

Agenda

10th CRC MOBILE SOURCE AIR TOXICS (MSAT) WORKSHOP

Trends, Measurements, Modeling, and Impacts

Virtual
February 8-10, 2022

*Co-Sponsored by: CARB, EPA- Office of Transportation and Air Quality, South Coast Air Quality Management District, and Health Effects Institute



WORKSHOP ORGANIZERS

Sandy Winkler, Co-Chairperson	Ford Motor Company
Seungju Yoon, Co-Chairperson	California Air Resources Board
Chad Bailey	U.S. EPA
Tim French	EMA
Sang-Mi Lee	South Coast AQMD
Matti Maricq	Consultant
Chris Rabideau	Chevron
Jenny Sigelko	Volkswagen Group of America

**The purpose of the workshop is for the free exchange of ideas, research, data etc. Sponsorship of or participation in the workshop by CRC and others does not reflect any endorsement of information presented at the workshop.*

Tuesday, February 8, 2022

11:20 AM ET

Welcome & Opening Comments: Sandy Winkler (Ford) and Seungju Yoon (CARB)

Key Note

Time	Title	Presenter	Affiliation
11:30 AM	Introduction to CARB's New Southern California Headquarters	Annette Hebert	CARB
11:50 AM	General Discussion		

Session 1

Regulatory Needs

What MSAT issues are of greatest concern to the regulatory community? How are MSATs influenced by low carbon fuel regulations, PM standards, and other new rules? What additional work is needed to address areas of uncertainty?

12:00 PM Chairpersons: Chandan Misra (CARB) and Seungju Yoon (CARB)

Time	Title	Presenter	Affiliation
12:05 AM	The Air Toxics Program	Robert Krieger	CARB
12:25 PM	Mobile Source Air Toxics Regulators' Perspective	Molly Zawacki	US EPA
12:45 PM	Mobile Source Contributions to California's Cumulative Impacts Screening Tool, CalEnviroScreen: Recent Updates and Future Directions	Laura August	OEHHA
1:05 PM	General Discussion		

1:15 PM – 1:30 PM Break

Session 2

Air Quality and Exposure Modeling of MSATs

How are MSATs handled in chemical mechanisms used in modeling application? What type of modeling approaches are used to estimate MSAT exposures at different scales? How are exposure modeling results verified? How are potential impacts of climate change upon MSATs assessed?

1:30 PM Chairpersons: Sang-Mi Lee (AQMD) and Toshihiro Kuwayama (ARB)

Time	Title	Presenter	Affiliation
1:35 PM	Air Toxics Modeling and Cancer Risk Estimation for the South Coast Air Basin and Coachella Valley	Xinqiu Zhang	SCAQMD
1:55 PM	Reduction of Diesel Particulate Matter from Mobile Source Emissions in California	Shuming Du	CARB
2:15 PM	Environmental justice implications of air quality public health benefits from low carbon on-road vehicles	Michael Mac Kinnon	UC Irvine
2:35 PM	Volatile Chemical Products Have a Major Impact on Air Quality in U.S. cities	Carsten Warneke	NOAA

2:55 PM - 3:10 PM Break

3:10 PM	Overview of Mobile Source Emissions in the National Emissions Inventory and Modeling Platform	Janice Godfrey	US EPA
3:30 PM	Public Health and Climate Implications of Shifting the U.S. Light-Duty Gasoline Fleet to GDI Technologies	Rawad Saleh	U. Georgia
3:50 PM	Estimation of Population Size and Demographic Characteristics among People Living Near Truck Routes in the Conterminous United States	Chad Bailey	US EPA
4:10 PM	General Discussion		
4:20 PM	End of Day 1 Technical Sessions		

Wednesday, February 9, 2022

11:00 AM ET *Welcome & Opening Comments: Sandy Winkler (Ford) and Seungju Yoon (CARB)*

Key Note

<i>Time</i>	<i>Title</i>	<i>Presenter</i>	<i>Affiliation</i>
11:10 AM	MSATS: Current Status and Future Outlook	Rashid Shaikh	HEI (<i>Retired</i>)
11:30 AM	General Discussion		

Session 3 **Air Quality and Exposure Measurements of MSATs**

What exposures to MSATs have been measured near roadways and in other hot-spots? How do non-road sources contribute to MSAT exposures? What is known about atmospheric transformation of MSATs?

11:40 AM *Chairpersons: Jason Low (AQMD) and Abhilash Vijayan (Sonoma Technology)*

<i>Time</i>	<i>Title</i>	<i>Presenter</i>	<i>Affiliation</i>
11:45 AM	Insights Into Urban Vehicle Emissions from BEACO2N	Ron Cohen	UC Berkeley
12:05 PM	Mobile and Sensor Measurements to Assess Local-Scale Impacts and Mitigation Strategies for Transportation Facilities	Rich Baldauf	EPA
12:25 PM	The Murky Politics of Clean Air: Seeking Community-Based Air Monitoring and Management in California	Jonathan London	UC Davis
12:45 PM	The COVID-19 Natural Experiment - Expected and Unexpected Impacts on Ambient Air Quality in New York	Dirk Felton	New York State Department of Environmental Conservation

1:05 PM - 1:20 PM Break

1:20 PM	Advanced Air Toxics Monitoring in Environmental Justice Communities of the South Coast Air Basin	Payam Pakbin	South Coast AQMD
1:40 PM	Applying Satellite Data to Health and Quality - Lessons from the NASA Health and Air Quality Applied Sciences Team	Tracey Holloway	U. Wisconsin
2:00 PM	Recent Trends in Near-Road Mobile Source Air Toxics Concentrations in the United States	Olivia Ryder	Sonoma Tech
2:20 PM	General Discussion		

2:30 PM - 3:05 PM Break

Session 4 Measurement and Modeling of Vehicle Emission MSATs
What is known about MSAT emissions from modern vehicles and fuels? How effective are advanced emissions control systems in reducing MSATs? How does use of biofuels impact emissions of MSATs? How are MSATs treated in vehicle emissions models? What MSAT measurement issues require additional work?
 3:05 PM Chairpersons: Jenny Sigelko (VW) and Seungju Yoon (CARB)

Time	Title		Affiliation
3:10 PM	Mobile Source Air Toxic Emissions from a Fleet of GDI and PFI Vehicles Operated on California Reformulated Gasoline Blends of E10 and E15	Georgios Karavalakis	CE-CERT
3:30 PM	Chemical and Toxicological Properties of Emissions from a Light- Duty CNG Vehicle Fueled with Renewable Natural Gas	Michael Kleeman	UC Davis
3:50 PM	Overview of Particulate Matter Emissions from Current Technology Natural Gas Engines	Arvind Thiruvengadam	WVU
4:10 PM	Surface Fluxes of Volatile Organic Compounds, Nitrogen Oxides and Greenhouse Gases in the Los Angeles Basin Derived by Airborne Eddy Covariance	Allen Goldstein	UC Berkeley

4:30 PM End of Day 2 Technical Sessions

Thursday, February 10, 2022

11:00 AM ET Welcome & Opening Comments: Sandy Winkler (Ford) and Seungju Yoon (CARB)

Key Note

Time	Title	Presenter	Affiliation
11:05 AM	New Catalyst and Filter Technologies	Christine Lambert	Ford Motor Co.
11:25 AM	General Discussion		

Session 4 Measurement and Modeling of Vehicle Emission MSATs

What is known about MSAT emissions from modern vehicles and fuels? How effective are advanced emissions control systems in reducing MSATs? How does use of biofuels impact emissions of MSATs? How are MSATs treated in vehicle emissions models? What MSAT measurement issues require additional work?

11:35 AM

Chairpersons: Jenny Sigelko (VW) and Seungju Yoon (CARB)

11:40 AM Brake Wear Particle Emissions – Measurement and Impact Rainer Vogt Ford Motor Co.

12:00 PM Methods for the Determination of Brake and Tire Wear Particle Emissions Under Varying Test Environments Toni Feißel Technische Universität Ilmenau

12:20 PM Characterization of PEMS Versus Laboratory NOX Measurement at Low NOX Levels on Real-World Duty Cycles Chris Sharp SwRI

12:40 PM General Discussion

12:50 PM - 1:05 PM Break

Session 5 Accountability

How effective have past emissions control measures been in reducing MSATs? How do we know? How can we assess the effectiveness of current and future regulations?

1:05 PM

Chairpersons: Chris Rabideau (Chevron) and Sandy Winkler (Ford)

Time	Title		Affiliation
1:10 PM	Assesing Mobile Source Pollutant Trends Over Four Decades Using Models, and Ground- and Satellite- Based Observations	Lucas Henneman	George Mason
1:30 PM	On-Road Vehicle Emission Measurements and Their Use in Evaluating Emission Control Effectiveness	Gary Bishop	U. Denver
1:50 PM	Evaluation of Modeled Trends from the EPA's Air Quality Time Series (EQUATES) Project	Kristen Foley Heather Simon	US EPA
2:10 PM	General Discussion		

Workshop Wrap-up

2:20 PM Workshop Wrap-up: *Sandy Winkler (Ford) and Seungju Yoon (CARB)*

2:40 PM End of Workshop