

# **Air Quality Measurement Methods and Technology Conference 2017**

Long Beach, California, USA  
7 - 9 November 2017

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## TECHNICAL PROGRAM - Monday, November 6

**8:30 am - 5:00 pm**

### TRAINING COURSE

Dawson (Third Floor)

#### Optimizing Quality Assurance for Ambient Air Monitoring Programs

**Instructors:** Jason Low, Ph.D., QA Manager, South Coast Air Quality Management District; Eugenia McNaughton, Ph.D., QA Manager, U.S. EPA Region 9; Mathew Plate, Environmental Scientist, U.S. EPA Region 9

Broadly, the application of quality assurance principles and processes has three basic components. This training will start with EPA and air monitoring agencies optimization strategies for systematic planning and quality control. How to use the data quality objectives process in the development of an ambient air monitoring program will be discussed in detail. Reviewing the data and the quality system is the last "leg of the stool" and must include a well-defined corrective action process. These concepts will be used to develop and optimize a hypothetical air monitoring program.

Course Objectives:

- Learn quality system concepts
- Become aware of quality assurance resources for ambient air
- Gain a working knowledge on the development of ambient air monitoring quality systems
- Develop an understanding of air monitoring system oversight, improvement, and corrective action

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## TECHNICAL PROGRAM - Tuesday, November 7

**7:30 am - 4:30 pm**

### Conference Registration

Second Floor Counter

**7:30 am - 8:30 am**

### Continental Breakfast and Presenters' Meeting

Bixby 1, 2, and 5

**9:00 am - 6:00 pm**

### Exhibition Viewing

Bixby 3, 4, and Farrell's Lounge

8:30 am - 8:45 am

### Conference Welcome and Introduction

Bixby 1, 2, and 5

Eric Winegar, Conference Co-chair, Exponent, Inc., and Sara Head, A&WMA Past President, Director, West Coast Section, Yorke Engineering, LLC

8:45 am - 9:45 am

### Keynote Session

Bixby 1, 2, and 5

### Opportunities for New Clean Air Collaboration

Wayne Nastri, Executive Officer, South Coast Air Quality Management District N/A

### Policies Driving California's Air Quality Measurement Priorities

Michael Benjamin, Chief, Monitoring and Laboratory Division, California Air Resources Board 1

### REFRESHMENT BREAK AND EXHIBITION VIEWING FOR ALL SESSIONS

**9:45 am - 10:15 am**

Bixby 3, 4 and Farrell's Lounge

# TECHNICAL PROGRAM - Tuesday, November 7

## Session 1A:

### SENSOR APPLICATIONS

[concurrent with Session 2A]

Broadlind

**Chair:** *Tim Dye, TD Environmental Services*

**10:15 am – 10:40 am**

ME79

**State of Air Quality Sensing in 2017 - Where We Are, Where We're Going.**

*Tim Dye, TD Environmental Services, LLC, Petaluma, CA*

15

**10:40 am – 11:05 am**

ME58

**Design and Development of a "Low-Cost" Sensor Network to Measure Volatile Organic Compounds for Facility and Community Monitoring**

*Robert Wimmer, Olga Pikelnaya, Andrea Polidori; South Coast Air Quality Management District, Diamond Bar, CA*

20

**11:05 am – 11:30 am**

ME70

**"Low-cost" Sensors for Measuring Gaseous and Particle Air Pollutants: Performance Results from Three Years of AQ-SPEC Field and Laboratory Testing and Network Applications at the Fenceline and Community Level**

*Vasileios Papapostolou, Brandon Feenstra, Hang Zhang, Andrea Polidori, South Coast Air Quality Management District, Diamond Bar, CA*

23

**11:30 am – 11:55 am**

ME59

**Assessing Community Exposure to Hazardous Air Pollutants Using a Combination of Optical Remote Sensing and "Low-Cost" Sensor Technologies**

*Olga Pikelnaya, Andrea Polidori, Robert Wimmer, South Coast Air Quality Management District, Diamond Bar, CA; Johan Mellqvist, Jerker Samuelsson, Marianne Ericsson, Pontus Andersson, Samuel Brohede, Oscar Izos, FluxSense Inc., San Diego, CA*

30

## Session 2A:

### OIL AND GAS MONITORING

[concurrent with Session 1A]

Pike 3

**Chairs:** *Ray Merrill and Ned Shappley, U.S. EPA*

**10:15 am - 10:40 am**

ME80

**Addressing Public Outrage at an Oil Field Site in Down Town Los Angeles—An Air Monitoring and Risk Mitigation Model for Other Urban Oil and Gas Operations**

*Eric Winegar, Exponent, Inc.; Charles E. Lambert, Intrinsik, Inc., Sacramento, CA*

34

**10:40 am - 11:05 am**

ME07

**Fugitive Emissions Testing at California Natural Gas Production Facilities**

*David Ranum, TRICORD Consulting, LLC, Frisco, TX; Michael Hebert, Booth Environmental, Lake Charles, LA*

39

**11:05 am - 11:30 am**

ME05

**Indoor and Outdoor Assessment of PM Concentrations at Umm Al-Aish Oil Field-North Kuwait**

*Ashraf Ramadan, Environmental Pollution and Climate Program, Environment and Life Sciences Research Center, Kuwait Institute for Scientific Research, Safat, Kuwait*

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### LUNCH PRESENTATION

Bixby 1, 2, and 5

**12:00 pm – 1:30 pm**

Welcome from Scott Freeburn, A&WMA 2017 President

**AB617: Making What We Measure Matter**

*Janet Whittick, Director of Policy, California Council for Environmental and Economic Balance*

# TECHNICAL PROGRAM - Tuesday, November 7

## Session 1B:

### SENSOR APPLICATIONS

[concurrent with Session 2B]

Broadlind

**Chair:** *Tim Dye, TD Environmental Services*

**1:30 pm – 1:55 pm**

ME73

#### Variations in Wintertime PM among Communities in Sacramento Measured with a Combination of Traditional and Low-Cost Sensor Methods

*Anondo Mukherjee, Steven G. Brown, Michael C. McCarthy, Sonoma Technology, Petaluma, CA; Aleta Kennard, Janice Lam Snyder, Stephen D'Andrea, Sacramento Metropolitan Air Quality Management District, Sacramento, CA*

64

**1:55 pm – 2:20 pm**

ME56

#### Application of Consumer-grade Sensors to Study the Effect of Heatwaves on Indoor Air Quality

*Gediminas Mainelis, Ruikang He, Department of Environmental Sciences, Rutgers University, New Brunswick, NJ; Ioanna Tsoulou, Sanjeevi Thirumurugesan, Brian Morgan, Stephania Gonzalez, Deborah Plotnik, Jennifer Senick, Clinton Andrews, Edward J. Bloustein School of Planning and Public Policy, Rutgers University, New Brunswick, NJ*

69

**2:20 pm – 2:45 pm**

ME28

#### Development of Hybrid Microresonators for Optical Vapor Detection

*Simin Mehrabani, South Coast Air Quality Management District, Diamond Bar, CA; Andrea M. Armani, University of Southern California, Los Angeles, CA*

74

## Session 2B:

### OPTICAL GAS IMAGING AND MONITORING MEASUREMENTS

[concurrent with Session 1B]

Pike 3

**Chairs:** *Ray Merrill and Ned Shappley, U.S. EPA*

**1:30 pm – 1:55 pm**

ME29

#### Video Imaging Spectral Radiometry (VISR) Based Flare Monitor

*Yousheng Zeng, Jon Morris, Srikanth Mutyala, Albert Sanders, Providence Photonics, Baton Rouge, LA*

79

**1:55 pm – 2:20 pm**

ME30

#### Applications and Field Results for Quantitative Optical Gas Imaging

*Jon Morris, Yousheng Zeng, Srikanth Mutyala, Albert Sanders, Providence Photonics, Baton Rouge, LA*

84

**2:20 pm – 2:45 pm**

ME33

#### Dual-Cell FTIR Analyses of Semiconductor Point-of-Use Abatement Devices

*Brian Adair, Geosyntec Consultants, Charlotte, NC; Curtis T. Laush, Geosyntec Consultants, Austin, TX*

90

## REFRESHMENT BREAK AND EXHIBITION VIEWING FOR ALL SESSIONS

**2:45 pm - 3:10 pm**

Bixby 3, 4, and Farrell's Lounge

## Session 1C: SENSOR APPLICATIONS PANEL

**3:10 pm - 4:40 pm**

Bixby 1, 2, and 5

**Chair:** *Tim Dye, TD Environmental Services*

### Panelists include:

- Andrea Polidori, *Atmospheric Measurements Manager South Coast Air Quality Management District* (Government)
- Michael Ogletree, *Air Quality Program Manager, Denver Dept. of Environmental Health* (City)
- Barbara Toole O'Neil, *Principal Scientist, Scan-It Technologies* (Private Sector)
- Gediminas "Gedi" Mainelis, Ph.D., *Professor, Rutgers University* (Academia)
- Luis Olmedo Velez, *Executive Director, Comite Civico del Valle* (Community)

## NETWORKING RECEPTION AND EXHIBITION VIEWING

**4:45 pm - 6:00 pm**

Bixby 3, 4, and Farrell's Lounge

# TECHNICAL PROGRAM - Wednesday, November 8

**7:30 am – 5:00 pm**  
Conference Registration  
Second Floor Counter

**7:30am - 8:30 am**  
Continental Breakfast and Presenters' Meeting  
Bixby 1, 2, and 5

**9:00 am - 4:00 pm**  
Exhibition Viewing  
Bixby 3, 4, and Farrell's Lounge

## Session 3A:

### AIR TOXICS

[concurrent with Sessions 4A and 5A ]

Broadlind

**Chairs:** Julie Swift, ERG, and Stephen Dutz, South Coast Air Quality Management District

**8:30 am – 8:55 am**

ME63

**Exemptions and Studies in Reference to the EPA NATTS Carbonyl and Polycyclic Aromatic Hydrocarbon (PAH) Programs**

Randy Bower and Julie Swift, ERG, Morrisville, NC

94

**8:55 am – 9:20 am**

ME64

**Evaluation of U.S. EPA Method TO-11A for the Measurement of Carbonyls in Ambient Air**

Ian C. MacGregor, Elizabeth A. Hanft, Brannon A. Seay, Naveen Shankar, Nicholas D. Skomrock, Martha W. McCauley, Larry A. Mullins, Dennis J. Tomcik, Christina Saeger, Douglas J. Turner, Marcie Lindner, Melissa L. Langton, Battelle, Columbus, OH

99

**9:20 am – 9:45 am**

ME67

**Improving On-Line (PAMS) and Canister (TO-15) Analysis of Trace-Level Compounds in High-Humidity Ambient Air**

Nicola Watson, Rui Li, Claire Keller; Markes International Inc, Gold River, CA

105

**9:45 am – 10:10 am**

ME83

**Novel Approach to Measuring Non-Methane Organic Compounds (NMOC) with Cryo-Trapping**

Randall Bramston-Cook, Edward Bramston-Cook, Lotus Consulting, Long Beach, CA

113

## Session 4A:

### NETWORK PM DATA

[concurrent with Sessions 3A and 5A ]

Pike 3

**Chair:** Ann Dillner, University of California, Davis

**8:30 am – 8:55 am**

ME47

**Chemical Speciation Network Data Validation: Techniques, Challenges, and Lessons Learned**

Dominique E. Young, Sean M. Raffuse, Nicholas J. Spada, Nicole P. Hyslop, Krystyna Trzepla, Air Quality Research Center, University of California, Davis, Davis, CA

119

**8:55 am – 9:20 am**

ME40

**Characterizing Carbonaceous Aerosols in Ambient Monitoring Networks using Fourier Transform Infrared Spectroscopy**

Ann M. Dillner, Andrew T. Weakley, Bruno Debus, Alexandra J. Boris, University of California, Davis, Davis, CA; Adele Kuzmiakova, Satoshi Takahama, ENAC/IIE, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

124

**9:20 am – 9:45 am**

ME45

**Comparison of Three FTIR Instruments for the Prediction of Carbonaceous Aerosols in Large Particulate Speciation Networks – Is Calibration Transfer Required?**

Bruno Debus, Andrew T. Weakley, Ann M. Dillner, University of California, Davis, Davis, CA; Matteo Reggente, Satoshi Takahama, ENAC/IIE, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

129

**9:45 am – 10:10 am**

ME46

**Quantification of Organic Aerosol Composition by Functional Groups: Using Infrared Spectroscopy to Measure Carbonyl Mass within the Southeastern Aerosol Research and Characterization (SEARCH) Network**

Alexandra J. Boris, Andy T. Weakley, Bruno Debus, Ann M. Dillner, Air Quality Research Center, University of California Davis, Davis, CA; Satoshi Takahama, Swiss Federal Institute of Technology, Lausanne, Switzerland

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## REFRESHMENT BREAK AND EXHIBITION VIEWING FOR ALL SESSIONS

**10:10 am - 10:40 am**

Bixby 3, 4, and Farrell's Lounge

## Session 5A:

### FUGITIVE MODELING

[concurrent with Sessions 3A and 4A]

Pike 2

**Chair:** Ray Merrill and Ned Shappley, U.S. EPA

**8:30 am – 8:55 am**

ME61

**The TEMMAS project "Teledetection, Measure, Modeling of Atmospheric Pollutants on Industrial Sites": Confrontation of PM Analysis with Dispersion Models (non-reactive Lagrangian Model and Plume in Grid model with Chemical Mechanism)**

Olivier Duclaux, Laboratoire Qualité de l'Air, TOTAL RESEARCH CENTER, Solaize, France; Valentin RAFFORT CERE, Ecole des Ponts ParisTech/EDF R&D, Université Paris-Est, France; Jonathan LEMUS, Laboratoire Qualité de l'Air, TOTAL RESEARCH CENTER, Solaize, France; Pierre Yves FOUCHER ONERA, The French Aerospace Lab; Edouard Belin, Toulouse, France; YELVA ROUSTAN CERE, Ecole des Ponts ParisTech/EDF R&D, Université Paris-Est, 77455 Champs-sur-Marne, France; Alexandre ARMENGAUD AIRPACA, Marseille, France; Henri WORTHAM Laboratoire Chimie et de l'Environnement, Université Apix-Marseille

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**8:55 am – 9:20 am**

ME19

**NonParametric Trajectory Analysis of R2Pier Data**

Ronald C. Henry, University of Southern California, Los Angeles, CA; Gayle Hagler, U. S. EPA Office of Research and Development, Research Triangle Park, NC; Daniel Birkett, U.S. EPA Region 2, New York, NY

147

**9:20 am – 9:45 am**

ME62

**Quantification of VOC Emission by Remote Monitoring: Reverse Dispersion Modeling in Complex Industrial Site for Quantification of VOC Emission in Waste Water Treatment of a Refinery Implementing Micro-Sensors Network**

Olivier Duclaux, Jonathan Lemus, Ludovic Donnat, Catherine Juery, TOTAL Refining & Chemistry, Laboratoire Qualité de l'Air, TOTAL RESEARCH CENTER, Solaize, France; Brice Helligo, Azzedine Ben Daoud, CAIRPOL, Environnement S.A group, POISSY CEDEX 4 – FRANCE

153

## TECHNICAL PROGRAM - Wednesday, November 8

### Session 3B:

#### AIR TOXICS

[concurrent with Sessions 4B and 5B]  
Broadlind

**Chairs:** Julie Swift, ERG, and Stephen Dutz, South Coast Air Quality Management District

**10:40am – 11:05 am**

ME12

#### Taking Your Lab to the Field: AutoGC Systems and the Data they Generate

Carol J. Meyer, Orsat, LLC, Pasadena, TX 160

**11:05 am – 11:30 am**

ME82

N/A

#### Extremely Wide Concentration Ranges for Toxic Analytes in Air with Lotus Consulting TO15 Analyzer and Scion SQ Mass Spectrometer

Randall Bramston-Cook, Edward Bramston-Cook, Lotus Consulting, Long Beach, CA; Stefan D'Angona, Charles Reiner, Enthalpy Analytical LLC., Berkeley, CA; Mark Scesny, M Solutions, Terrell, TX

**11:30 am – 11:55 am**

ME72

N/A

#### A New Cryogenless TO15 Canister Preconcentrator with Substantially Reduced System Carrier-Over When Exposed to Higher Concentration Samples

Daniel B Cardin, Jiwen Zhang, Tom Robinson, Victoria Noad, Entech Instruments, Inc., Simi Valley, CA

### Session 4B:

#### NETWORK CARBONACEOUS PM

[concurrent with Sessions 3B and 5B]  
Pike 3

**Chair:** Ann Dillner, University of California, Davis

**10:40 am – 11:05 am**

ME48

#### Fourier Transform Infrared Determination of Organic and Elemental Carbon in PM2.5 Collected from Federal Reference Method Samplers 176

Andrew T. Weakley, Ann M. Dillner, Air Quality Research Center, University of California Davis, Davis, CA; Satoshi Takahama, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

#### POSTER PRESENTATIONS

**11:05 am – 11:30 am**

ME44

#### Determination of Carbonaceous Aerosols in IMPROVE Network Samples Based on FTIR Spectroscopy – Assessing the Impact of Spectral Processing Methods 181

Bruno Debus, Andrew T. Weakley, Ann M. Dillner, University of California, Davis, Davis, CA; Matteo Reggente, Satoshi Takahama, ENAC/IE, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

**11:30 am – 11:55 am**

ME49

#### Fourier Transform Infrared Determination of Organic and Elemental Carbon: Addressing Anomalous Predictions Related to Aerosol Sources 186

Andrew T. Weakley, Ann M. Dillner, Air Quality Research Center, University of California Davis, Davis, CA; Satoshi Takahama, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland

### Session 5B:

#### FUGITIVE FENCELINE MONITORING

[concurrent with Sessions 3B and 4B]  
Pike 2

**Chair:** Clinton Macdonald and Hilary Hafner, Sonoma Technology, Inc.

**10:40 am – 11:05 am**

ME74

#### Assessment of Technology Needed to Meet Refinery Air Quality Fenceline Monitoring Rules

Clinton MacDonal, Paul Roberts, Hilary Hafner, Sonoma Technology, Petaluma, CA 191

**11:05 am – 11:30 am**

ME55

#### Field Study on Online Monitoring Network of Air Toxics and Source Tracking at Petrochemical Industrial Park 196

Yu-Cheng Chen, Chin-Yu Hsu, National Environmental Health Research Center, National Health Research Institutes, Miaoli, Taiwan; Ching-Lin Hsiao, TricornTech Corporation, Taipei, Taiwan; Li-Peng Wang, Tsung-Kuan A. Chou, TricornTech Corporation, San Jose, CA

**11:30 am – 11:55 am**

ME36

#### Assessment of Benzene Fenceline Monitoring Data for Corrective Action Planning and Near-field Source Correction 201

David L. Elam, Jr., TRC Companies, Raleigh, NC

#### LUNCH FOR ALL SESSIONS

**12:00 pm - 1:30 pm**

Bixby 1, 2, and 5

## TECHNICAL PROGRAM - Wednesday, November 8

### Session 3C:

#### AIR TOXICS

[concurrent with Sessions 4C and 5C]  
Broadlind

**Chair:** Ian MacGregor, Battelle

**1:30 pm – 1:55 pm**

ME01

#### Migration from Analog to Digital Data Acquisition in an Ambient Air Quality Measurement Network

Yousaf Hameed, Clark County Department of Air Quality, Las Vegas, NV

209

**1:55 pm – 2:20 pm**

ME09

#### Source Profiles and Ozone Formation Potentials (OFPs) of Volatile Organic Compounds (VOCs) of Port Industries

Qiaoli Wang, State Key Laboratory of Clean Energy Utilization, Institute for Thermal Power Engineering, College of Energy Engineering, Zhejiang University (Yuquan Campus), Hangzhou, China; Wei Li, Key Laboratory of Biomass Chemical Engineering of Ministry of Education, Institute of Industrial Ecology and Environment, College of Chemical and Biological Engineering, Zhejiang University (Yuquan Campus), Hangzhou, China; Sujing Li, Key Laboratory of Biomass Chemical Engineering of Ministry of Education, Institute of Industrial Ecology and Environment, College of Chemical and Biological Engineering, Zhejiang University (Yuquan Campus), Hangzhou, China; Xiang GAO, State Key Laboratory of Clean Energy Utilization, Institute for Thermal Power Engineering, College of Energy Engineering, Zhejiang University (Yuquan Campus), Hangzhou, China; Dongxiao Zhang, Henan Tianguan Group Co., Ltd. Nanyang, China

214

**2:20 pm – 2:45 pm**

ME41

#### Increasing Interest in and Use of Passive Diffusive Samplers in Vapor Intrusion Investigations

Samantha Henningsen, ALS Group Air Quality Laboratory, Simi Valley, CA

226

### Session 4C:

#### PM SPECIATION

[concurrent with Sessions 3C and 5C]  
Pike 3

**Chair:** Ricky Tropp, Desert Research Institute

**1:30 pm – 1:55 pm**

ME39

#### NonParametric Trajectory Analysis of CMAPS Data

Ronald C. Henry, University of Southern California, Los Angeles, CA; Gary A. Norris, U. S. EPA, Research Triangle Park, NC

232

**1:55 pm – 2:20 pm**

ME54

#### Positive Matrix Factorization (PMF) and Data Quality Assessment of EPA's PM2.5 Chemical Speciation Network (CSN) Derived from Six Collocated CSN Sites for the Period 2010 - 2013

Richard J. Tropp, Division of Atmospheric Sciences, Desert Research Institute, Reno, NV; L.-W. Antony Chen, Department of Environmental and Occupational Health, University of Nevada Las Vegas, Las Vegas, NV

237

**2:20 pm – 2:45 pm**

ME86

#### A New Method and Instrument for the Measurement of Carbonaceous Aerosols

M. Rigler, Aerosol d.o.o. Ljubljana, Slovenia, L. Drinovec, G. Močnik, Aerosol d.o.o., Ljubljana, Slovenia, Jozef Stefan Institute, Slovenia; A. D. A. Hansen, Magee Scientific Corp., Berkeley, CA

243

**2:45 pm – 3:10 pm**

ME14

#### Assessing Continuous PM2.5 Monitoring with FEM SHARP 5030 in Ontario, Canada

Yushan Su, Uwayemi Sofowote, Jerzy Deboz, Luc White, Anthony Munoz, Ontario Ministry of the Environment and Climate Change, Toronto, Ontario, Canada

247

### Session 5C:

#### FUGITIVE ADVANCED MONITORING

[concurrent with Sessions 3C and 4C]  
Pike 2

**Chair:** Clinton Macdonald and Hilary Hafner, Sonoma Technology, Inc.

**1:30 pm – 1:55 pm**

ME68

#### Long Distance Detection of Aromatics with UV LED-Based Absorption Correlation Spectroscopy

Pascal Dufour, François Babin, Félix Cayer, and Jean-François Y. Gravel, INO, Québec City, QC, Canada

256

**1:55 pm – 2:20 pm**

ME85

#### Advanced Remote Sensing Solutions Accommodating Petrochemical/Chemical Industrial Monitoring Needs and Challenges

Gilad Shpitzer, Atmosfir Optics Ltd, A.S. Research Services

261

**2:20 pm – 2:45 pm**

ME71

#### Combining US EPA Methods TO15 and 325A/B on a Single GC/MS

Daniel B Cardin, Jiewen Zhang, Tom Robinson, Victoria Noad, Entech Instruments, Inc., Simi Valley, CA

266

**2:45 pm – 3:10 pm**

ME03

#### Assessment of Ambient Air Pollution Levels at Umm Al-Aish Oil Field-Kuwait

Ashraf Ramadan, Mufreh Al-Rashidi, Environmental Pollution and Climate Program, Environment and Life Sciences Research Center, Kuwait Institute for Scientific Research, Safat, Kuwait

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### REFRESHMENT BREAK AND EXHIBITION VIEWING

**3:10 pm - 3:40 pm**

Bixby 3, 4, and Farrell's Lounge

## TECHNICAL PROGRAM - Wednesday, November 8

### Session 3D:

#### STATIONARY SOURCE METHODS

[concurrent with Sessions 4D and 5D]

Broadlind

Chair: Ned Shappley, U.S. EPA

#### 3:40 pm - 4:05 pm

ME84

##### Performance of a Non-Methane Organic Compound Analyzer - EPA Method 25 and South Coast AQMD Method 25.3

Randall Bramston-Cook, Edward Bramston-Cook, Lotus Consulting, Long Beach, CA; Douglass Williams, Almega Environmental, Cypress, CA 281

#### 4:05 pm - 4:30 pm

ME88

##### An Emerging Technique for Low-Concentration Measurement of Particulate Emissions from Gas-Fired Gas Turbines

Kevin J. Crosby, Montrose Air Quality Services, LLC, Antioch, CA; Glenn C. England, Ramboll Environ, Irvine, CA 290

#### 4:30 pm - 4:55 pm

ME27

##### Application of Real-Time and On-Site Air Emissions Measurement Technologies to Optimize the Use of Mixed and Alternate Fuels

Thomas A. Dunder, TRC Environmental Corporation, Raleigh, NC 298

#### 4:55 pm - 5:20 pm

ME90

##### Electrochemical Portable Analyzer Test Method Update

Wendy Coulson and Jim McCarthy, Innovative Environmental Solutions, Inc., Cary, IL 302

### Session 4D:

#### OTHER NEW METHODS

[concurrent with Sessions 3D and 5D]

Pike 3

Chair: Ricky Tropp, Desert Research Institute

#### 3:40 pm - 4:05 pm

ME87

##### Comparison Study of Particulate Matter Light-Scattering Mass Monitor to Beta Attenuation and Gravimetric Methods

Rachel Kolberg, Piotr Nowinski, Mick Turner, Clark County Department of Air Quality, Las Vegas, NV 307

#### 4:05 pm - 4:30 pm

ME25

##### A Comparative Study of Sensor Output from Solar Radiation Sensors with Varying Spectral Responses and the Impacts on Aermod Modeling Results: Part I Monitoring Results

Shane L. Hansen, Inter-Mountain Labs, Sheridan, WY; Ronn G. Smith, Independent Consultant, Powell, WY 313

#### POSTER PRESENTATIONS

#### 4:30 pm - 4:55 pm

ME22

##### An Alternative Approach to Ambient Nitrogen Dioxide (NO<sub>2</sub>) Monitoring

Doug Haugen and Patrick King, Teledyne Advanced Pollution Instrumentation, San Diego, CA N/A

#### 4:55 pm - 5:20 pm

ME06

##### Open-Path Hydrocarbon Laser Sensor for Oil and Gas Facility Monitoring

Betsy M. Farris, Colorado State University, Fort Collins, CO; Eben Thoma, U.S. Environmental Protection Agency, Research Triangle Park, NC; Parikshit J. Deshmukh, Jacobs Technology Inc., Research Triangle Park, NC; Azer P. Yalin, Colorado State University, Fort Collins, CO N/A

### Session 5D: CRITERIA POLLUTANTS

#### METHOD DEVELOPMENT

[concurrent with Sessions 3D and 4D]

Pike 2

Chair: Eric Winegar, Exponent, Inc.

#### 3:40 pm - 4:05 pm

ME52

##### A Standalone True NO<sub>2</sub> Converter for Upgrading Chemiluminescence Analyzers

Charles A. Odame-Ankrah, Carlyn L.F. McGeean, Charles E. Grimm, Brian W. Rosentreter, Brodie D. Biggar, Global Analyzer Systems Limited, Calgary, AB, Canada 322

#### 4:05 pm - 4:30 pm

ME31

##### Field Evaluations of Newly Available "Interference-free" Monitors for Ozone (O<sub>3</sub>) Interferences and Inlet Height O<sub>3</sub> Gradients at Rural and Urban NAAQS Compliance Sites

Will M. Ollison, API, Washington, DC; Alan R. Leston, AirQuality Research & Logistics, LLC, Lebanon, CT 328

#### 4:30 pm - 4:55 pm

ME60

##### Evaluation of Epifluorescence Methods for Quantifying Bioaerosol in Air Quality Samples

L.-W. Antony Chen, Ting Liu, Mi Zhang, Rachel Kolberg, Department of Environmental and Occupational Health, University of Nevada Las Vegas, Las Vegas, NV; Judith C. Chow, John G. Watson, Division of Atmospheric Sciences, Desert Research Institute, Reno, NV 333

#### 4:55 pm - 5:20 pm

ME51

##### Real-Time PM Measurement Using BAMs and High-Volume Samplers

Bipul Saraf and Greg Wolffe, Yorke Engineering, LLC, San Juan Capistrano, CA 338

#### ALL ATTENDEES INVITED:

##### A&WMA West Coast Section and Orange County Chapter Meeting

6:00 pm - 9:30 pm

L'Opera Restaurant, 101 Pine Avenue, Long Beach, CA

Welcome and Introduction from Scott Freeburn, A&WMA President

##### Feature Presentation: Air Pollution and Human Health: What's Climate Got to Do With It?

Michael T. Kleinman, Ph.D., Professor and Associate Director of the Air Pollution Health Effects Laboratory in the Department of Medicine at University of California at Irvine

Cost: \$35 A&WMA Members; \$50 Nonmembers

Register online at: [https://wcsawma\\_dinner\\_meeting\\_lb\\_nov\\_8.eventbrite.com/](https://wcsawma_dinner_meeting_lb_nov_8.eventbrite.com/).

Contact Chhai Chorn at CCHorn@aqmd.gov or Sara Head at SHead@YorkeEngr.com.

## TECHNICAL PROGRAM - Thursday, November 9

**7:30 am – 10:30 am**  
Conference Registration  
Second Floor Counter

**7:30am - 8:30 am**  
Continental Breakfast and Presenters' Meeting  
Bixby 1, 2, and 5

**Session 6A:**  
**AGRICULTURE/LANDFILL MEASUREMENTS**  
[concurrent with Session 7A and 8A]  
Broadlind

**Chair:** Greg Wolffe, Yorke Engineering, LLC

**8:30 am – 8:55 am**  
ME53  
**Real-Time Nuisance Odor Monitoring and Notification System**  
Greg Wolffe and Bipul K. Saraf, Yorke Engineering, LLC, San Juan Capistrano, CA 344

**8:55 am – 9:20 am**  
ME42  
**Identification of Agricultural Emissions – What's That Smell?**  
Samantha Henningsen, ALS Group Air Quality Laboratory, Simi Valley, CA 350

**9:20 am – 9:45 am**  
ME17  
**Assessment of Odor Impacts from Landfill Operations** 356  
Paul W. Schafer, SCS Engineers, Sacramento CA;  
Thomas J. Rappolt, SCS Engineers, Carlsbad CA,

**9:45 am – 10:10 am**  
ME50  
**New Instrument for Ambient Air Monitoring**  
Pete Manautou, Barbara Toole O'Neil, Scanit Technologies, San Francisco, CA 368

**Session 7A:**  
**COMMUNITY ASSESSMENT**  
[concurrent with Session 6A and 8A]  
Bixby 3

**Chair:** Laki Tisopulos, South Coast Air Quality Management District

**8:30 am - 8:55 am**  
ME23  
**Swansea Elementary School Fixed Site Demonstration Project for Monitoring of Construction Air Quality** 371  
Michael R. Ogletree, Department of Environmental Health (DEH), City & County of Denver, CO

**8:55 am – 9:20 am**  
ME02  
**Rehabilitation of Mercury Polluted Industrial Site by the Construction and Accommodation of an Official Building**  
Layla Al-Awadi, Abdul Rehman Khan, Environmental Pollution and Climate Program (EPCP); Mufreh Al-Rashidi, Crisis Decision Support Program (CDS), Environment and Life Sciences Research Center (ELSRC), Kuwait Institute for Scientific Research, Kuwait 376

**9:20 am – 9:45 am**  
ME04  
**Assessment of Noise Levels Spatial Distribution at Umm Al-Aish Oil Field-Kuwait**  
Ashraf Ramadan, Environmental Pollution and Climate Program, Environment and Life Sciences Research Center, Kuwait Institute for Scientific Research, Safat, Kuwait 391

**Session 8A:**  
**ADVANCED FUGITIVE MONITORING**  
[concurrent with Session 6A and 7A]  
Bixby 4

**Chair:** Ricky Tropp, Desert Research Institute

**8:30 am – 8:55 am**  
ME43  
**FluxSense Technology Platform Mobile Measurements of Fugitive Emissions from Refineries, Oil & Gas Production, Dairy Production, CAFOs and More** 397  
Marianne Ericsson, FluxSense, Inc., San Diego, CA;  
Johan Mellqvist, FluxSense AB, Jerker Samuelsson, Samuel Brohede, Pontus Andersson, John Johansson, Oscar Isoz, FluxSense AB, Gothenburg, Sweden

**8:55 am – 9:20 am**  
ME11  
**Area Fugitive Remote Sensing Campaign for Tailings Ponds and Mine Faces**  
James Beck, Daniel M. Burt, Suncor Energy Services Inc., Calgary, Alberta, Canada 411

### REFRESHMENT BREAK

**10:10 am - 10:30 am**  
Second Floor Prefunction Hallway

## TECHNICAL PROGRAM - Thursday, November 9

### Session 6B:

#### AGRICULTURAL/LANDFILL MEASUREMENTS

[concurrent with Session 7B]

Broadlind

**Chair:** Greg Wolffe, Yorke Engineering, LLC

**10:30 am – 10:55 am**

ME89

#### Automated Landfill Gas Collection Increases Revenues, Lowers Costs, and Reduces Fugitive Emissions

Joseph G. Michels, Sarah M. Rizk, William D. Bingham, Ian S. Martin, Peter A. Quigley, Loci Controls Inc., Fall River, MA 416

**10:55 am – 11:20 am**

ME32

#### Validation of Tracer Dispersion Method for Quantifying Whole Landfill Methane Emission

Jacob Mønster, FORCE Technology, Brøndby, Denmark; Charlotte Scheutz, Technical University of Denmark, Lyngby, Denmark; Anders Fredenslund, Technical University of Denmark, Lyngby, Denmark 421

**11:20 am - 11:45 am**

ME16

#### Uncertainty Analyses of Backward Lagrangian Stochastic Inverse-Dispersion Technique

Kyoung S Ro, Jerry H Martin, USDA-ARS Coastal Plains Soil, Water & Plant Research Center, Florence, SC; Steven Trabue, USDA-ARS National Laboratory for Agriculture and the Environment, Ames, IA 425

### Session 7B:

#### NETWORK DESIGN

[concurrent with Session 6B]

Bixby 3

**Chair:** Laki Tisopulos, South Coast Air Quality Management District

**10:30 am – 10:55 am**

ME75

#### Considerations for Effective Upper-Air Meteorological Networks

Clinton MacDonald, Kevin Smith, Max Dillon, Sonoma Technology, Petaluma, CA 429

**10:55 am – 11:20 am**

ME37

#### Wintertime PM<sub>2.5</sub> Saturation Network in North Pole, Alaska

David H. Bush, David L. Yoho, T&B Systems, Valencia, CA; Tom Carlson, Sierra Research, Sacramento, CA; Barbara Trost, Alex Edwards, Alaska Department of Environmental Conservation, AK 433

**11:20 am – 11:45 am**

ME38

#### Wintertime PM<sub>2.5</sub> Mobile Measurements in North Pole, Alaska

David H. Bush, David L. Yoho, T&B Systems, Valencia, CA; Tom Carlson, Sierra Research, Sacramento, CA; Barbara Trost, Alex Edwards, Alaska Department of Environmental Conservation, AK 439

**CONFERENCE ADJOURNS**

11:45 am