancarlo Chiatti](#), Roma Tre University, Italy

[Fulvio Palmieri](#), Roma Tre University, Italy

**Microscopic Assessment of Vehicular Emissions for General Use Lanes and Managed Lanes: Case Study in Orlando, Florida** (14-5543)

[Hatem Abou-Senna](#), University of Central Florida

[Essam Radwan](#), University of Central Florida

**Modeling and Evaluating Short-Term On-Road PM<sub>2.5</sub> Emission Factor Using Different Traffic Data Sources** (14-3253)

[Hao Liu](#), University of Cincinnati

[Heng Wei](#), University of Cincinnati

[Zhuo Yao](#), University of Cincinnati

[Hui Ren](#), University of Cincinnati

[Qingyi Ai](#), University of Cincinnati

**In-Use Measurement of Activity, Fuel Use, and Emissions of Front-Loader Refuse Trucks** (14-1269)

[Gurdas Singh Sandhu](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

[Shannon L. Bartelt-Hunt](#), University of Nebraska, Lincoln

[Elizabeth G. Jones](#), University of Nebraska, Lincoln

**Development of Operating Mode ID Distributions for Different Types of Roadways Under Different Congestion Levels for Vehicle Emission Assessment Using MOVES** (14-5402)

[Yi Qj](#), Texas Southern University

[Ameena Padiath](#), Texas Southern University

[Lei Yu](#), Texas Southern University

**Comparing Predictions from CAL3QHCR and AERMOD Models for Highway Applications** (14-4880)

[Michael Claggett](#), Federal Highway Administration

**Improvements to CAL3QHCR Model** (14-5142)

[Michael Claggett](#), Federal Highway Administration

**Simulating transit emissions under various scenarios affecting operations: A corridor-level analysis** (14-4060)

[Ahsan Alam](#), McGill University, Canada

[Ehab Ismail Diab](#), McGill University, Canada

[Ahmed M. El-Geneidy](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Greenhouse Gas and Urban Congestion: Incorporating of Carbon Dioxide Emissions and Associated Fuel Consumption into Texas A&M Transportation Institute's Urban Mobility Report** (14-3217)



[William L. Eisele](#), Texas A&M Transportation Institute  
[Tyler Fossett](#), Texas A&M Transportation Institute  
[David Lynn Schrank](#), Texas A&M Transportation Institute  
[Mohamadreza Farzaneh](#), Texas A&M Transportation Institute  
[Paul Meier](#), University of Wisconsin, Madison  
[Scott Williams](#), University of Wisconsin, Madison

**Identification and Characterization of PM2.5 and VOC Hot Spots on Arterial Corridor by Integrating Probe Vehicle, Traffic, and Land Use Data** (14-5660)

[Katherine E. Bell](#), Portland State University  
[Miguel Figliozzi](#), Portland State University  
[Alexander York Bigazzi](#), Portland State University  
[Adam Moore](#), Portland State University

**Trajectory-Based Vehicle Energy and Emissions Estimation for Signalized Arterials Using Mobile Sensing Data** (14-2125)

[Zhanbo Sun](#), Western Michigan University  
[Xuegang \(Jeff\) Ban](#), Rensselaer Polytechnic Institute  
[Peng Hao](#), University of California, Riverside

**Modeling Truck Activity Using Short-Term Traffic Counts for Reliable Estimation of Heavy-Duty Truck Emissions in Urban Areas** (14-4350)

[Harikishan Perugu](#), California Air Resources Board  
[Heng Wei](#), University of Cincinnati  
[Zhuo Yao](#), University of Cincinnati

**575** (CGP14-011)

Tuesday, January 14, 2014, 10:45am-12:30pm, Hilton, International Center

**International Transportation Air Quality Research**

[Song Bai](#), Sonoma Technology, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality; Committee on International Activities*

**Evaluating Emission Mitigation Potential of Shanghai Transportation Policies Using Long-Range Energy Alternatives Planning System Model** (14-3510)

[Li Ye](#), Tongji University, China  
[Lei Bao](#), Tongji University, China  
[Jin Bao](#), Shanghai Municipal Engineering Design Institute Company, Ltd., China

**Emission Characteristics of Heavy-Duty Diesel Transit Buses at Intersections of Urban Area: Case Study in Beijing** (14-2003)

[Jinxuan Lai](#), Beijing Jiaotong University, China  
[Lei Yu](#), Texas Southern University  
[Guohua Song](#), Beijing Jiaotong University, China  
[Xumei Chen](#), Beijing Jiaotong University, China

**Investigating Effect of Odd-Even Day Traffic Restriction Policy on Tehran Air Quality** (14-4257)

[Hossein Shahbazi](#), Sharif University of Technology, Iran

[Vahid Hosseini](#), Sharif University of Technology, Iran

[Masoud Hamedj](#), University of Maryland, College Park

**Gases and Particulate Matter Vehicle Emission Factors Measured in Two Road Tunnels in São Paulo, Brazil** (14-0528)

[Pedro José Pérez-Martínez](#), Polytechnic University of Madrid, Spain

**Carbon Dioxide Emissions from Highway Construction: Case Study in Southwest China** (14-5222)

[Xianwei Wang](#), Tongji University, China

[Lingsheng Wu](#), Tongji University, China

[Dongyuan Yang](#), Tongji University, China

Workshop (W)s

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**144** (CGW14-007)

Sunday, January 12, 2014, 9:00am-12:00pm, Hilton, Jefferson West

**Particulate Matter Hot Spot Analyses: Research and Applications, Part 1 (Part 2, Session 196)**

[Michael Claggett](#), Federal Highway Administration, presiding

*Sponsored by Committee on Transportation and Air Quality*

The workshop provides example research and application efforts in the course of the regulatory application of EPA's Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas. Such example efforts will include analyses prepared to support specific transportation projects as well as case studies completed by state departments of transportation and air pollution control agencies for typical projects.

**PM Hot Spot Modeling: Lessons Learned in the Field** (P14-6412)

[Chris Dresser](#), U.S. Environmental Protection Agency

**PM<sub>2.5</sub> Hot Spot Analysis of Elgin O'Hare Expressway West Bypass** (P14-6413)

[Rebecca Frohning](#), Puget Sound Regional Council

**Applying EPA PM Hot Spot Analysis Guidance on I-69 Section 5 Project: Bloomington to Martinsville** (P14-6414)

[Daniel Szekeres](#), Michael Baker Jr., Inc.

[Robert d'Abadie](#), Michael Baker Corporation

**Investigation in Transportation Conformity Particulate Matter Hot Spot Air Quality Modeling: Illinois Highway and Arterial Case Studies** (P14-6415)

[Suriya Vallamsundar](#), University of Illinois, Chicago

[Jane Jie Lin](#), University of Illinois, Chicago

**Case Studies of Project-Level PM Hot Spot Modeling of Highways** (P14-6416)

[Michael Claggett](#), Federal Highway Administration

196 (CGW14-010)

Sunday, January 12, 2014, 1:30pm- 4:30pm, Hilton, Jefferson West

[Particulate Matter Hot Spot Analyses: Research and Applications, Part 2 \(Part 1, Session 144\)](#)

[Michael Claggett](#), Federal Highway Administration, presiding

*Sponsored by Committee on Transportation and Air Quality*

The workshop provides example research and application efforts in the course of the regulatory application of EPA's Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas. Such example efforts will include analyses prepared to support specific transportation projects as well as case studies completed by state departments of transportation and air pollution control agencies for typical projects.

[EPA Guidance on Selecting Representative Background Data for Quantitative PM Hot Spot Analyses](#)

(P14-6417)

[Chris Dresser](#), U.S. Environmental Protection Agency

[Background and Ambient Near-Road PM Monitoring Insights and Analysis Strategies](#) (P14-6418)

[Song Bai](#), Sonoma Technology, Inc.

[Adam Pasch](#), Sonoma Technology, Inc.

[Douglas S. Eisinger](#), Sonoma Technology, Inc.

[Hilary Hafner](#), Sonoma Technology, Inc.

[Andrew Rutter](#), Sonoma Technology, Inc.

[Alex Karner](#), Arizona State University

[Leo Tidd](#), Louis Berger Group, Inc.

[Andrea Polidori](#), South Coast Air Quality Management District

[Monitoring Study of Ambient PM<sub>2.5</sub> Concentrations near the Capital Beltway in Largo, Maryland](#) (P14-6421)

[Helen Ginzburg](#), Parsons Brinckerhoff

[Xiaobo Liu](#), Parsons Brinckerhoff

[Michael S. Baker](#), URS, Inc.

[Robert E. Shreeve](#), Maryland State Highway Administration

[R.K.M. Jayanty](#), RTI International

[David Campbell](#), Desert Research Institute

[Barbara Zielinska](#), Desert Research Institute

[EPA-FHWA Near-Road Collaboration Project: National Near-Road MSAT Study--Results of PM Analysis](#)

(P14-6422)

[Evelyn Sue Kimbrough](#), U.S. Environmental Protection Agency

[Richard W. Baldauf](#), U.S. Environmental Protection Agency

[Gayle Hagler](#), U.S. Environmental Protection Agency

[Meg Patulski](#), U.S. Environmental Protection Agency

[Chris Dresser](#), U.S. Environmental Protection Agency

[Tim Hanley](#), U.S. Environmental Protection Agency

[Victoria B Martinez](#), Federal Highway Administration

**[Open discussion](#)** (P14-6474)

[Michael Claggett](#), Federal Highway Administration

Published Meeting - Committee (M)s

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CGM14-001

Monday, January 13, 2014, 10:15am-12:00pm, Hilton, Oak Lawn

[Regional Air Quality Analysis Subcommittee, ADC20\(2\)](#)

[Douglas S. Eisinger](#), Sonoma Technology, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality*

CGM14-002

Monday, January 13, 2014, 8:00am- 9:45am, Hilton, Oak Lawn

[Project Level Air Quality Analysis Subcommittee, ADC20\(1\)](#)

[Christopher Voigt](#), Virginia Department of Transportation, presiding

*Sponsored by Committee on Transportation and Air Quality*

CGM14-035

Monday, January 13, 2014, 3:45pm- 7:00pm, Hilton, Columbia Hall 11 & 12

[Transportation and Air Quality Committee](#)

[Jane Jie Lin](#), University of Illinois, Chicago, presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Motor Vehicle Emissions Simulator Input Data: Evolution and sensitivity Analysis of Data Submitted for 2011 National Emissions Inventory](#)** (14-2989)

[John Koupal](#), Eastern Research Group, Inc.

[Tim DeFries](#), Eastern Research Group, Inc.

[Cindy Palacios](#), Eastern Research Group, Inc.

[Scott Fincher](#), Eastern Research Group, Inc.

[Diane Preusse](#), Eastern Research Group, Inc.

CGM14-053

Monday, January 13, 2014, 1:30pm- 3:15pm, Hilton, Oak Lawn

[Transportation Air Quality Research Subcommittee, ADC20\(3\)](#)

[Josias Zietsman](#), Texas A&M Transportation Institute , presiding

*Sponsored by Committee on Transportation and Air Quality*

ADC20 Cosponsored Sessions (only editable by the primary committee sponsor)

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**KFM14-008**

Tuesday, January 14, 2014, 8:00am- 9:45am, Hilton, Albright

[Air Quality Issues in Small and Medium-Sized Communities Subcommittee, ADA30\(2\)](#)

[Evelyn Sue Kimbrough](#), U.S. Environmental Protection Agency, presiding

**MMW14-007**

Sunday, January 12, 2014, 1:30pm- 4:30pm, Hilton, Columbia Hall 11

[Reconciling Transportation and Air Quality Planning to Promote Sustainable Development](#)

[Richard W. Baldauf](#), U.S. Environmental Protection Agency, presiding

This workshop provides timely, pertinent information on the latest research on the existing public health issues related to pollution exposure near large roadways. Individual presentations will be followed by a panel discussion to identify techniques to mitigate air pollution exposure, identify future research needs, and provide transportation professionals with ways to reconcile issues related to compact, infill development and the potential for increased public exposure to emissions.

[Air Quality Benefits of Compact Development](#) (P14-5485)

[Mikhail V. Chester](#), Arizona State University

[Smart Growth Development and Air Pollution Exposure Concerns](#) (P14-5486)

[John V. Thomas](#), U.S. Environmental Protection Agency

[Methods to Assess Relationships Between Development Options and Air Quality Impacts](#) (P14-5487)

[Jonathan Nadler](#), Southern California Association of Governments

[Performance Metrics That Can Assess Sustainable Development Options and Corresponding Air Quality Impacts](#) (P14-5488)

[April Marchese](#), Federal Highway Administration

[Comparing Benefits of Active Transport with Concern Related to Increased Air Pollution Exposure](#) (P14-5489)

[Patricia Koman](#), University of Michigan

[Best Practices for Reducing Exposure to Traffic Emissions Near Larger Roadways](#) (P14-5490)

[Douglas S. Eisinger](#), Sonoma Technology, Inc.

**Discussants** (P14-6025)

[Linda Wheaton](#), California Department of Housing and Community Development

[Dahlia Chazan](#), Arup

[Jonathan Nadler](#), Southern California Association of Governments

**RCM14-039**

Monday, January 13, 2014, 7:30pm- 9:30pm, Marriott, Washington B1

[Traffic Simulation Models Joint Subcommittee of AHB45, AHB40, AHB25, AHB20, ADB30, AHB55, ADC20](#)

[George F. List](#), North Carolina State University, Raleigh, presiding

**2013 Data**

2 Paper/Conference Sessions

1 Workshop

3 Published Meetings

7 Cosponsored Sessions/Meetings

Paper or Conference Session (S)s

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**714** (CGS13-040)

Wednesday, January 16, 2013, 8:00am- 9:45am, Hilton, Columbia Hall 5

[Ecodriving: Empirical Study and Modeling](#)

[Jane Jie Lin](#), University of Illinois, Chicago, presiding

*Sponsored by Committee on Transportation and Air Quality*

**[Dynamic Ecodriving in Northern California: Study of Survey and Vehicle Operations Data from Ecodriving Feedback Device](#)** (13-4723)

[Elliot W. Martin](#), University of California, Berkeley

[Kanok Boriboonsomsin](#), University of California, Riverside

[Nelson D. Chan](#), University of California, Berkeley

[Nigel Williams](#), University of California, Riverside

[Susan A. Shaheen](#), University of California, Berkeley

[Matthew J. Barth](#), University of California, Riverside

**[Are Ecolanes a Sustainable Option to Reduce Emissions in a Medium-Sized European City?](#)** (13-0550)

[Jorge Filipe Marto Bandeira](#), University of Aveiro, Portugal

[Paulo Jorge Fernandes](#), University of Aveiro, Portugal

[Hugo Rodrigues](#), University of Aveiro, Portugal  
[Jorge Bandeira](#), University of Aveiro, Portugal  
[Sérgio Pereira](#), University of Aveiro, Portugal  
[Asad J. Khattak](#), University of Tennessee, Knoxville  
[Margarida Cabrita Coelho](#), University of Aveiro, Portugal

**[Ecorouting Model Considering Microscopic Vehicle Operating Conditions](#)** (13-4237)

[Yu Nie](#), Northwestern University  
[Qianfei Li](#), Northwestern University

**[Ecofriendly Navigation System Development for Heavy-Duty Trucks](#)** (13-4548)

[George Scora](#), University of California, Riverside  
[Kanok Boriboonsomsin](#), University of California, Riverside  
[Matthew J. Barth](#), University of California, Riverside

**[Ecodrive Application: Algorithmic Development and Preliminary Testing](#)** (13-0401)

[Kyoungcho Ahn](#), Virginia Polytechnic Institute and State University  
[Hesham Rakha](#), Virginia Polytechnic Institute and State University  
[Sangjun Park](#), Chosun University, South Korea

**585** (CGS13-041)

Tuesday, January 15, 2013, 1:30pm- 3:15pm, Hilton, Jefferson West  
**[Emissions and Air Quality Analysis, Management, and Regulation of Transit Facilities](#)**  
[Colin William Murphy](#), University of California, Davis, presiding  
*Sponsored by Committee on Transportation and Air Quality*

**[Air Quality Regulation in Metros: Benchmarking Approach](#)** (13-2476)

[Judith Michelle Cohen](#), Imperial College London, United Kingdom  
[Richard Anderson](#), Imperial College London, United Kingdom  
[Patricia C. Melo](#), Imperial College London, United Kingdom  
[Robin Charles d'Aubyn Hirsch](#), Imperial College London, United Kingdom  
[Daniel J. Graham](#), Imperial College London, United Kingdom

**[Meta-Analysis of Transit Bus Exhaust Emissions](#)** (13-4618)

[Erin Cooper](#), EMBARQ/World Resources Institute  
[Magdala Arioli](#), EMBARQ Brazil  
[Aileen Carrigan](#), EMBARQ World Resources Institute  
[Umang Jain](#), EMBARQ/World Resources Institute, India

**[Idle Monitoring, Real-Time Intervention, and Emission Reductions from Cobb County, Georgia School Buses](#)** (13-4964)

[Yanzhi Xu](#), Georgia Institute of Technology  
[Vetri Venthan Elango](#), Georgia Institute of Technology  
[Randall Guensler](#), Georgia Institute of Technology  
[Sara Khoeini](#), Georgia Institute of Technology

**Statistical Study of Variables Associated with Particulate Matter Exposure Levels at Bus Shelters** (13-2845)

[Adam Moore](#), Portland State University

[Miguel Figliozzi](#), Portland State University

Workshop (W)s

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**187** (CGW13-006)

Sunday, January 13, 2013, 1:30pm- 4:30pm, Hilton, Lincoln East

**On-Road and Off-Road Diesel Emissions Modeling, Monitoring, and Innovative Controls**

[Jane Jie Lin](#), University of Illinois, Chicago, presiding

*Sponsored by Committee on Transportation and Air Quality*

Convening both practitioners and researchers, this workshop shares experience on the following issues related to on-road and off-road emissions from diesel engines: modeling of on-road–off-road diesel emissions (e.g., MOVES default in truck fleet mix, truck activity, local data); near-roadside monitoring of truck particulate matter and nitrogen dioxide emissions; and funding, implementing, and tracking innovative controls (ports, freight corridors).

**Welcome and Purpose of the Workshop** (P13-7154)

[Jane Jie Lin](#), University of Illinois, Chicago

**Improving Emission Inventories for Off-Road Sources** (P13-7155)

[John Koupal](#), Eastern Research Group, Inc.

[Sandeep Kishan](#), Eastern Research Group, Inc.

[Rick Baker](#), Eastern Research Group, Inc.

[Tim DeFries](#), Eastern Research Group, Inc.

**Effects of Errors on Vehicle Emission Rates from Portable Emissions Measurement Systems** (13-4018)

[Gurdas Singh Sandhu](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Comparison of Locomotive Emissions Measured During Dynamometer Versus Rail Yard Engine Load Tests** (13-1415)

[Brandon Graver](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Modeling In-Use Construction Equipment Emissions for Highway Projects: Framework, Methodology, and Case Analysis** (13-3044)

[Song Bai](#), Sonoma Technology, Inc.

[Douglas S. Eisinger](#), Sonoma Technology, Inc.

[Deborah Niemeier](#), University of California, Davis

[Paul E. Benson](#), Sonoma Technology, Inc.

[Stephen Reid](#), Sonoma Technology, Inc.



[Beverly Chenausky](#), Arizona Department of Transportation

**Beyond 2020: Truck Emission Reduction Strategies for Southern California** (P13-6521)

[Philip M. Sheehy](#), ICF International

[Jeffrey Ang-Olson](#), ICF International

[Louis Browning](#), ICF International

Published Meeting - Committee (M)s

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CGM13-001

Monday, January 14, 2013, 5:45pm- 7:15pm, Hilton, Oak Lawn

[Regional Air Quality Analysis Subcommittee, ADC20\(2\)](#)

[Douglas S. Eisinger](#), Sonoma Technology, Inc., presiding

*Sponsored by Committee on Transportation and Air Quality*

CGM13-002

Monday, January 14, 2013, 3:45pm- 5:30pm, Hilton, Oak Lawn

[Project Level Air Quality Analysis Subcommittee, ADC20\(1\)](#)

[Christopher Voigt](#), Virginia Department of Transportation, presiding

*Sponsored by Committee on Transportation and Air Quality*

CGM13-035

Tuesday, January 15, 2013, 3:45pm- 7:15pm, Hilton, Columbia Hall 1

[Transportation and Air Quality Committee](#)

[Jane Jie Lin](#), University of Illinois, Chicago, presiding

*Sponsored by Committee on Transportation and Air Quality*

ADC20 Cosponsored Sessions (only editable by the primary committee sponsor)

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**CGP13-002**

Tuesday, January 15, 2013, 10:45am-12:30pm, Hilton, International Center

[Current Issues in Transportation and the Environment](#)

[Eduardo Maeyama](#), Parsons Brinckerhoff, presiding

**Ecology and Transportation** (P13-5299)

Alexander Fredric Levy, ARCADIS

**Waste Management and Resource Efficiency in Transportation** (P13-5645)

Edward D. Wallingford, Virginia Department of Transportation

David Emil Soltis, Consultant

**Environmental Analysis in Transportation** (P13-5837)

Charles 'Muggs' Stoll, San Diego Association of Governments

Christopher Gesing, Michael Baker Jr., Inc.

**Road Construction, Repair, and Maintenance: Review of the Impact on the Environment** (13-3167)

Kenya Rolle, Florida A&M University

Doreen Clemence Kobelo, Florida A&M University

**Cool Pavement Strategies for Mitigating Heat Island: Do They Help Reduce Energy Use?** (P13-5971)

Hui Li, University of California, Davis

John Harvey, University of California, Davis

David Jones, University of California, Davis

**Streamlined Path to a New Urban Boulevard in Music City** (P13-5972)

Nancy T. Skinner, Parsons Brinckerhoff, Inc.

Jonathan Cleghon, Metropolitan Government of Nashville

**Investigation of Environmental Impact of Urban Road Capacity Reductions** (P13-5973)

Aravinth Thiyagarajah, Imperial College London, United Kingdom

Robin J. North, Imperial College London, United Kingdom

**NEPA-CEQA and California High-Speed Rail: Where We Have Been and Where We Are Headed** (P13-5974)

Lynne Marie Whately, California High-Speed Rail Program Management Team

Bryan Keith Porter, Parsons Brinckerhoff, Sacramento

**Assessing Microscale Variation in Vehicle Emissions and Pollutant Concentrations for Use in Environmental and Epidemiological Studies** (P13-5975)

David Williams, Imperial College London, United Kingdom

Robin J. North, Imperial College London, United Kingdom

**Maryland's Watershed Resources Registry: GIS Tool for Broad-Based Collaborative Planning and Protection from a Watershed Perspective** (P13-5976)

Donna Buscemi, Maryland State Highway Administration

Heather Blair Lowe, Maryland State Highway Administration

**Development of GIS Tool for Assessment of Projected Sea Level and Tidal Change Effects on Transportation Infrastructure in Florida** (P13-5977)

Alexis Thomas, University of Florida

**Incorporating Advances in Context-Sensitive Solutions into Interdisciplinary-Level Graduate Course** (P13-5978)

Richard V. Taylor, Federal Highway Administration

Margaret McFarland, University of Maryland

**Measuring Emissions from a General Aviation Engine Burning Alternative Jet Fuels** (P13-6000)

[Edward Peltier](#), University of Kansas

[Jeremiah Johnson](#), University of Kansas

[Alex Karwas](#), University of Kansas

[Ray Taghavi](#), University of Kansas

**NCHRP Project 25-25, Task 71: Templates for Project-Level Analysis with MOVES, CAL3QHC/R, and AERMOD** (P13-6001)

[Maureen Mullen](#), TranSystems Corporation

[Leo Tidd](#), Louis Berger Group, Inc.

**Emissions Exposure Modeling System for Assessing Impacts of Low-Emission Truck Technology** (P13-6002)

[Glareh Amirjamshidi](#), University of Toronto, Canada

**Finding Environmental History During the Environmental Process** (P13-6282)

[Kenneth J. Basalik](#), CHRS, Inc.

**Dairy Farming in Nineteenth-Century Delaware: Archaeological Data Recovery at Weldin Site, 7-NC-B11** (P13-6284)

[Barbara Shaffer](#), McCormick Taylor, Inc.

**Taneytown Historic District Interpretive Program** (P13-6286)

[Anne E. Bruder](#), Maryland State Highway Administration

**Multi-instrument Geophysical Investigations of Historic Cemeteries** (P13-6319)

[Beverly A. Chiarulli](#), Indiana University of Pennsylvania

[Meghan Pace](#), Indiana University of Pennsylvania

**Making the Static Dynamic: Using Everyday Technology to Engage the Public** (P13-6321)

[Hope E. Luhman](#), Louis Berger

**In the Shadow of Lake Champlain Bridge: Challenges and Successes in Preserving 9,000 Years of Vermont History Within a Construction Site** (P13-6390)

[Jeannine Russell](#), Vermont Agency of Transportation

**Over the River and Through the Woods: Data Recovery Excavations at Baum Pumping Station Road Site (36AR0539)** (P13-6394)

[Richard White](#), AD Marble & Company

**GIS-Based Expert Systems Model for Predicting Habitat Suitability of Blackside Dace in Southeastern Kentucky** (13-5059)

[Benjamin L. Blandford](#), University of Kentucky

[John Ripy](#), University of Kentucky

[Theodore H. Grossardt](#), Kentucky Transportation Cabinet

**Archaeological Data Recovery Excavation at Scudder Falls Bridge in New Jersey and Pennsylvania** (P13-6474)

[Alan Tabachnick](#), Dovetail Cultural Resource Group

**Third Time's the Charm: Well Construction at Houston-LeCompt Site Within Route 301 Corridor, New Castle County, Delaware** (P13-6475)

[Kerri Barile](#), Dovetail Cultural Resource Group

**U.S. Route 301 Archaeology Blog** (P13-6478)

[David S. Clarke](#), Delaware Department of Transportation

**Fuel Economy Impacts of Manual, Conventional Cruise Control, and Predictive Eco-Cruise-Control Driving** (13-0407)

[Sangjun Park](#), Chosun University, South Korea

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

[Kyoungho Ahn](#), Virginia Polytechnic Institute and State University

[Kevin Moran](#), NAVTEQ

**Virginia Tech Comprehensive Power-Based Fuel Consumption Model: Model Validation and Calibration Considerations** (13-0461)

[Sangjun Park](#), Chosun University, South Korea

[Hesham Rakha](#), Virginia Polytechnic Institute and State University

[Kyoungho Ahn](#), Virginia Polytechnic Institute and State University

[Kevin Moran](#), NAVTEQ

**Fuel Consumption and Vehicle Emission Models for Evaluating Environmental Impacts of Electronic Toll Collection System in Beijing** (13-0845)

[Jiancheng Weng](#), Beijing University of Technology, China

[Lili Liu](#), Beijing University of Technology, China

[Mengjia Wang](#), Beijing Sutong Technology Co. Ltd., China

[Jian Rong](#), Beijing University of Technology, China

**Quantifying Effects of Land Use and Socioeconomics on Generation of Traffic Emissions and Individual Exposure to Air Pollution** (13-1184)

[Timothy M.N. Sider](#), McGill University, Canada

[Ahsan Alam](#), McGill University, Canada

[Muhammad Zukari](#), McGill University, Canada

[Hussam Dugum](#), McGill University, Canada

[Nathan Goldstein](#), McGill University, Canada

[Naveen Eluru](#), University of Central Florida

[Marianne Hatzopoulou](#), McGill University, Canada

**Emissions and Built Form: Analysis of Six Canadian Cities** (13-1498)

[Taha Hossein Rashidi](#), University of New South Wales, Australia

[Erin Toop](#), Neptis Foundation

[Xudong Liu](#), McMaster University, Canada

[Pavlos Kanaroglou](#), McMaster University, Canada

**Method for Measuring the Ratio of In-Vehicle to Near-Vehicle Exposure Concentrations of Airborne Fine Particles** (13-1581)

[Wan Jiao](#), North Carolina State University, Raleigh

[H. Christopher Frey](#), North Carolina State University

**Marginal Costs of Freeway Traffic Congestion with On-Road Pollution Exposure Externality** (13-1609)

[Alexander York Bigazzi](#), Portland State University

[Miguel Figliozzi](#), Portland State University

**Spatial Transferability Analysis of the Regional Automobile-Specific Household-Level Carbon Dioxide**

**(CO2) Emissions Models** (13-1645)

[Saidi Siuhi](#), Abu Dhabi University, United Arab Emirates

[Judith L. Mwakalonge](#), South Carolina State University

[Judy A. Perkins](#), Prairie View A&M University

**Modeling Air Quality Impacts of Feedstock Transportation for Cellulosic Biofuel Production in Tennessee** (13-1650)

[Tun-Hsiang Edward Yu](#), University of Tennessee, Knoxville

[James A. Larson](#), University of Tennessee, Knoxville

[Burton C. English](#), University of Tennessee, Knoxville

[Joshua S. Fu](#), University of Tennessee, Knoxville

[Daniel De La Torre Ugarte](#), University of Tennessee, Knoxville

[Jeongran Yun](#), University of Tennessee, Knoxville

[Jimmy Calcagno](#), University of Tennessee, Knoxville

[Bradly Wilson](#), University of Tennessee, Knoxville

**Coherent Approach for Modeling and Nowcasting Hourly Near-Road Black Carbon Concentrations in Seattle, Washington** (13-1792)

[Runze Yu](#), University of Washington

[Xiaoyue \(Cathy\) Liu](#), University of Utah

[Yinhai Wang](#), University of Washington

**Feasibility Study of Fuel Consumption Prediction Model by Integrating Vehicle-Specific Power and Controller Area Network Bus Technology** (13-2201)

[Yizheng Wu](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Guohua Song](#), Beijing Jiaotong University, China

[Long Xu](#), Beijing Transportation Research Center, China

**Influence of Ventilation Mode and Out-Vehicle Pollution on In-Vehicle PM2.5 Concentration** (13-2549)

[Layale Abi-Esber](#), American University of Beirut, Lebanon

[Mutasem El-Fadel](#), American University of Beirut, Lebanon

**Development of Simulated Driving Cycles: Case Study of Waterfront Area in Toronto, Canada** (13-2648)

[Glareh Amirjamshidi](#), University of Toronto, Canada

[Matthew J. Roorda](#), University of Toronto, Canada

**Decarbonization of Toll Plazas: Impact Assessment of Toll Collection System Management** (13-2687)

[Sara Hernandez](#), Universidad Politecnica de Madrid, Spain

[Andres Monzon](#), Universidad Polytecnica de Madrid, Spain

[Natalia Sobrino](#), Universidad Politécnic de Madrid, Spain

**Comparisons of Dcretionary Passenger Vehicle Idling Behavior by Season and Trip Stage with Global Positioning System and Onboard Diagnostic Devices** (13-2766)

[Jonathan R. Dowds](#), University of Vermont

[James Sullivan](#), University of Vermont

[Lisa Aultman-Hall](#), University of Vermont

**Better Understanding of Taxi Emissions in Shenzhen, China, Based on Floating-Car Data** (13-2977)

[Lin-Jun Yu](#), Chinese Academy of Sciences

[Zhong-Ren Peng](#), University of Florida

[YaLan Liu](#), Institute of Remote Sensing Applications, Chinese Academy of Sciences

**Spatiotemporal Analysis of Car Distance and Greenhouse Gases and Effect of Built Environment:**

**Latent Class Regression Analysis** (13-2984)

[Seyed Amir Hossein Zahabi](#), McGill University, Canada

[Luis Fernando Miranda-Moreno](#), McGill University, Canada

[Zachary Rupert Patterson](#), Concordia University, Canada

[Philippe Barla](#), University of Laval, Canada

**Evaluating Accuracy of Approaches to Integrating Microscopic Traffic Simulators with Emissions**

**Models for Project-Level Emissions Analysis** (13-3228)

[Yunjie Zhao](#), State University of New York, Buffalo

[Adel W. Sadek](#), State University of New York, Buffalo

**Estimates of Critical Values of Aggressive Acceleration from Viewpoint of Fuel Consumption and**

**Emissions** (13-3443)

[Eungcheol Kim](#), University of Incheon, South Korea

[Eunjin Choi](#), University of Incheon, South Korea

**Using MOVES to Conduct Greenhouse Gas Inventory for On-Road Mobile Sources in Northern New**

**Jersey Region** (13-4015)

[David Kall](#), Cambridge Systematics, Inc.

[David Jackson](#), Cambridge Systematics, Inc.

[Jeffrey Perlman](#), North Jersey Transportation Planning Authority, Inc.

**Simplified Emissions Estimation Methodology Based on MOVES to Estimate Vehicle Emissions from**

**Transportation Assignment and Simulation Models** (13-4402)

[Eren Erman Ozguven](#), Florida State University

[Kaan Mehmet Ali Ozbay](#), New York University

[Shrisan Iyer](#), New York City Transit Authority

**Which Is Greener: Idle or Stop and Restart? Comparing Fuel Use and Emissions for Short Passenger-**

**Car Stops** (13-4606)

[Linda Gaines](#), Argonne National Laboratory

[Eric Rask](#), Argonne National Laboratory

[Glenn Keller](#), Argonne National Laboratory

**Vehicle Emissions and Near-Road Air Quality Modeling for Shanghai, China: Based on Global**

**Positioning System Data from Taxis and Revised MOVES Emission Inventory** (13-4733)

[Haobing Liu](#), Tongji University, China

[Xiaohong Chen](#), Tongji University, China

[Yuqin Wang](#), Tongji University, China

[Shu Han](#), Shanghai DIST Company

**Developing Operating Mode Distribution Inputs for MOVES with a Computer Vision-Based Vehicle**

**Data Collector** (13-4899)

[Zhuo Yao](#), University of Cincinnati  
[Heng Wei](#), University of Cincinnati  
[Zhixia Li](#), University of Wisconsin, Madison  
[Tao Ma](#), University of Cincinnati  
[Hao Liu](#), University of Cincinnati  
[Y. Jeffery Yang](#), US EPA

**Methodology for Generating Individual Vehicle Speed Profile for Estimating Freeway Emissions** (13-5138)

[Jinheoun Choi](#), Korea Transport Institute  
[Stephen G. Ritchie](#), University of California, Irvine  
[Cheol Oh](#), Hanyang University, South Korea

**Evaluation of CO and NOx Emissions from MOVES and MOBILE6.2 in Southeast Texas Using Source-Oriented CMAQ Model** (13-5187)

[Sri Harsha Kota](#), Texas A&M University  
[Qi Ying](#), Texas A&M University  
[Hongliang Zhang](#), Texas A&M University  
[Gunnar W. Schade](#), Texas A&M University

**Analytical Model for Vehicle Emissions at Signalized Intersection: Integrating Traffic and Microscopic Emissions Models** (13-5208)

[Rooholamin Shabihkhani](#), Rutgers University  
[Eric J. Gonzales](#), University of Massachusetts, Amherst

**Development and Comparison of Driving and Environmental Impact Characteristics of Different Driver Types** (13-5211)

[Heejin Jung](#), Virginia Polytechnic Institute and State University  
[Montasir M. Abbas](#), Virginia Polytechnic Institute and State University  
[Antoine Hobeika](#), Virginia Polytechnic Institute and State University  
[Sanghoon Bae](#), Pukyong National University, South Korea

**Method and Case Study for Quantifying Local Emissions Impacts of Transportation Improvement Project Involving Road Realignment and Conversion to Multilane Roundabout** (13-5243)

[Abseen Rifa Anya](#), North Carolina State University, Raleigh  
[Nagui M. Rouphail](#), North Carolina State University, Raleigh  
[H. Christopher Frey](#), North Carolina State University  
[Bin Liu](#), North Carolina State University, Raleigh

**Comparing Predictions from CAL3QHCR and AERMOD Models for Highway Applications** (13-5339)

[Michael Claggett](#), Federal Highway Administration  
[Song Bai](#), Sonoma Technology, Inc.

**Finding Green System Optimal Routing Policies Through Multiscale Dynamic Path Flow Assignment Model** (13-5365)

[Chung-Cheng Lu](#), National Taipei University of Technology, Taiwan  
[Xuesong Zhou](#), Arizona State University

**Comparative Analysis of U.S. Environmental Protection Agency Operating Mode Distribution**

**Generator with Real-World Operating Mode and Emissions Data** (13-0387)

[Robert Chamberlin](#), RSG

[Britt A. Holmen](#), University of Vermont

[Eric Talbot](#), Resource Systems Group, Inc

[Karen M. Sentoff](#), University of Vermont

**Sensitivity Test Analysis of MOVES and AERMOD Models** (13-1590)

[Suriya Vallamsundar](#), University of Illinois, Chicago

[Jane Jie Lin](#), University of Illinois, Chicago

**Incorporating Environmental Measures into a Reliable Freight Routing Model** (13-4185)

[Qianfei Li](#), Northwestern University

[Yu Nie](#), Northwestern University

[Suriya Vallamsundar](#), University of Illinois, Chicago

[Jane Jie Lin](#), University of Illinois, Chicago

[Tito Homem-de-Mello](#), University of Illinois, Chicago

**Role of Heavy-Duty Freight Vehicles in Reducing Emissions on Congested Freeways with Elastic Travel**

**Demand Functions** (13-1607)

[Alexander York Bigazzi](#), Portland State University

[Miguel Figliozzi](#), Portland State University

**Quantifying the Greenhouse Gas Emissions of Local Collection- and-Delivery Points for Last-Mile**

**Deliveries** (13-2498)

[Liyang Song](#), Beijing Jiaotong University, China

[Tom Cherrett](#), University of Southampton, United Kingdom

[Wei Guan](#), Key Lab of Traffic Engineering, Beijing University of Technology

[Baowen Li](#), Beijing Jiaotong University

**Multimodal Freight Transportation Network Design Problem for Reduction of Greenhouse Gas**

**Emissions** (13-3484)

[Suhyeon Kim](#), Seoul National University, South Korea

[Minchoul Park](#), Korea Transport Institute

[Chungwon Lee](#), Seoul National University, South Korea

**Evaluation of Truck Ban Schemes Using Exact Optimization for Vehicle Routing Problem with Time**

**Windows** (13-3498)

[Ali Gul Qureshi](#), Kyoto University, Japan

[Eiichi Taniguchi](#), Kyoto University, Japan

[Tadashi Yamada](#), Kyoto University, Japan

**Modeling and Solving Time- and Load-Dependent Vehicle Routing and Scheduling Problem with**

**Environmental Considerations** (13-3571)

[Konstantinos N. Androutopoulos](#), Athens University of Economics and Business, Greece

[Konstantinos G. Zografos](#), Lancaster University, United Kingdom

**Development and Evaluation of Simplified Version of MOVES for Coupling with Traffic Simulation**

**Model** (13-1201)

[H. Christopher Frey](#), North Carolina State University



[Bin Liu](#), North Carolina State University, Raleigh

**Simulating Environmental Effects of Isolated and Areawide Traffic Calming Schemes Using Traffic Simulation and Microscopic Emissions Modeling** (13-1329)

[Golnaz Ghafghazi](#), McGill University, Canada

[Marianne Hatzopoulou](#), McGill University, Canada

**Regional Scale Dispersion Modeling and Analysis of Directly Emitted Fine Particulate Matter from Highway Vehicles Using AERMOD** (13-3129)

[Gregory Rowangould](#), University of New Mexico

[Seth Contreras](#), University of California, Irvine

**Comparative Analysis of Car-Following Models for Emissions Estimation** (13-0460)

[Guohua Song](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Long Xu](#), Beijing Transportation Research Center, China

**Study of Emissions Benefits of Commercial Vehicle Lane Management Strategies** (13-1608)

[Alexander York Bigazzi](#), Portland State University

[Miguel Figliozzi](#), Portland State University

**Environmentally Conscious Highway Design for Vertical Grades** (13-2125)

[Myunghoon Ko](#), Texas A&M Transportation Institute

[Dominique Lord](#), Texas A&M University

[Josias Zietsman](#), Texas A&M Transportation Institute

**The Impact of Traffic Signal Timing on Sidewalk-Level Particulate Matter Concentrations** (13-4687)

[Courtney Slavin](#), Portland State University

[Miguel Figliozzi](#), Portland State University

**Comparison of Microscale Fuel Consumption Models Based on Vehicle-Specific Power and Ln(TAD) for Light-Duty Vehicles on Urban Roads** (13-2211)

[Qi Zhao](#), Beijing Jiaotong University, China

[Lei Yu](#), Texas Southern University

[Guohua Song](#), Beijing Jiaotong University, China

**Traffic Microsimulation Approach to Evaluation of Vehicle Emissions on One-Way Versus Two-Way Streets: Case Study in Downtown Houston, Texas** (13-2218)

[Jinghui Wang](#), Virginia Polytechnic Institute and State University

[Lei Yu](#), Texas Southern University

[Fengxiang Qiao](#), Texas Southern University

**Fuel-Based Signal Optimization Model** (13-2488)

[Tsai-Yun Liao](#), National Chiayi University, Taiwan

**Historic and Archeological Preservation in Transportation** (P13-6908)

[Antony F. Opperman](#), Virginia Department of Transportation

CGS13-023

Monday, January 14, 2013, 1:30pm- 3:15pm, Hilton, Lincoln West

[Powering the Future: Implementing the Vision of Clean Transportation and Energy Technologies](#)

[Barry R. Wallerstein](#), South Coast Air Quality Management District, presiding

[Overview, Part 1: Policy Drivers, Coordinated Air Quality and Climate Strategies, and Zero and Near-Zero Emission Transportation Technology Developments](#) (P13-6579)

[Peter Greenwald](#), South Coast Air Quality Management District

[Overview, Part 2: Policy Drivers, Coordinated Air Quality and Climate Strategies, and Zero and Near-Zero Emission Transportation Technology Developments](#) (P13-7157)

[Matt Miyasato](#), South Coast Air Quality Management District

[Building the Future, Part 1: How Cutting Edge Transportation Technologies are Helping Create a Clean Freight Network](#) (P13-6580)

[Victor La Rosa](#), Total Transportation Services, Inc.

[Building the Future, Part 2: How Cutting Edge Transportation Technologies are Helping Create a Clean Freight Network](#) (P13-7158)

[Peter Torrellas](#), Innovative Scheduling

[Building the Future, Part 3: How Cutting Edge Transportation Technologies are Helping Create a Clean Freight Network](#) (P13-7159)

[Frank L. Quon](#), Los Angeles County Metropolitan Transportation Authority

[Building the Future, Part 4: How Cutting Edge Transportation Technologies are Helping Create a Clean Freight Network](#) (P13-7160)

[Tim Brown](#), University of California, Irvine

[Building the Future, Part 5: How Cutting Edge Transportation Technologies are Helping Create a Clean Freight Network](#) (P13-7161)

[Michael G. Britt](#), UPS

CGW13-004

Sunday, January 13, 2013, 9:00am-12:00pm, Hilton, Lincoln West

[Effective Practices to Develop Environmental Research Needs Statements and Funding Opportunities](#)

[Robert O'Loughlin](#), Federal Highway Administration, presiding

This workshop focuses on writing effective environmental and energy research needs statements and details the funding opportunities available for such research. Participants will hear from experts who have successfully developed effective research needs statements leading to funded and implemented research projects. The workshop also will highlight the available research funding programs and provide tips on success in applying for research funds.

[Writing Effective Research Statements](#) (P13-5104)

[Sue Sillick](#), Montana Department of Transportation

[Research Funding Opportunities](#) (P13-5105)

[Shari M. Schaftlein](#), Federal Highway Administration

[Nanda N. Srinivasan](#), Energy Information Administration

**[Advancing Research: How It Works and How to Make It Happen](#)** (P13-5106)

[Kate Kurgan](#), American Association of State Highway and Transportation Officials

**[Facilitated Development of Research Problem Statements](#)** (P13-5107)

[Carissa Schively Slotterback](#), University of Minnesota

**[Facilitated Committee Collaboration on Partnership Opportunities](#)** (P13-5108)

[Carissa Schively Slotterback](#), University of Minnesota

**[Wrap-up and Next Steps](#)** (P13-5109)

[Robert O'Loughlin](#), Federal Highway Administration

CGW13-008

Sunday, January 13, 2013, 1:30pm- 4:30pm, Hilton, Monroe

**[Assessing the Future of Freight: Energy and Environmental Modeling in the Freight Sector](#)**

[James J. Winebrake](#), Rochester Institute of Technology; [James J. Corbett](#), University of Delaware, presiding

This workshop responds to the growing need that researchers and practitioners have in understanding the energy and environmental impacts of goods movement. The freight sector is a growing component of transportation energy use and emissions, and new models are required to quantify, assess, and mitigate these impacts. Participants will learn about new analytical tools, models, and applications related to goods movement, energy use, and the environment.

**[Welcome and Overview of Session - The Dimensions of the Community of Practice of Freight Energy and Environmental Modelers](#)** (P13-6437)

[James J. Corbett](#), University of Delaware

[James J. Winebrake](#), Rochester Institute of Technology

**[Empowering Environmental Decision Making in the Freight Sector: An Overview and Update of SmartWay Models and Approaches](#)** (P13-6438)

[Cheryl L. Bynum](#), U.S. Environmental Protection Agency

**[Opportunities for Freight Efficiency and Logistics to Meet Energy and Environmental Goals in the Freight Sector](#)** (P13-6442)

[Anne Goodchild](#), University of Washington

[Erica J. Wygonik](#), RSG

**[The Rise of Green Freight in Asia](#)** (P13-6445)

[Sophie Punte](#), Clean Air Initiative for Asian Cities, Philippines

**[Freight Flow Modeling and Carbon Footprints in Metropolitan Areas and Supply Chains](#)** (P13-6446)

[Frank Southworth](#), Georgia Institute of Technology

**[Freight 2050: The Use of Scenario Modeling to Explore Future Freight Transportation Energy Use](#)** (P13-6447)

[Lance R. Grenzeback](#), Cambridge Systematics, Inc.

**The Geospatial Intermodel Freight Transportation (GIFT) Model: Case Studies on the Use of Geospatial Network Optimization for Evaluating Performance Tradeoffs in the Freight Sector** (P13-6448)

[James J. Corbett](#), University of Delaware

[James J. Winebrake](#), Rochester Institute of Technology

**Development of a Freight Decarbonization Tool: An Evaluation of Measures for Reducing Emissions from Freight Transport in the UK** (P13-6450)

[Alan C. McKinnon](#), Kuhne Logistics University, Germany

**KFM13-008**

Wednesday, January 16, 2013, 10:15am-12:00pm, Hilton, Morgan

[Air Quality Issues in Small and Medium-Sized Communities Subcommittee, ADA30\(2\)](#)

[Evelyn Sue Kimbrough](#), U.S. Environmental Protection Agency, presiding

**RCM13-038**

Monday, January 14, 2013, 7:30pm- 9:30pm, Marriott, Washington B3

[Traffic Simulation Models Joint Subcommittee of AHB45, AHB40, AHB25, AHB20, ADB30, AHB55, ADC20](#)

[George F. List](#), North Carolina State University, Raleigh, presiding

**RCW13-001**

Sunday, January 13, 2013, 1:30pm- 4:30pm, Marriott, Thurgood Marshall South

[Analysis, Modeling, and Simulation in Support of Real-Time Operations and Management](#)

[Vassili Alexiadis](#), Cambridge Systematics, Inc., presiding

Analysis, modeling, and simulation (AMS) methods and tools traditionally have been applied in the planning or design stage to help evaluate and prioritize transportation improvement alternatives, estimate project benefits, and justify investment decisions. Learn about an emerging related area of research and practice, the application of AMS tools and methods in a real-time environment and use of AMS tools to make real-time decisions about operating strategies.

**Introduction** (P13-7009)

[James Colyar](#), Federal Highway Administration

[John A. Halkias](#), Federal Highway Administration

**[Application of Real-Time Modeling and Decision-Making from Non-Transportation Industries](#)** (P13-7010)

[Brian Fox](#), AEM Corp.

**[ICM San Diego Project](#)** (P13-7011)

[Matthew Juckes](#), TSS

[Peter Thompson](#), San Diego Association of Governments

**[Edmonton Yellowhead Trail Project and European Experience](#)** (P13-7012)

[Thomas Bauer](#), Mygistics Inc.

**[ICM Dallas Project](#)** (P13-7013)

[Khaled F. Abdelghany](#), Southern Methodist University

[Christopher M. Poe](#), Texas A&M Transportation Institute

**[TOPL-based Projects/Case Studies](#)** (P13-7014)

[Gabriel Gomez](#), University of California, Berkeley

**[Real-time Road Weather Modeling Case Studies](#)** (P13-7015)

[Hani S. Mahmassani](#), Northwestern University

### ***Other Historic Data***

Between 2010 and 2012, the committee sponsored and co-sponsored a number of sessions and workshops. Here are the summary statistics:

2010 sponsored = 2; co-sponsored = 2; workshop = 0; published meetings = 3;

2011 sponsored = 2; co-sponsored = 4; workshop = 1; published meetings = 3;

2012 sponsored = 3; co-sponsored = 5; workshop = 1; published meetings = 3;

#### **3. Paper submission at the TRB annual meeting**

2010 reviewed = 57; published = 15;

2011 reviewed = 57; published = 12;

2012 reviewed = 74; published = 14;

#### **4. Other Technology Transfer and Outreach Activities:**

- The committee co-sponsored, with the American Society of Civil Engineers, the 2009 and 2011 Transportation Planning, Land Use and Air Quality Conferences in, respectively, Denver, Colorado, July 28-29, 2009, and San Antonio, Texas, May 9-10, 2011. The proceedings of the summer conferences in 2009 and 2011 were published by the American Society of Civil Engineers.

- In the summer of 2010, the committee co-sponsored the 2010 TRB Mid-Year Environment and Energy Section Workshop.
- The committee launched a new committee website in 2009 and has continued to update the website currently hosted by the Texas A&M Transportation Institute. Separate pages have been created for the Project-Level Air Quality Analysis Subcommittee, Regional Transportation and Air Quality Subcommittee, and the Research Needs Subcommittee.
- The Project-Level Air Quality Analysis Subcommittee has initiated discussions with representatives of the US Department of Transportation Travel Model Improvement Program (TMIP) to address project-level air quality modeling issues on the TMIP website.
- Representatives of the Federal Highway Administration, Federal Transportation Administration, American Association of State Highway and Transportation Officials, and US Environmental Protection Agency have been invited to give standing updates on current issues of interest relating to project-level air quality at the annual meetings of that subcommittee.

#### 5. Research Needs and Problems Statements

No problem statements were submitted between 2010 and 2012. One proposal made in the 2012 Project-Level Air Quality Subcommittee meeting received NCHRP 25-25 funding for 2013 and that study process initiated. Several research need statements from both the project-level and regional air quality subcommittees are in development for 2013.