

Preliminary Technical Session Schedule (5-8-19)



Tuesday, June 25

Air Quality Monitoring: Challenges and Innovations - Part 1

Track: MINI/AQMM

Room: 206B

6/25/2019, 1:30 PM

Panel – TCC: AAM

Chair: Antony Laberge, Québec Ministère de l'Environnement et de la Lutte Contre les Changements Climatiques

This first part of a two-part panel series will focus on the impact of new instrumentation and air quality sensors on the activities of air monitoring networks. It will address the following topics:

- 1) Air monitoring activities in Québec
- 2) Is it time to disrupt ambient air monitoring methods?
- 3) Real-time air quality monitoring through portable micro-sensing units: benefits and challenges of this technology
- 4) Examples of PM sensor monitoring in France

Panelists:

- *Sonia Melancon: Ville De Montréal*
- *Parisa Ariya: McGill University*
- *Marianne Hatzopoulou: University of Toronto*
- *Mohamed Chouak: Mechanical Engineering Department, Ecole de Technologie Supérieure*
- *Cheol Jeong: University of Toronto*
- *Antony Laberge: Québec Ministère de l'Environnement et de la Lutte Contre les Changements Climatiques*

GHG, Mercury and Ammonia Control Technologies

Track: AQCT

Room: 301B

6/25/2019, 1:30 PM

Platform – TCC: AAC

Chair: Paul Farber, P. Farber & Associates, LLC

1:30 PM

Greenhouse Gases from Covered Manure Storage Facilities - Emissions and Mitigation Technologies

Paper # 591399

Matthieu Girard, Ariane Lévesque, Martin Belzile: Research and Development Institute for the Agri-Environment; Martin Belzile; Michèle Heitz: University of Sherbrooke

1:50 PM

Emission Control of Halogenated Anesthetic Gases in Hospital Air Venting

Paper # 594179

Mina Mehrata: Class 1 Inc.; Carol Moralejo, William Anderson: University of Waterloo

2:10 PM

Development of an Innovative Mercury Control System for a Sewage Sludge Incinerator

Paper # 600795

Frank Sapienza: CDM Smith; Hunter Carson: Massachusetts Small Business Development Center

2:30 PM

Reduction of Methane Emissions from an Underground Coal Mine with VAMOX® Regenerative Thermal Oxidation Technology for Carbon Offset Credits on the Cap-and-Trade Market

Paper # 595424

Guy Drouin: Biothermica Technologies Inc.

2:50 PM

Ammonia Removal from Swine Building Exhaust Air with a Biotrickling Filter – Process Control and Nitrogen Valorisation

Paper # 588195

Ariane Lévesque, Matthieu Girard, Stéphane P. Lemay: Research and Development Institute for the Agri-Environment

3:10 PM

Simultaneous Treatment of Greenhouse Gas and Nitrogen Using a Methanotropic Biofilter

Paper # 600476

Julie Doucet, Rino Dubé; Nicolas Turgeon; Paul Lessard: Université Laval

Streamlining Government Business Processes for Environmental Protection

Track: REGU/AQES

Room: 202

6/25/2019, 1:30 PM

Panel – TCC: AAE

Chair: Julia Gamas, U.S. EPA

Vice Chair: Chun Yi Wu, Minnesota Pollution Control Agency

This panel will showcase efforts to streamline air emissions reporting and improve air emissions data collection processes by states and the U.S. EPA. Attendees will learn about efforts conducted by the U.S. EPA and state/local/tribal (SLT) agencies under the E-Enterprise Combined Air Emissions Reporting (CAER) Project. The goal of the CAER project is to streamline the way industry reports air emissions to meet U.S. EPA and SLT program requirements. The “Common Emissions Form” (CEF) and system will be an electronic reporting tool that will allow facilities to report to more than one program with a single data submission. Work towards development of the CEF includes facility and emissions data requirements gathering conducted by Product Design Research and Development Teams composed of staff from the U.S. EPA and states, such as a comparison among the National Emissions Inventory, the Toxics Release Inventory and State Emissions Inventory programs. Some of this work, while of benefit to CAER, also has stand-alone benefits. Finally, many states have developed custom electronic reporting systems with features designed to ease reporting for industry. Highlights of these systems will be showcased.

Panelists:

- *Chun Yi Wu: Minnesota Pollution Control Agency*
- *Julia Gamas: U.S. EPA*

Climate Change, Health, and Local Adaptive Management

Track: CLIM

Room: 205C

6/25/2019, 1:30 PM

Platform – TCC: CCP

Chair: Barbara Tool O'Neil, Adelante Consulting, Inc.

Vice Chair: Michael Conrardy, AECOM

1:30 PM

Think Global Act Local-Using Adaptive Management Through Land Use Law

Paper # 601729

Elizabeth Rubenstein: KLDDiscovery

1:50 PM

Quantifying Health Co-Benefits of Sustainable Planning Policies and Regulations

Paper # 602156
Heidi Rous, Tina Su: ESA

2:10 PM

The Value of Energy Efficiency as a Public Health and Climate Change Mitigation Strategy

Paper # 587047
Cassandra Kubes: American Council for an Energy-Efficient Economy

Climate Change Communication

Track: CLIM
Room: 303A
6/25/2019, 1:30 PM
Panel – TCC: CCP
Chair: C. Flint Webb, Leidos

This panel will discuss how different communities are understanding climate change and how best to communicate with them. In recent years there has been extensive surveying of the climate change issue both in the United States and in Canada. This panel will discuss the results of the surveys and what messages will resonate with different communities. By examining the demographics in different political jurisdictions, it is possible to gauge the opinions of the electorate in those jurisdictions.

The panel will also discuss arguments refuting climate change, the fallacies in those arguments, information gathered by A&WMA's delegates to the 2018 United Nations Climate Change COP 24 in Katowice, Poland with respect to accomplishments under the Paris Accords to date, and how to distinguish between healthy scientific skepticism and flawed scientific arguments.

Panelists:

- *C. Flint Webb: Leidos*
- *H. Christopher Frey: North Carolina State University*
- *Michael DeBusschere: Kentuckiana Engineering Company*

Per and Polyfluoroalkyl Substances (PFAS) - How Much Should We Be Worried?

Track: H&EE
Room: 204B
6/25/2019, 1:30 PM
Panel – TCC: HEE
Chair: Travis Kline, Geosyntec Consultants, Inc.
Vice Chair: Stephen Zemba, Sanborn, Head & Associates, Inc.

This presentation will address the predominant sources and routes of exposure associated with adults and children in the general public, communities in close proximity to production areas, and occupational populations, where inhalation may be the primary driver. Methodologies to derive inhalation-based toxicity criteria to allow screening level assessment will be presented, focused on U.S. EPA and ATSDR promulgated standards. With a focus on human health, few PFAS sites have addressed ecological risk. An ecological exposure model for birds and mammals will be discussed as applied to five AFFF impacted sites to clarify exposure pathways and identify key receptors of concern, including site-specific modeling results and prioritization. Soil represents a key reservoir with respect to ongoing sources of contamination in water (through leaching and overland transport of suspended particles). We will discuss soil as a key intermediary source at PFAS sites affected by deposition of airborne emissions from PFAS manufacturing processes, based on leaching and impact to underlying groundwater. Considering fate and exposure, the legal landscape is dynamic, complicating data gaps. We will discuss cases involving individuals as well as classes of plaintiffs seeking personal injury damages and health monitoring, water companies seeking protection, as well as municipalities and State environmental and public health agencies.

Panelists:

- *Travis Kline: Geosyntec Consultants, Inc.*
- *Stephen Zemba: Sanborn, Head & Associates, Inc.*
- *Jennifer Arblaster: Geosyntec Consultants, Inc.*
- *Earl Phillips: Robinson+Cole*

Waiting to Exhale: The Potential Environmental Impacts and the Regulatory Landscape

Track: REGU

Room: 303B

6/25/2019, 1:30 PM

Panel – TCC: REG

Chair: Richard Butler, Willms & Shier Environmental Lawyers LLP

Vice Chair: Rosanna DiLabio, Pinchin Ltd.

The panel will cover these major issues:

Federal / Provincial / Municipal Tension

On October 17, 2018, the Canadian Federal Cannabis Regulation (SOR /2018 – 144) came into force. The Federal laws are heavily weighted toward licensing, production and cultivation requirements, quality and testing requirements, with minimal environmental guidance. The Cannabis Regulation requires cannabis facilities to be equipped with air filtration to “prevent the escape of odours.” Yet odour is more commonly regulated under the Environmental Protection Act (EPA) in Ontario, including considerations of Adverse Effects and the potential requirement of an Environmental Compliance Approval (ECA). Local municipalities will have to address the immediate impacts of additional drain on municipal systems and other local level impacts.

Environmental or Agricultural Treatment

Section 9.1 of the Ontario EPA broadly prohibits the discharge of a contaminant into the natural environment, without a permit, with one exception for “any plant, structure, equipment, apparatus, mechanism or thing used in agriculture.” It remains to be clarified whether cannabis growers would fall within that agricultural exemption. Some producers will use greenhouses, which are believed to be operationally superior. Under the Nutrient Management Act, there are rules about how greenhouse nutrient feedwater is transported and stored, as well as provisions concerning soil sampling and analysis and application limits. How will these apply to cannabis and what agricultural exemption may be available to Licensed Producers?

Panelists:

- *Richard Butler: Willms & Shier Environmental Lawyers LLP*
- *Rosanna DiLabio: Pinchin Ltd.*
- *Matthew Gardner: Willms & Shier Environmental Lawyers LLP*

Resource Conservation and Sustainability: Innovative Policies and Practices - Part 1

Track: SUST

Room: 301A

6/25/2019, 1:30 PM

Platform – TCC: SRC

Chair: Maggie Clarke: Environmental Consultant

Vice Chair: Chih Chao: Cantech Environmental Services

1:30 PM

Sustainable Waste Plastics Management – Approaches and International Practices

Paper # 601202

Chih Chao: Cantech Environmental Services

1:50 PM

Green Energy Production from Wood Waste with Recovery of Ash to Mitigate Environmental and Human Health Risks: The Case of Chapais Énergie – Nexolia

Paper # 601769

Marc Hébert: Marc Hébert, Expert & Trainer

2:10 PM

Synthetic Anhydrite from Alf3 Production – An Example of Industrial Ecology as Part of the Circular Economy Concept

Paper # 605379

Stéphane Poirier, Jean Lavoie; Marc-André Séguin: Rio Tinto

2:30 PM

Overturning the Conventional Waste Hierarchy

Paper # 601704

Peter Gogolek: CanmetENERGY

2:50 PM

Mineral Carbonation: A Way to Turn Industrial CO₂ Emissions Into Value Added Products

Paper # 594505

Louis-César Pasquier, Julien Mocellin, Lan Huong Tran, Diana Aksenova, Guy Mercier, Jean-François Blais: Institut National de la Recherche Scientifique, Eau Terre Environnement

3:10 PM

Higee Scrubber with Green Surfactants for Cooking-Oil Fume Purification: PM and VOCs Pollutant Profile

Paper # 611107

Min-Hao Yuan: Department of Occupational Safety and Health, China Medical University, China; Yi-Hung Chen: National Taipei University of Technology, Taiwan; Ching-Ying Chang, Pei-Ting Hsu: Department of Occupational Safety and Health, China Medical University, China

Transportation Air Quality Modeling

Track: TRANS/AQMO

Room: 205A

6/25/2019, 1:30 PM

Platform – TCC: OMS

Chair: George Noel, Volpe Transportation System Center

Vice Chair: Robert Mentzer, HMMH, Inc.

1:30 PM

Start Emissions in MOVES

Paper # 590049

Sandeep Puppala, Mei Wu, Helen Ginzburg: WSP

1:50 PM

AERMOD Versus CALINE3 in a Field Evaluation

Paper # 602439

George Schewe: Trinity Consultants

2:10 PM

Comparing Prediction Trends Among Highway Air Dispersion Models - AERMOD, RLINE, and CALINE3

Paper # 629108

Michael Claggett, Victoria Martinez; David Kall: U.S. DOT, Federal Highway Administration; George Noel: Volpe Transportation System Center

2:30 PM

Case Studies of Mobile Source Air Toxics Modeling of Highway Projects

Paper # 629255

Michael Claggett, Victoria Martinez; David Kall: U.S. DOT, Federal Highway Administration; George Noel: Volpe Transportation System Center

2:50 PM

Efficacy of an Engineered Vegetative Buffer on Near-Road Air Quality

Paper # 633791

Pradeep Prathibha: Washington University at St. Louis; Ray Yeager, Aruni Bhatnagar: University of Louisville; Daniel Fleischer, Brent Bucknum: Hyphae Design Laboratory; Jay Turner: Washington University at St. Louis

3:10 PM

Forecasting for PM₁, PM_{2.5}, PM₄, and PM₁₀ Based on Traffic and Meteorological Parameters Using BPNN and the ARMA Model

Paper # 571830

Lanyi Zhang, Rongzu Qui: Fujian Agriculture and Forestry University, China; Jane Lin: University of Illinois at Chicago

Solid Waste Generation and Treatment

Track: WAST

Room: 302B

6/25/2019, 1:30 PM

Platform – TCC: WMB

Chair: David Minott, Arc5 Environmental Consulting, LLC

Vice Chair: David Greene, SCS Engineers

1:30 PM

Economical Design of Cold-Resistant Biogas Digesters for Degrading Household Waste in Mountainous Areas of Developing Countries

Paper # 595415

Sunita Baniya, Melanie Sattler: University of Texas at Arlington

1:50 PM

Valorization of Synthetic Anhydrite in Blueberry Fields

Paper # 594288

Lotfi Khiari: Université Laval; Marie-Christine Simard: Rio Tinto; Jacques Gallichand: Université Laval; Jean Lavoie: Rio Tinto; Roventa Pierre: Les Produits BCC Inc.

2:10 PM

Novel Approach of Biohydrogen Production from Biodiesel Industry Waste (Crude-Glycerol) Using Co-Culture System

Paper # 600188

Vinyak Pachapur: Centre de Recherche Industrielle du Québec (CRIQ)-Institut National de la Recherche Scientifique (INRS); Yann LeBihan: CRIQ; Satinder Kaur Brar: INRS, Eau Terre Environnement Research Centre

2:30 PM

Challenges in Permitting an Innovative Municipal Solid Waste Processing Facility

Paper # 591169

Lynn Muzzey, Jane Gilbert: Maine Department of Environmental Protection

2:50 PM

Physical-Chemical Characterization of “Black Bag” Waste in a Municipality

Paper # 594206

William Anderson, John Chandler, Steven Sawell: Department of Chemical Engineering, University of Waterloo; Wayne Parker: Department of Civil and Environmental Engineering, University of Waterloo

Hazardous Materials Treatment and Reuse Process Development

Track: WAST

Room: 302A

6/25/2019, 1:30 PM

Platform – TCC: WMR

Chair: Paul Ruehl, LaFarge Holcim

Vice Chair: Mingming Lu, University of Cincinnati

1:30 PM

Recovery of Metals from Silicon Based Solar Cells

Paper # 594841

Io Mizushima, Peter T. Tang: International Pacific University, Japan

1:50 PM

Cavitation Technology Development: Fast Analysis Methods Development in Effluent Treatment Applications

Paper # 588285

Dipti Prakash Mohapatra: National Research Council of Canada

2:10 PM

Kinetic Analysis of a Catalytic Hydro-Dechlorination Reaction of Select Poly-Chlorinated Biphenyls (PCBs)

Paper # 601895

Mingming Lu: University of Cincinnati; Yamei Zhou: Beijing Jiaotong University, China; Juan Xu, Kolawole Omoyosi: University of Cincinnati

2:30 PM

The LCL&L Process: A Sustainable Solution for the Treatment and Recycling of Spent Potlining

Paper # 594432

Laurent Birry, Jean Lavoie: Rio Tinto

Air Quality Monitoring: Challenges and Innovations - Part 2

Track: MINI/AQMM

Room: 206B

6/25/2019, 4:00 PM

Panel – TCC: AAM

Chair: Sonia Melancon, Ville de Montréal

This second part of a two-panel series will focus on different near-road and urban monitoring projects related to the monitoring of new pollutants. It will address the following topics:

- 1) Black carbon monitoring in ambient air of Montréal
- 2) On the use of computational fluid dynamics (CFD) for dispersion modeling of aircraft emissions and their impact on airport-related air quality: Application to the Montréal International Airport;
- 3) Spatial and temporal variations of tailpipe and non-tailpipe emissions in an urban environment;
- 4) Cold climate urban air quality in the age of emerging contaminants;
- 5) Potential and pitfalls of short-term monitoring and artificial intelligence in capturing the spatial distribution of air pollution in dense urban areas.

Panelists:

- *Sonia Melancon: Ville De Montréal*
- *Parisa Ariya: McGill University*
- *Marianne Hatzopoulou: University of Toronto*
- *Mohamed Chouak: Mechanical Engineering Department, Ecole de Technologie Supérieure*
- *Cheol Jeong: University of Toronto*
- *Antony Laberge: Québec Ministère de L'Environnement et de La Lutte Contre Les Changements Climatiques*

Air Legislation, Regulation, & Policy Developments

Track: MINI/REGU

Room: 202

6/25/2019, 4:00 PM

Panel – TCC: REG

Chair: Paul Siebert, Weston Solutions, Inc.

Updates on the development and implementation of air quality regulations, particularly emission regulations, promulgated under the U.S. and Canadian air quality legislation will be presented and discussed. Standards development of particular interest includes new source performance standards under Section 111, emission guidelines under Section 111(d), and maximum achievable control technology (MACT) standards under Section 112 of the Clean Air Act. The current state of standards development and the current schedule for developing and proposing standards will be discussed as well as the

implementation of promulgated standards and revisions. Recent court rulings and cases will also be addressed. U.S. EPA's required evaluations of the residual risks remaining after the application of MACT standards, as required by Section 112(f) of the Clean Air Act, will also be noted. State emission standards, often developed from U.S. EPA's Control Techniques Guidelines (CTGs), may also be covered. This panel session will present views of U.S. EPA; Environment Canada; State, Provincial and local agencies; industry; and environmental advocates on the status, directions and expectations regarding new source performance standards (NSPS) under 40 CFR 60 and MACT standards under 40 CFR 63, as well as criteria pollutant and air toxics regulations of other jurisdictions - local, state, and national. Representatives of U.S. EPA, state and Canadian environmental agencies, industry and, if available, environmental advocacy groups will present and discuss the status of these standards, with particular emphasis on the more current regulations. The panel may address the progress and problems with implementation of the promulgated standards and the status and results of court decisions.

Panelists:

- *Paul Siebert: Weston Solutions, Inc.*
- *Darcie Smith: U.S. EPA*
- *John Metzger: 3M Company*

Remote Sensing and Satellite-Based Monitoring

Track: AQMM

Room: 303B

6/25/2019, 4:00 PM

Platform – TCC: AAM

Chair: Rick Osa, ERM

4:00 PM

Assessment of AOD Product from INSAT-3D Imager

Paper # 594255

Rasma K.: Indian Institute of Technology (IIT) Mumbai, India; Ratish Menon: SCMS Water Institute, Karukutty, India; Harish Gadhavi: Physical Research Laboratory, Ahmedabad, India; Virendra Sethi: IIT Mumbai, India

4:20 PM

Industrial Process Dust Management, a Medium Range Lidar for Fugitive Emissions Quantification

Paper # 606547

Martin Allard: INO; Jonathan Bernier: Rio Tinto

4:40 PM

Thermal Infrared Hyperspectral Imaging for Visualization and Flow Rates Quantification of Methane Releases

Paper # 589877

Boubanga Tombet Stephane, Alexandrine Huot; Frédéric Marcotte, Martin Chamberland, Jean-Philippe Gagnon: Telops

5:00 PM

Advanced Remote Sensing Solutions Accommodating Petrochemical/Chemical Industrial Monitoring Needs and Challenges Using Real-time and Online Technologies

Paper # 601186

Gilad Shpitzer, Steven Lazar: Atmosfir Optics

Air Dispersion Modeling Case Studies: AERMOD

Track: AQMO

Room: 302A

6/25/2019, 4:00 PM

Platform –TCC: APM

Chair: Pietro Catizone, Woodard & Curran

Vice-Chair: Jennifer Beaulieu, Woodard & Curran

4:00 PM

Conditions Associated with Peak Observed SO₂ Concentrations and AERMOD's Skill in Simulating These Events

Paper # 593805

Robert Paine, Jeffrey Connors, Christopher Warren, Olga Samani: AECOM

4:20 PM

AERMOD and CALPUFF Dispersion Model Evaluation of Mass Conservation

Paper # 593581

Taylor Roumeliotis: Ramboll Canada Inc.; Rakesh Singh: Ramboll

4:40 PM

CALPUFF vs. AERMOD Dispersion Model – A Case Study

Paper # 602480

David Giard: BBA Inc.

5:00 PM

An AERMOD Case Study for Capped and Horizontal Point Sources

Paper # 599123

Anthony Schroeder: Trinity Consultants

5:20 PM

Modelling Emission Sources at Canadian Mines Using CALPUFF and AERMOD

Paper # 629331

Piotr Staniaszek, Chenxing (Ann) Teng: WSP Canada Inc.; Randall Rudolph: Millennium EMS Solutions Ltd.

Diesel-Free By '33: Ending Diesel Pollution in the San Francisco Bay Area

Track: CLIM/TRAN

Room: 303A

6/25/2019, 4:00 PM

Panel – TCC: CCP

Chair: Abby Young, Bay Area Air Quality Management District

Vice Chair: Lisa Fasano, Bay Area Air Quality Management District

Diesel particulate matter is a significant contributor to health impacts from air pollution, especially for disadvantaged communities living near freeways and industrial areas. It is also a significant contributor to climate change. This panel will present the Bay Area Air Quality Management District's region-wide strategy for eliminating diesel pollution in the San Francisco Bay Area within 15 years. Panelists will discuss the state of diesel pollution and resulting health impacts in the region, and the Air District's comprehensive response. Speakers will address different elements of the Air District's Diesel-Free By '33 initiative, including pathways and timelines to cost-effectively transition to zero-emission technologies by 2033. Key components of the initiative include incentive and financing strategies, and a political commitment by mayors and industry leaders to eliminate diesel use in their communities.

Panelists:

- *Lisa Fasano: Bay Area Air Quality Management District*
- *Karen Schkolnick: Bay Area Air Quality Management District*
- *Phil Martien: Bay Area Air Quality Management District*
- *Abby Young: Bay Area Air Quality Management District*

Health Benefits of Emissions Reductions

Track: H&EE

Room: 205C

6/25/2019, 4:00 PM

Platform – TCC: HEE

Chair: Jim Morrow, J. W. Morrow

Vice Chair: David McCready, EnviroCalc Consulting

4:00 PM

Air Quality and Health Benefits from Potential Coal Power Plant Closures in Texas

Paper # 586920

Brian Strasert: GSI Environmental; Daniel Cohan: Rice University

4:20 PM

Potential Health Benefits of Reducing Transport Emissions in Five Cities in Mexico's Bajío Region

Paper # 595420

Veronica Garibay-Bravo, María Tania López-Villegas, Rubén Garnica-Monroy, Alonso Gonzalez-Gonzalez, Susana Elisa Medina-Lezama, Wendy Erika Martínez-Reséndiz: Universidad Nacional Autónoma De México, México; John Koupal: Eastern Research Group

4:40 PM

**Development and Application of a Modelling System on Human Health Impact Evaluation by Change in Emissions:
Part 1 — Model Development**

Paper # 599337

Rakesh Singh, Michael Jammer: Ramboll

5:00 PM

**Development and Application of a Modelling System on Human Health Impact Evaluation by Change in Emissions:
Part 2 — Model Application**

Paper # 600527

Michael Jammer, Rakesh Singh: Ramboll

Power Industry Technology—Innovation, Challenges and Benefits

Track: POWR

Room: 302B

6/25/2019, 4:00 PM

Platform – TCC: PWR

Chair: John Kinsman, Edison Electric Institute

Vice Chair: Jordan Haywood, Siemens Energy, Inc.

4:00 PM

The U.S. Electric Power Sector — Changes in State and Federal Requirements, Fuels and Technologies Used, Air Emissions, and Customer Preferences

Paper # 602044

John Kinsman: Edison Electric Institute

4:20 PM

Forward to a Resilient Grid

Paper # 581424

Mark Sankey: Mark R. Sankey & Associates LLC

4:40 PM

Combined Cycle Gas Turbine Startup Emissions

Paper # 593571

Jordan Haywood: Siemens Energy, Inc.

5:00 PM

Greenhouse Gas Emissions Reduction: Natural Gas Conversion & Carbon Capture Technologies

Paper # 593499

Amber Isaac, Leah Blinn: Civil & Environmental Consultants, Inc.

5:20 PM

Comparative Life-Cycle Assessment of Carbon Capture Technologies

Paper # 592835

Richard Surprenant: CO₂ Solutions Inc.; François Saunier: Polytechnique Montréal; Sylvie Fradette, Ferrere Clerveaux, Éric Madore: CO₂ Solutions Inc.; Cécile Bulle: L'Université du Québec à Montréal

5:40 PM

Using Modular DSI and ACI Systems for Low Cost Air Pollution Control

Paper # 999993

Jon Norman: United Conveyor Corporation

Not in my Backyard: Legal Issues in Finding Common Ground for the Approval of Major Resource Projects

Track: REGU

Room: 205B

6/25/2019, 4:00 PM

Panel – TCC: EPE

Chair: Selina Lee-Andersen, McCarthy Tétrault LLP

With increasing environmental awareness and public participation in regulatory review processes, developing a major resource project in North America can be a daunting prospect for any project developer. Many projects already face complex environmental and regulatory issues, so stakeholder concerns can add an extra layer of complexity to permitting processes. Whether proponents are looking to develop mines, pipelines, port infrastructure or energy projects, the development of major projects can attract negative attention and act as a legal lightning rod not only in relation to the immediate project, but also as a forum for airing past grievances and other areas of disagreement with proponents or regulators. Environmental assessment and other permitting processes often seem to be less than adequate for resolving stakeholder conflicts, thus increasing the chances for negative media attention, project delays, and court action. As a result, federal and provincial governments are looking to bring greater certainty into regulatory approval processes. This session will consider proposed changes to the Canadian federal environmental assessment process (Bill C-69) and prospects for dispute resolution under the new regime, as well as provincial approaches to approving major projects and managing stakeholder conflicts. This session will also look at various case studies to identify the types of issues that stakeholders have raised within the context of major projects, as well as how the duty to consult Indigenous communities in Canada can impact regulatory processes. Finally, the session will consider strategies and best practices for reducing user conflicts and mitigating legal risk.

Panelists:

- *Selina Lee-Andersen, Partner, McCarthy Tétrault LLP*
- *Legal Expert invited*
- *Industry Representative invited*

Resource Conservation and Sustainability: Innovative Policies and Practices — Part 2

Track: SUST

Room: 301A

6/25/2019, 4:00 PM

Platform – TCC: SRC

Chair: Chih Chao, Cantech Environmental Services

Vice Chair: Maggie Clarke, Environmental Consultant

4:00 PM

Toward Greener Sludge Combustion: GHG Reduction, Ash & Nutrient Recovery and Policies:

The Case of Montréal, Longueuil and Québec City

Paper # 601012

Marc Hébert: Mark Hébert, Expert & Trainer

4:20 PM

New Options for Water Desalination

Paper # 573598

R. Ryan Dupont: Utah State University; Lou Theodore: Theodore Tutorials

4:40 PM

A Waste Minimization Approach to Reuse Spent Coffee Grounds

Paper # 601880

Mingming Lu, Yanmei Zhou, Suhas Srivastava: University of Cincinnati

5:00 PM

Benefits and Cost Implications of Anaerobic-Aerobic Sequential Treatment of Waste in Developing Countries: The Case of Lebanon

Paper # 596161

Charbel Abou Khalil: New Jersey Institute of Technology; Jessica Bou Nassar: McGill University; Claudette El Hajj, Khalil Khalil, Sophia Ghanimeh: Notre Dame University -Louaize, Lebanon

5:20 PM

The Modern Wildfire Situation: Seeking Solutions through the Smoke

Paper # 573040

Christopher Jones: University of Arizona

Electric Vehicles: Effects on the Environment

Track: TRAN

Room: 205A

6/25/2019, 4:00 PM

Platform – TCC: PLU

Chair: Gurdas Sandhu, U.S. EPA

Vice Chair: George Noel, Volpe Transportation System Center

4:00 PM

Human Health Impact Evaluation Associated with Deployment of Electric Vehicles in Canada

Paper # 599980

Rakesh Singh, Michael Jammer; Hajar Pourbafrani: Ramboll

4:20 PM

Environment and Climate Change – Canada's Electric Vehicle Testing in a Canadian Climate

Paper # 605566

Aaron Loiselle-Lapointe: Environment and Climate Change Canada

4:40 PM

Impact of the Deployment of Electric Vehicles on Population Exposure to Air Pollution

Paper # 601742

Laura Minet, Yijun Gai, An Wang, Daniel Posen; Marianne Hatzopoulou: University of Toronto

5:00 PM

Advances and Barriers to the Adoption of Heavy Duty Truck Electrification

Paper # 602143

Heidi Rous, Jeff Caton, Tim Witwer: ESA

5:20 PM

Transportation Electrification in Québec: Significant Progress and Moving Toward Our Targets

Paper # 629302

Arthur Billette: Transports Québec

5:40 PM

Reducing Emissions from the Transportation Sector through the Regulation of the Zero-Emission Vehicles Offer

Paper # 627508

Marilou Gosselin: Québec Ministère de L'Environnement et de La Lutte Contre Les Changements Climatiques

Per- and Polyfluoroalkyl Substances (PFAS) and Other Emerging Contaminants in Waste Management

Track: WAST/H&EE

Room: 204B

6/25/2019, 4:00 PM

Platform – TCC: WMR/WMB

Chair: Chris Lutes, Jacobs

Vice Chair: Melanie Sattler, University of Texas at Arlington

4:00 PM

PFAS Cycling Between Landfills and Wastewater Treatment Plants

Paper # 601793

Stephen Zemba: Harrison Roakes: Sanborn, Head & Associates

4:20 PM

PFAS Regulation Is Coming... Are You Ready? A Lawyer's View of the Evolving Regulatory Landscape of PFAS, Including U.S. Standards, Rules, and Litigation

Paper # 601989

Christopher Rich: Perkins Coie LLP

4:40 PM

The Next Frontier on PFAS Contamination: Sediment, Surface Water and Fish Tissue

Paper # 589398

Harry Behzadi: SGS

5:00 PM

Multimedia Transport of PFAS: Air Emissions to Groundwater – A Case Study

Paper # 600585

Eric Edwalds: Barr Engineering Co.

5:20 PM

PFAS Fate and Transport – Considering Soil as a Potential Reservoir for PFAS in the Environment

Paper # 601867

Harrison Roakes, Stephen Zemba: Sanborn, Head & Associates, Inc.

5:40 PM

Case Study on Atmospheric Deposition of GenX

Paper # 645782

Michael Pjetraj, Michael Abraczinskas: North Carolina Department of Environmental Quality - Division of Air Quality

How Does It Work? – Control Devices

Track: YPRO/AQCT

Room: 301B

6/25/2019, 4:00 PM

Panel – TCC: AAC

Chair: Jen Moore, 3M Company

This panel will provide both a general overview of emission control technologies currently available as well as a more in-depth review of several specific pollutant control strategies for particulate matter, volatile organic compounds, and other pollutants. This session will discuss thermal oxidizers, biofilters, carbon adsorbers, and baghouses. The presenters will discuss emission control equipment design and operation requirements and will give an overview of the industry or processes where it is commonly used. Panelist will also review of the regulatory drivers requiring the control or proposed regulations in the pipeline. This is a great introductory panel presentation for all attendees but is focused on reaching the student/young professional attendee. The attendee should walk away with a general understanding of emission control options available today for use in various applications with a focus on the criteria pollutants.

Panelists:

- *Jen Moore: 3M Company*
- *Bill Mullin: Biorem Technologies Inc.*
- *Lauren Dickerson: Barr Engineering Company*
- *Bill Norge: 3M Company*

Wednesday, June 26

Carbon Pricing in the U.S. and Canada: Successes and Key Program Features

Track: MINI/CLIM

Room: 206B

6/26/2019, 8:00 AM

Panel – TCC: CCP

Chair: Cassandra Kubes, American Council for an Energy-Efficient Economy

Efforts to put a price on greenhouse gas (GHG) emissions are increasing, with 57 carbon taxes and cap-and-trade programs currently implemented or scheduled for implementation worldwide. This panel will provide an overview of carbon pricing programs in effect in the U.S. and Canada, highlighting successes and key program features. Panelists will describe how programs invest proceeds to further reduce emissions, explain the role of carbon offsets, and highlight how these programs focus on emissions from the transportation sector. In recent years, GHG emissions from the transportation sector surpassed the electricity sector in the U.S., presenting an opportunity to find innovative strategies to further reduce transportation emissions. Presenters will incorporate findings from recent analyses that describe program impacts to date, including reduced emissions and improved public health.

Panelists:

- *Michael Conrardy, AECOM*
- *Pierre Langlois, Econoler*
- *James Bradbury, Georgetown Climate Center (invited)*
- *Mike Taylor: Emission Advisors, Inc.*

Dry Sorbent Injection for Effective SO₂ and HCl Emissions Control

Track: AQCT

Room: 301A

6/26/2019, 8:00 AM

Panel – TCC: AAC

Chair: Michael Atwell, Solvay Chemicals, Inc.

Vice Chair: Jordi Lopez Launes, Solvay Chemicals, Inc.

Dry Sorbent Injection (DSI) with sodium sorbents provides effective SO₂ and HCl removal to comply with stricter air quality regulations. Removal rates in excess of 90% are often achievable on installations with a baghouse and retrofits can be implemented with small footprints and minimal downtime. Solvay has extensive experience in testing and implementing DSI systems in North America and worldwide. This panel will illustrate successful collaboration examples amongst the different service providers involved in a DSI project. Solvay has accumulated over 30 years of DSI and sodium sorbent expertise in end use applications such as power generation, industrial boilers, waste-to-energy, metal processing, glass, cement and chemical industries.

STM EcoSystems is specialized in acid gas and heavy metals removal systems with equipment perfectly adapted to sodium sorbents.

Hatch supplies engineering, project and construction, business consulting and operational services to the mining, metallurgical, energy and infrastructure sectors. The Industrial Clean Tech group within Hatch specializes in the handling and treatment of industrial off-gases. Hatch has particular expertise in SO₂ abatement systems for metallurgical facilities.

Manuchar is a key partner in the development of DSI in Canada with strong logistics capabilities which helped Sanimax improve their residues incineration operations after successful testing with Solvay.

Panelists:

- *Michael Atwell: Solvay*
- *Sebastien Fortier: Manuchar*
- *Cornelia Cretiu: Solvay*
- *Joseph Riley: STM Ecosystems, Inc.*

- *Amanda Dalvi: Hatch - Industrial Clean Tech*
- *Jordi Lopez Launes: Solvay*

Air Quality Sensing: Designs and Validations – Part 1

Track: AQMM

Room: 303B

6/26/2019, 8:00 AM

Platform – TCC: AAM

Chair: Rick Osa, ERM

Vice Chair: Gregg Thomas, City of Denver

8:00 AM

The Use of Small Sensors to Augment Future Air Quality Services Within the Meteorological Service of Canada

Paper # 590560

Keith Jones, Corinne Schiller, Matthew Parsons, Lucy Chisholm: Environment and Climate Change Canada

8:20 AM

Comparisons of PM_{2.5} Measured from Air Sensors, FRM and FEM

Paper # 592280

Pei yu Lu, Chungsyng Lu: National Chiao Tung University Taiwan

8:40 AM

Air Monitoring Micro-Stations for Low Cost and Low Footprint Ambient Monitoring in Community Levels and Remote Locations

Paper # 593487

Quamrul Huda: Alberta Environment and Parks; Ken Hidalgo, Qikai Lu: University of Alberta; Marty Collins: Alberta Environment and Parks; Alberto Cevallos, Masum Hossain: University of Alberta

9:00 AM

Data Quality Control System—The Key to Sensor Application in Air Quality Monitoring Network

Paper # 600915

Yi Li: SailBri Cooper Inc.

9:20 AM

Low Cost PM_{2.5} Sensor Evaluation in Denver, CO

Paper # 601869

Gregg Thomas, Michael Ogletree, City of Denver

IMPROVE Network and Dust Issues

Track: AQMM

Room: 301B

6/26/2019, 8:00 AM

Platform – TCC: APV

Chair: Kip Carrico, New Mexico Institute of Mining and Technology

Vice Chair: Bret Schichtel, Air Resource Division, National Park Service

8:00 AM

Reconstructing Light Extinction from Aerosol Measurements: Evaluation of the Second IMPROVE Equation

Paper # 598118

Bret Schichtel, Anthony Prenni: National Park Service; Jenny Hand, William Malm, Scott Copeland: Colorado State University

8:20 AM

Temporal Trends in the Difference Between Gravimetric and Reconstructed Fine Mass in the IMPROVE Network

Paper # 595717

Jenny Hand: Colorado State University; Anthony Prenni, Bret Schichtel: National Park Service; William Malm: Colorado State University; Judith Chow: Desert Research Institute

8:40 AM

Reinterpreting Thermal Optical Reflectance Measurements —The Mystery of Increasing ROC Values

Paper # 595731

William Malm: Colorado State University

9:00 AM

Estimation of Brown Carbon Concentrations for Two Years of IMPROVE and CSN Aerosol Samples

Paper # 609053

Mark Green, Judith Chow, John Watson, Xiaoliang Wang, Steven Gronstal, Antony Chen: Desert Research Institute

9:20 AM

Silencing the Wind Blown Dust and Restoring the Rancho Seco Landscape in the Mojave Desert

Paper # 601344

Rob Farber: Atmospheric Clarity

Innovative Modeling Applications & Techniques: CFD Modeling

Track: AQMO/TRAN

Room: 205C

6/26/2019, 8:00 AM

Platform – TCC: APM

Chair: Bob Paine, AECOM

Vice Chair: Sergio Guerra, CPP Wind Engineering

8:00 AM

High Resolution Operational On-Line Modeling System for Accidental Emissions

Paper # 607150

Marc Chiappero, Didier Buty: Aria Technologies, France; Samya Pinheiro, Larissa Zanutto: Aria Technologies, Brazil

8:20 AM

Influence of Site Arrangement and Green Belt on Industrial Wind Erosion: A Case Study of Storage Piles and Surrounding Areas in Open Yards

Paper # 590764

Bruno Furieri: Federal University of Espirito Santo, Brazil; Jean-Luc Harion: IMT Lille Douai, France; Neyval C. Reis, Davi Monticelli, João Bosco Silva, Jennifer Coronel, Everton Xavier, Aderley Rodriguez, Jane M. Santos: Arcelor Mittal, Brazil

8:40 AM

Comparisons of Forward-in-time and Backward-in-time Lagrangian Stochastic Dispersion Models for Micro-Scale Atmospheric Dispersion

Paper # 601246

Sheng Li, Ke Du: University of Calgary

Risk Assessment/Management: Methods and Techniques

Track: H&EE

Room: 302A

6/26/2019, 8:00 AM

Platform – TCC: RAM

Chair: Scott Weaver, Ramboll

8:00 AM

Environmental Risk Assessment Process to Identify Potential Compliance Risks

Paper # 593494

Jenny Vieira: SNC-Lavalin Inc.

8:20 AM

Preventing Incidents During Midstream Drilling Operations — Anatomy of a Project

Paper # 602250

Patricia Brush, Viki Young, Atena Lunsford: WSP

8:40 AM

Sifting Through the Dirt: Managing Environmental Risks in Real Property Transactions

Paper # 601960

Priscilla Hampton: Perkins Coie LLP

Cross-functional Panel Discussion on the Treatment Confidential Information in Regulatory Submittals

Track: REGU

Room: 202

6/26/2019, 8:00 AM

Panel – TCC: REG

Chair: Adam Driscoll, 3M Company

In the course of preparing and submitting mandatory documentation to environmental agencies, industry is frequently required to include information which that company may consider to be confidential business information (CBI), and frequently this topic is a source of confusion and debate between industry and the regulatory community. The procedures that establish protections for CBI can vary significantly based upon jurisdiction, which can frequently cause the potential for improper characterization of data as CBI by industry, disagreement over which information may be protected as confidential, and/or the release of critical CBI to the general public, including a company's competitors. This panel brings together panelists representing various perspectives on the topic, beginning with an overview of the legal structure that establishes these standards in the U.S., followed by discussion by leaders from industry and the regulatory community, offering their perspectives on how this topic impacts them and why it's important. The panel will delve into the importance to industry for maintaining CBI as confidential all while balancing the need of regulatory agencies and the public at large to have access to needed information when reviewing regulatory submittals such as permit applications and routine reports. Finally, a panelist will provide an overview of the treatment of CBI in regulatory submittals in Canada to provide a compare and contrast with its treatment in the United States.

Panelists:

- *Adam Driscoll: 3M Company*
- *Jon Bloomberg: The Environmental Law Group, Ltd.*
- *Brian Bunger: Bay Area Air Quality Management District*
- *John Ferguson: GHD*
- *Rich Hadegger, Barr Engineering Co.*

Permitting Case Studies

Track: REGU

Room: 303A

6/26/2019, 8:00 AM

Platform – TCC: REG

Chair: Paul Siebert, Weston Solutions, Inc.

8:00 AM

Navigating Through an Engine Generator Permit Assessment in a Non-Attainment Area in Houston, Texas

Paper # 601242

Christopher Campbell, Cynthia Hibbard: CDM Smith

8:20 AM

Permitting Flexibility for a Transloading Facility

Paper # 602408

Kevin Eldridge: ERM

8:40 AM

Project Columbus: Permitting Egger's First U.S. Plant

Paper # 600676

Elizabeth Barfield: ERM; Roxanne Fincher: Eggers; Tom Wickstrom: ERM

9:00 AM

The Unique Air Permitting Challenges of Data Centers: Three Case Studies Examining Regional Differences in Air Quality Regulations

Paper # 601688

Stephanie Friel: Langan Engineering and Environmental Services

9:20 AM

Streamlining Air Permitting Process for Construction Projects

Paper # 612557

Sameer Shah: Burns & McDonnell

Zero Waste: Sustainability Issues and Evaluation Index

Track: SUST

Room: 302B

6/26/2019, 8:00 AM

Panel – TCC: SRC

Chair: Chih Chao, Cantech Environmental Services

Vice Chair: Maggie Clarke, Environmental Consultant

To achieve local or regional sustainability, one approach towards waste management is to drive for zero waste goal, which entails elimination of waste and maximization of resource efficiency. This however requires a fundamental change in our mindset, that is: waste is simply a misallocated resource and there is no such thing as a waste. A paradigm shift is also needed in the implementation system, that is: advancing from waste management to resource circulation. This panel will address the sustainability issues associated with zero waste system. Approaches of various practitioners will be shared, with a view of exchanging viewpoints and suggestions towards reaching a better understanding of the implication and implementation of zero waste system. Chih Chao and Maggie Clarke will describe the zero-waste approach and address the necessary and sufficient conditions for implementing zero waste systems. Technical, environmental, social, and economic indicators will be discussed. A sustainability index incorporating the afore-mentioned indicators will be presented, to illustrate the evaluation method and its usefulness in planning the targeted zero waste system. Stéphane Poirier will share industry's approach to industrial ecology practice, as part of the circular economy concept. Charles Tremblay will review a clean technology approach to converting waste to value-added biofuel and renewable chemicals. Peter Gogolek will then comment on the waste management hierarchy and highlight pertinent suggestions.

Panelists:

- *Chih Chao: Cantech Environmental Services*
- *Maggie Clarke: Environmental Consultant*
- *Stéphane Poirier: Rio Tinto*
- *Charles Tremblay: Enerkem*
- *Peter Gogolek: CanmetENERGY*

Transportation Emissions

Track: TRAN/AQMO

Room: 205A

6/26/2019, 8:00 AM

Platform – TCC: OMS

Chair: Roger Wayson, AECOM

Vice Chair: Helen Ginzburg, WSP

8:00 AM

The Urban Passenger Transportation Life Cycle Inventory for Comparison Across Modes Model (Transportlifecamm)

Paper # 602039

Alma Hernandez-Ruiz, Melanie Sattler: University of Texas at Arlington

8:20 AM

Comparison of Real-World Emissions of LDGVs of Different Vehicle Emission Standards on Both Mountainous and Level Roads In China

Paper # 572637

Lanyi Zhang, Rongzu Qui: Fujian Agriculture and Forestry University, China and University of Illinois at Chicago; Jane Lin: University of Illinois at Chicago

8:40 AM

Studying the Relation Between the Engine Size and Manufacturing Year of Gasoline-Fueled Vehicles and Exhaust Emission Percentages and Concentrations

Paper # 587045

Shamil Flamarz: University of Garmian, Iraq

9:00 AM

Evaluating Emission Factors of Diesel, Gasoline, and Liquefied Petroleum Gas (LPG) Vehicles in a Tunnel Study by Receptor Modeling Analysis

Paper # 594138

Lung-Wen Chen: University of Nevada, Las Vegas; Xiaoliang Wang, Judith Chow, John Watson: Desert Research Institute; Kin-Fai Ho: Chinese University of Hong Kong, Hong Kong; S.C. Frank Lee: The Hong Kong Polytechnic University, Hong Kong; Steven Sai Hang Ho: Desert Research Institute

9:20 AM

Quantifying the Air Quality and Energy Consumption Impacts of Connected and Autonomous Vehicles in an Urban Network

Paper # 601844

Ran Tu: University of Toronto; Shadi Djavadian, Bilal Farooq: Ryerson University; Marianne Hatzopoulou: University of Toronto; Lama Alfaseeh: Ryerson University

Bio Fuel from Waste and Waste Composting

Track: WAST

Room: 205B

6/26/2019, 8:00 AM

Platform – TCC: WMB

Chair: David Greene, SCS Engineers

Vice Chair: Melanie Sattler, University of Texas at Arlington

8:00 AM

Creating Carbon Neutral Energy Products from Construction & Demolition Wood

Paper # 611510

Brian Bobbie, Andrew White: Char Technologies Ltd.

8:20 AM

Air Pollutant Emissions and Regulatory Implications of a Biorefinery Producing Raw Bio-Oil

Paper # 591298

Arpit Bhatt, Yimin Zhang: National Renewable Energy Laboratory

8:40 AM

Predicting Bioenergy Potential from Vinasse Digestion: The VUMP Model (Vinasse Utilization for Methane Production)

Paper # 590580

Melanie Sattler: University of Texas at Arlington; Lucina Kuusisto: Texas A&M-Commerce; Victoria Chen: University of Texas at Arlington

9:00 AM

Permitting Composting Facilities to Meet Air Quality Standards and Waste Management Goals

Paper # 601115

9:20 AM

Mechanobiological Treatment of Household Waste for Small and Medium-Sized Municipalities: Results of A Pilot Project

Paper # 599870

Yves Bernard: Centre de Recherche Industrielle du Québec (CRIQ)

Prediction, Measurement, and Management of Multimedia Environmental Fate of PFAS and Emerging Contaminants from Source Facilities

Track: WAST

Room: 204B

6/26/2019, 8:00 AM

Panel – TCC: WMR

Chair: Michael Pjetraj, North Carolina Department of Environmental Quality

Vice Chair: Carol Kemker, U.S. EPA

This panel session will include presentations/discussions on the PFAS experiences of three U.S. state regulatory agencies and a U.S. EPA regional office. Specifically, the speakers will discuss how their agencies are working to identify sources of PFAS, quantify emissions, and characterize fate and transport of the substances. The panel will examine sampling initiatives across multiple media; the approach on deciding which locations to sample and how initial investigations spread out as more locations were identified. The panel will discuss the stack testing performed to identify current PFAS emissions from the air source and then general observations about level and type of PFAS found at each of the “typical” locations (i.e. non-air, landfills, waste sites, biosolids, etc). The panel will share experiences on the use of drones to help identify locations of venting of groundwater to surface water. The results of air emissions deposition modeling and rainwater analysis will be presented. Mitigation of contamination and alternative sources of drinking water for affected communities will be explored. Details of the U.S. EPA’s PFAS Action Plan that lists several key points for which the U.S. EPA and states should focus efforts and communicate risk will be discussed.

Panelists:

- *Michael Pjetraj: North Carolina Department of Environmental Quality - Division of Air Quality*
- *Carol Kemker: U.S. EPA*
- *Cathy Beahm: New Hampshire Department of Environmental Services*

Answering Critical Challenges Facing our Planet in Air Quality by using NASA's Current & Future Earth Observing Satellites

Track: MINI/AQMM

Room: 206B

6/26/2019, 10:10 AM

Panel – TCC: AAM

Chair: Sue Estes, NASA/UAH

This session brings together satellite data providers and data users to identify climate and environmental data and products, and to share ideas about maximizing the use of satellite data for societal benefit. The satellite data has real value in producing an Air Quality Index that actually protects the public from harm by allowing them to make decisions that protect their health and wellbeing. The area addresses issues of toxic and pathogenic exposure and health-related hazards and their effects for risk characterization and mitigation. The NASA Applied Sciences Program (ASP) within its Public Health and Air Quality (PHAQ) focus area, sponsors satellite data applications across a wide spectrum of areas including environmental health; infectious disease; air quality standards, policies, and regulations. PHAQ encourages the use of Earth observations in air quality management and public health by periodically issuing calls for proposals to academia, public and private sectors, and emphasizing partnerships between scientists and communities of application such as managers, policy and decision makers. As part of NASA’s (PHAQ) focus area we will have presentations from members of the Health and Air Quality Applied Sciences Team (HAQAST), who use NASA satellite data to help solve real-world public health and air quality problems – and diverse: they work all around the world on issues from wildfire smoke to diesel emissions. Also included will be a panel talk discussing polar orbiting and geosynchronous missions planned within the next decade that will enable better measurements of aerosol transport, sources and sinks and their impact on PM2.5.

Panelists:

- Sue Estes: NASA/UAH
- John Haynes: NASA
- Greg Osterman: NASA
- Ali Omar: NASA
- Mark Zondlo: Princeton University
- Tracey Holloway: University of Wisconsin, Madison
- Helena Chapman: NASA Applied Sciences Program

SO_x, VOC, and Toxic Gas Control Technologies - Part 1

Track: AQCT

Room: 301A

6/26/2019, 10:10 AM

Platform – TCC: AAC

Chair: Herek Clack, University of Michigan

10:10 AM

Thermophilic Treatment of Acetaldehyde Emission in a Biotrickling Filter

Paper # 595578

Ashraf Aly Hassan: United Arab Emirates University, UAE; Christopher Duerschner; Bruce Dvorak: University of Nebraska-Lincoln; Maitham Alfilaiti

10:30 AM

Development of a Standard Methodology to Inspect Tanks Using Optical Gas Imaging Technology

Paper # 601768

Eric Dupuis: Snc-Lavalin, Inc.; Frank Luissier: Ontario Ministry of the Environment, Conservation and Parks

10:50 AM

Consequences of Using Pseudo-Science to Determine Pseudo-Parameters for Flares

Paper # 588571

Michael Zelensky: Alberta Energy Regulator; Brian Zelt: Zelt PSI

11:10 AM

Evaluation of Trickling Bed Air Biofilter Performance Seeded With Bacillus Subtilis Biosurfactants for Removal of Paint Booth VOCs

Paper # 592076

Assem Dewidar, George Sorial: Department of Chemical and Environmental Engineering, University of Cincinnati

11:30 AM

Observation of Biodegradation of Ternary Mixture of Trihalomethanes in a Biotrickling Filter in the Presence of Fungi and Biosurfactant

Paper # 576716

Sanaiya Islam: University of Cincinnati

Air Quality Sensing: Designs and Validations – Part 2

Track: AQMM

Room: 303B

6/26/2019, 10:10 AM

Platform – TCC: AAM

Chair: Patrick Clark, Montrose Environmental

10:10 AM

Using Low Cost VOC Sensor Networks and Predictive Algorithms to Mitigate Pollution Risks to the Community

Paper # 601748

Patrick Clark, Austin Heitmann: Montrose Environmental Air Quality Services

10:30 AM

Testing and Validation of Mobile Air Quality Monitor for Sensing and Delineating VOC Emissions

Paper # 599728

Govind Thakor, Piaoyu Hu, Radu Motisan, Yi Wai Chiang, Rafael Santos: University of Guelph

10:50 AM

A Low-Cost Optical Detection System for Methane and Odors

Paper # 601314

Anna Scott, Yan Azdoud: Troposphere Monitoring

11:10 AM

Remote Vapor Intrusion Air Sampling Using SGS-Smart Sense

Paper # 589409

Harry Behzadi: SGS

11:30 AM

Next Generation Monitoring and Downsizing

Paper # 601958

Andy Tolley: American Ecotech

Regional Haze and Nitrogen

Track: AQMM

Room: 301B

6/26/2019, 10:10 AM

Platform – TCC: APV

Chair: Kip Carrico, New Mexico Institute of Mining and Technology

Vice Chair: Bret Schichtel, National Park Service

10:10 AM

Trends in Reactive Nitrogen Wet Deposition at Rocky Mountain National Park by Transport Direction

Paper # 600538

Kristi Gebhart, Bret Schichtel, Kristi Morris, Jim Cheatham, John Vimont: National Park Service; Robert Larson: Wisconsin State Laboratory of Hygiene

10:30 AM

Loch Vale, CO Wet Reactive Nitrogen Deposition Long Term Trends and Uncertainty

Paper # 597947

Bret Schichtel, Kristi Morris, Kristi Gebhart, Jim Cheatham, John Vimont: National Park Service; Robert Larson: Wisconsin State Laboratory of Hygiene

10:50 AM

Urban and Remote Coarse Aerosol Mass Across the United States

Paper # 595730

Jenny Hand: Colorado State University; Bret Schichtel: National Park Service; Thomas Gill: University of Texas at El Paso

11:10 AM

Looking Ahead to the Second Decadal Review for the Regional Haze Rule

Paper # 593802

Robert Paine: AECOM

11:30 AM

Single-Source Visibility Ranking and Modeling Techniques for Regional Haze Sips

Paper # 602065

Ralph Morris: Ramboll

Air Monitoring Methods, Data, and Uncertainties

Track: AQMM

Room: 303A

6/26/2019, 10:10 AM

Platform – TCC: AAM

Chair: Praveen Srirama, CEMRC

10:10 AM

Reliability of Ambient Data in Regulatory Decision Making and Compliance

Paper # 601040

Dennis Fudge: Saskatchewan Ministry of Environment

10:30 AM

Compelling Evidence of Nitrogen Dioxide Monitoring Errors with Heated Metal Converters from Several Comparison Field Studies with Stable and Linear Photolytic Converters

Paper # 603050

Charles Odame-Ankrah, Kelly Pickrell: Global Analyzer Systems Ltd.

10:50 AM

Evaluation of Physical and Chemical Properties of Aerosols in Montréal: The Existence of Airborne Nano-Sized Emerging Contaminants

Paper # 601596

Devendra Pal, Parisa Ariya: Atmospheric and Oceanic Sciences - McGill University

11:10 AM

Aerosol Deposition in the Sampling Train of Extractive PM CEMS

Paper # 580089

Shi-Bo Wang: National Taiwan University, Taiwan; Yu-Mei Kuo: Chung Hwa University of Medical Technology, Taiwan; Sheng-Hsiu Huang, Chih-Wei Lin, Chih-Chieh Chen: National Taiwan University, Taiwan

11:30 AM

Fenceline Monitoring (EPA 325), LDAR & Fugitive Emissions: Technology vs Efficiency

Paper # 616593

Darlene Hoogenes-Stastny: ALS Environmental

Innovative Modeling Applications & Techniques: Innovative Techniques

Track: AQMO

Room: 205C

6/26/2019, 10:10 AM

Platform – TCC: APM

Chair: Ralph Morris, Ramboll

Vice Chair: Piotr Staniaszek, WSP

10:10 AM

The Hamilton Airshed Challenge

Paper # 599361

Janya Kelly, Anthony Ciccone, Katherine Armstrong: Golder Associates Ltd.

10:30 AM

Operational Two-Way Coupled Air Quality Modeling System for Coastal Environments: Phase 1 Concept Development and Benchmarking

Paper # 601777

Matthew Jones, Michael Newman: Woodard & Curran

10:50 AM

Use of SCICHEM to Model an Anhydrous Ammonia Release for Risk Management Program Compliance

Paper # 599144

Travis Hicks: Southern Company

Greenhouse Gas Inventories

Track: CLIM

Room: 205A

6/26/2019, 10:10 AM

Platform – TCC: CCI

Chair: Tree Raine, ERM

Vice Chair: Morris Demitry, AFLCMC/EZVC

10:10 AM

Reducing GHG Emissions from Waste Management

Paper # 599929

Doug Huxley: Jacobs Engineering Group; Jeremy Pathmanabhan: City of Los Angeles; Carolyn Meisner, Grace Lee: Jacobs Engineering Group

10:30 AM

Validation of Perfluorocarbon Slope at Alcoa Canadian Smelters with Anode Effect Assessment and Measurements Development to Estimate Accurate Total Emissions

Paper # 592475

Luis Espinoza-Nava, Christine Dubois, Pascal Lavoie, Batista Eliezer: Alcoa

10:50 AM

Chemical and Mineralogical Assessment of the Wollastonite-Amended Agricultural Soils – An Ontario Field Study

Paper # 590811

Fatima Haque, Rafael Santos, Yi Wai Chiang: University of Guelph

11:10 AM

Mitigation of Climate Change Impacts from Biomass Systems in Egypt

Paper # 591349

Mounir Wahba Labib: National Academy of Science, Egypt; Yasser Saad Mohamed: Climate and Environment Protection Foundation, Egypt; Alan Gertler: Desert Research Institute

Climate Change Litigation (New Panel ID #999995 opened 5/6/19 put into 4H)

Track: MINI/CLIM

Room: 302A

6/26/2019, 9:40 AM

Panel – TCC: LHC/CCP

Chair: Jennifer ??, Law Firm

Passing any type of Climate Change regulation is fraught with competing interests that makes litigation inevitable. The panel will review recent court cases and challenges to Carbon taxes, etc....

Panelists:

- Jennifer....: Law Firm
- Brian Bunger?: BAAQMD
- TBD

Air Permitting Problems and Solutions

Track: REGU

Room: 202

6/26/2019, 10:10 AM

Panel – TCC: REG

Chair: Paul Siebert, Weston Solutions, Inc.

Vice Chair: Gary McCutchen, RTP Environmental Associates, Inc.

This panel will discuss permitting issues and permit conditions that are prone to problems from various industry, government, and environmental perspectives. Air pollutant emission sources are generally required to obtain construction and operating permits from state, provincial or local air quality agencies, or directly from the U.S. EPA or Environment Canada. Generally, the issuing agency will provide an opportunity for a facility to review and comment on draft permit conditions. Taking advantage of that opportunity is essential to ensure the best permit that can be obtained. Particular permit conditions that may present problems are: inflexible conditions that do not provide for real world variations; emission limitations that cannot be routinely or consistently achieved in practice; monitoring, recordkeeping, and reporting conditions that require excessive effort; and stack testing requirements that are of questionable value yet costly. These and others may require substantial effort, yet produce little environmental benefit. On the other hand, permitting agencies and environmental advocacy groups may perceive different problems with permit conditions. The panel will discuss alternative conditions and other remedies for problem permit conditions. Although modification of permit conditions is within the exclusive purview of the permitting agency, permitting agency personnel may have little familiarity with local issues or the difficulty of complying with some permit conditions. Facility personnel should strive to explain inherent difficulties and costs with some permit conditions, so they can be changed when in draft or final form. Similarly, the public should take advantage of its opportunities to inquire and comment on a proposed permit based on their familiarity with the locality or specific issues.

Panelists:

- *Paul Siebert: Weston Solutions, Inc.*
- *Gurinder (Gary) Saini: RTP Environmental Associates, Inc.*
- *Kevin Eldridge: ERM*
- *Jane Gilbert: Maine Department of Environmental Protection*
- *Tom Rolfson: Power Engineers, Inc.*
- *Blake Boling: Boeing*

Corporate Implementation of Sustainability: Ethics, Methods, Metrics, Reporting, and Measured Benefits - Case Studies

Track: SUST

Room: 302B

6/26/2019, 10:10 AM

Platform – TCC: SUS

Chair: Ram Ramanan, Desert Research Institute

Vice Chair: Georges Bou-Saab, Iowa State University

10:10 AM

A Survey of U.S. Industrial Sustainability Reports

Paper # 589705

Kristian Macoskey: Civil & Environmental Consultants, Inc.

10:30 AM

A Review of the Airport Carbon Accreditation Programme In The Context of North American Airports

Paper # 599951

Jeremy Gilbride, John Pehrson: CDM Smith

10:50 AM

Living Our Values: An Environmental Consulting Firm Pursues the Science Based Targets Initiative - A Case Study

Paper # 601765

Chris Easter, Jeff Caton, Breanna Sewell: ESA

Renewable Natural Gas: Opportunities for Waste Management

Track: WAST/SUST

Room: 205B

6/26/2019, 10:10 AM

Panel – TCC: WMB

Chair: Sandra Franco, Coalition for Renewable Natural Gas, Franco Environmental Law

Organic waste represents a significant percentage of what goes into landfills nationwide. Biogas is a mixture of carbon dioxide and hydrocarbons, primarily methane gas, which is produced from the biological decomposition of organic wastes. By converting organic waste into products like biogas, overall waste can be reduced. Biogas systems, then, can be used to address methane emissions from these wastes and potentially turn a waste management issue into a revenue opportunity for communities, providing local jobs and environmental benefits. This panel will provide background on Renewable Natural Gas (RNG), a low-carbon substitute for geologic natural gas, which is biogas-derived. Biogas can be collected at local landfills, wastewater treatment plants, commercial food waste facilities, and agricultural digesters (dairies, etc.). RNG (also referred to as "biomethane") is a high-BTU gas that is produced after the collected biogas is treated to remove the majority of the carbon dioxide, nitrogen and other contaminants and upgraded to meet natural gas pipeline quality specifications. The panel will discuss development, distribution and beneficial uses of RNG, including upcoming projects. We will also discuss important policy drivers that has supported growth of this industry. For example, RNG is considered an advanced biofuel under the Renewable Fuel Standard program, with the bulk of production qualifying as cellulosic biofuel. This has provided incentives to produce and increasingly use RNG as a transportation fuel. In addition, several states have passed or are considering legislation to provide incentives for RNG production and use.

Panelists:

- *Carlyle Khan: Solid Waste Management Services, City of Toronto*
- *Representative from DTE Energy (Invited)*
- *Brad DeMaeyer: Enbridge Gas Inc.*
- *Sandra Franco: Coalition for Renewable Natural Gas*
- *Pat Foody: Advanced Biofuels, logen Corporation*

How Does It Work? Border Battle - Environmental Regulations in the United States and Canada

Track: YPRO/REGU

Room: 204B

6/26/2019, 10:10 AM

Panel – TCC: REG

Chair: Elizabeth Rubenstein, Klodowski Law

Vice Chair: Jen Moore, 3M Company

This panel will provide an overview of different types of industries and the environmental impacts and challenges they face. Each industry representative will provide an overview of the industry and/or process and will explain how their processes work. They will discuss emission sources that are common to their industry and will review what regulatory challenges are unique to their operations. Finally, each representative will give a brief look at the future of their industry and what challenges they see in the future. Industries covered during this session include aluminum smelting, polymers, and other manufacturing. All presenters will follow the same agenda, allowing attendees to make comparisons across industries. This is a great introductory panel presentation for all attendees but is focused on reaching the student/young professional attendee.

Panelists:

- *Jen Moore: 3M Company*
- *Robert Mugo: Barr Engineering and Environmental Science Canada Ltd.*
- *Brian Bunger: Bay Area Air Quality Management District*
- *Adam Driscoll: 3M Company*

Air Pollutant/Greenhouse Gas Emissions Initiatives

Track: MINI/CLIM

Room: 206B

6/26/2019, 1:30 PM

Platform – TCC: REG

Chair: John Koehler, Yorke Engineering, LLC

1:30 PM

Building A Healthy Breathing Environment - From the Bay Area to The World

Paper # 601866

Victor Douglas: Bay Area Air Quality Management District

1:50 PM

Metro Vancouver's *Clean Air Plan and Climate 2050: An Integrated Approach to Air Quality and Climate Action Planning*

Paper # 602161

John Lindner, Jason Emmert: Metro Vancouver Regional District

2:10 PM

Climate Technology Review: Identifying, Financing, and Scaling Emerging Technologies

Paper # 588338

Ranyee Chiang, Derrick Tang: Bay Area Air Quality Management District

2:30 PM

Air Issues Policies for Cleaner Energy and GHG Solutions

Paper # 602286

Manfred Klein: MA Klein and Associates

2:50 PM

The Path to the Cleanest Gas in the World

Paper # 600734

Jean-Luc Allard: SNC-Lavalin

SO_x, VOC, and Toxic Gas Control Technologies - Part 2

Track: AQCT

Room: 301A

6/26/2019, 1:30 PM

Platform – TCC: AAC

Chair: Charles Baukal, John Zink Company, LLC

1:30 PM

Modeling VOC Adsorption on Beaded Activated Carbon in a Multistage Counterflow Fluidized Bed Adsorber

Paper # 593691

Morteza Davarpanah, Zaher Hashisho: University of Alberta; John Phillips, David Crompton, James Anderson, Mark Nichols: Ford Motor Company

1:50 PM

Treatment of Gaseous Effluents Emitted from Tire Manufacturing Industry: Robustness of Biofilters

Paper # 599295

Luc Malhautier, Janick Rocher: IMT Mines Alès, France; Olivia Gouello, Luc Jobert, Claire Moura,; Yann Gauthier, Aline Bertin: Michelin, France; Jean-François Desprès: Olentica, France; Jean-Louis Fanlo: IMT Mines Alès, France

2:10 PM

Development of an Innovative Biofilter Based on Industrial Ecology Concepts

Paper # 601455

Alexandre Pilote, Nicolas Turgeon: Centre de Recherche Industrielle du Québec (CRIQ); Benoit Fiset, Isabelle Bouvier, Eric Caputo: Sanimax

2:30 PM

Design and Evaluation of a Hydrogen Fluoride Scrubber for Management of Alkylation Process Hazards in a Petroleum Refinery

Paper # 601573

Christopher Muller, Chris Moon, William England, James Joseph, Justin Kinney: Purafil, Inc.

2:50 PM

Comparative Study on Leak Detection Capabilities of Two Recognized Methods (U.S. EPA M21 and Optical Gas Imaging [OGI]) In LDAR Program.

Paper # 601762

Alexandre Saulnier: SNC-Lavalin, Inc.; Larry Smet: Ontario Ministry of the Environment

Emissions for Point and Area Sources

Track: AQES

Room: 303A

6/26/2019, 1:30 PM

Platform – TCC: AAE

Chair: Juan Carlos Ramirez-Dorransoro, Ball State University

Vice Chair: Shamia Hoque, University of South Carolina

1:30 PM

Development of an On-Site Method to Measure Fugitive Greenhouse Gas (GHG) Emissions from Covered Pig Manure Storage Pits

Paper # 599822

Ariane Lévesque, Matthieu Girard, Jérémie Gravel: Institute of Research and Development In Agri-Environment (IRDA)

1:50 PM

Measurement of PM10/2.5 Emissions from Refinery Sources Using Other Test Method 37 (OTM-37) Dilution Sampling

Paper # 595216

Glenn England: Ramboll; Triana Fleming, Beverly Coleman, Weston Beck: Chevron; Jim Barufaldi, David Elam: TRC Solutions

2:10 PM

Characterization of GHG Fugitive Emissions From An Oil Sands Tailings Pond In Northern Alberta - Air Emissions Studies Session

Paper # 595744

Long Fu: Government of Alberta; Quamrul Huda, Lucas Zhang, Zheng Yang, Nick Veriotes: Alberta Environment and Parks

2:30 PM

Source Emissions and Fuel Quality Testing for Biogas, Biomass, and Bioenergy

Paper # 600781

Thomas Dunder: TRC Solutions

2:50 PM

Methane Emissions from Abandoned Oil and Gas Wells: A Case Study in Oil Creek State Park, Pennsylvania

Paper # 601512

Natalie Pekney, Matthew Reeder, James Sames, Gabe DeWitt, Andrew Tinker: National Energy Technology Laboratory

Next Generation of Air Monitoring Tools for Fugitive, Fenceline, and Area Source Applications

Track: AQMM

Room: 303B

6/26/2019, 1:30 PM

Platform – TCC: AAM

Chair: George Ingrid, U.S. EPA

Vice Chair: Dominic Lortie, Centre d'Expertise En Analyse Environnementale Du Québec

1:30 PM

Field Demonstration of the VOC Emissions Tracker (VET) to Detect Fugitive Air Toxic Emissions in Dallas, TX

Paper # 593578

Ingrid George, Eben Thoma, Duvall Rachelle, Michael Miller, Mark Sather, Parikshit Deshmukh, Jacob Canlser: U.S. EPA

1:50 PM

Case Studies: Strategic Air Quality Monitoring at Manufacturing Facilities

Paper # 601539

Chris Nelson: 3M Company

2:10 PM

A New Plug-In Hybrid Electric TAGA Mobile Laboratory to Analyze Ambient Air In Real-Time In Québec

Paper # 601695

Dominic Lortie: Centre d'Expertise En Analyse Environnementale Du Québec; Patrick Avon: TAGA Mobile Laboratory, Centre d'Expertise En Analyse Environnementale Du Québec; Marco Li Fraine, Louis Martel, Danielle Richoz, Christophe Romiguière: Centre d'Expertise En Analyse Environnementale Du Québec

2:30 PM

Drone-Assisted Detection of Radioactive Sources: An Innovative and Safe Solution

Paper # 601718

Dominic Lortie: Centre d'Expertise En Analyse Environnementale Du Québec; Patrick Chatelle: Dronexperts; Nicolas Turgeon, Marco Li Fraine, Alexandre Pilote, Danielle Richoz, Christophe Romiguière: Centre De Recherche Industrielle Du Québec (CRIQ)

2:50 PM

Use of Forensic Techniques to Identify Pollutant Sources in Air Quality Monitoring

Paper # 612542

Sameer Shah: Burns & McDonnell

Downscaling Global Climate Models to Use in Local Adaptation Planning

Track: CLIM

Room: 205A

6/26/2019, 1:30 PM

Panel – TCC: CCI

Chair: Michael Hendrix, LSA Associates

Global climate models have relatively coarse spatial resolution. A single grid-cell of a global climate model can cover the distance from San Francisco to Sacramento. There is a lot of variation between San Francisco and Sacramento that impacts the localized climate conditions including topography and distance from the ocean which effect surface air temperatures, precipitation levels and type of precipitation. If you want to know how temperatures or precipitation might change on finer spatial scales, you need to downscale the climate model output. California through collaborative efforts of the California Governor's Office of Planning and Research (OPR), the California Energy Commission (CEC) and the Scripps Institution of Oceanography at the University of California, San Diego (UCSD) completed a statistical downscaling of four global climate models for the State in a process called Localized Constructed Analogs (LOCA). The LOCA method is a statistical scheme that produces downscaled estimates suitable for hydrological simulations using a multi-scale spatial matching scheme to pick appropriate analog days from observations. This panel presentation will provide an overview of the LOCA downscaled climate modeling system used in California in the development of the CalAdapt Tools. CalAdapt is a web based GIS toolset that provides local planning departments throughout California local climate change forecasts (2050 and 2100) to use in determining climate risks and developing adaptation plans. The panel discuss how the City of Corona California used the CalAdapt toolkit to determine climate risks and develop an adaption plan.

Panelists:

- *Michael Hendrix: Air Quality and Climate Change, LSA Associates*
- *Michael McCormick: Senior Climate Change Planner, California Governor's Office of Planning and Research*
- *Joanne Coletta: Community Development Director, City of Corona, CA*

Environmental Monitoring in the Oil Sands

Track: O&GS

Room: 301B

6/26/2019, 1:30 PM

Panel – TCC: PIM

Chair: Ole Mrklas, Canada's Oil Sands Innovation Alliance (COSIA)

Vice Chair: Randy Rudolph, Millennium EMS Solutions Ltd.

Canada's Oil Sands Innovation Alliance (COSIA) is an alliance of oil sands producers focused on accelerating the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation. COSIA

collaborates and innovates: Our vision is to enable responsible and sustainable growth of Canada's oil sands while delivering accelerated improvement in environmental performance through collaborative action and innovation. We bring together leading thinkers from industry, government, academia and the wider public to improve measurement, accountability and environmental performance in the oil sands in five priority areas. These environmental priority areas are oil sands monitoring, greenhouse gases, land, water and tailings. This session will be focused on recent projects in the oil sands undertaken to clarify current understanding of environmental issues and monitoring.

Panelists:

- *Ole Mrklas: Canada's Oil Sands Innovation Alliance (COSIA)*
- *Randall Rudolph: Millennium EMS Solutions Ltd.*
- *Cameron McNaughton: Golder Associates*
- *Monique Dube: University of Saskatchewan*
- *Joy Romero: Clean Resource Innovation Network*
- *Francoise Robe: RWDI*

Economics, Partnerships & Environmental Leadership

Track: REGU

Room: 205C

6/26/2019, 1:30 PM

Platform – TCC: EPE

Chair: Jim Ryckman, AFLCMC/WNVC

Vice Chair: Jason Krawczyk, ERM

1:30 PM

EPA's New SMALL Priority (Small Business Assistance) and How It's Already Benefiting You

Paper # 593424

Tony Pendola: North Carolina Department of Environmental Quality

1:50 PM

ABIH and IPEP: Economics, Partnership, and Environmental Leadership in the Service of Environmental and Human Health

Paper # 602092

Diana Kobus: Institute of Professional Environmental Practice (IPEP); Ulric Chung: American Board of Industrial Hygiene and IPEP

2:10 PM

Financial Foundation to Building a Healthy Breathing Environment

Paper # 601845

Leonid Bak: Bay Area Air Quality Management District

2:30 PM

Québec's Industrial Release Reduction Program: A Progressive Intervention Strategy

Paper # 605903

Jany McKinnon, Irina Constantinescu: Gouvernement Du Québec

2:50 PM

Economics Analysis for Industrial Wastewater Services for Air Force Plant 6 at Marietta, GA

Paper # 595292

Morris Demitry, Shreyas Balaram, Arshima Rieara: U.S. Air Force

Modeling Issues in PSD/Nonattainment/Minor NSR Permitting

Track: REGU/AQMO

Room: 202

6/26/2019, 1:30 PM

Platform – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc.

Vice Chair: Raj Rao, U.S. EPA

Ambient air quality dispersion modeling is used for issuance of prevention of significant deterioration (PSD) permits. However, modeling is also sometimes used in issuance of minor NSR permits as well as, in some situations, nonattainment major NSR permits. U.S. EPA has been working on addressing concerns raised by the regulated community regarding dispersion modeling through additional guidance and rulemaking.

The experts on this panel will discuss the permitting implications of ozone and PM2.5 precursors and other modeling issues. The panel will also outline recent developments in the air dispersion modeling universe, including, what is considered ambient air, latest model developments, etc.

The panelist will outline the difficulties involved in assessing the impacts of precursor emission changes on attainment strategies. This will be discussed from both a national and state level and both technical and legal issues will be identified.

Panelists:

- *Gurinder (Gary) Saini: RTP Environmental Associates, Inc.*
- *Raj Rao: U.S. EPA*
- *Eric Hiser: Jorden, Hiser & Joy*
- *Gale Hoffnagle: TRC Environmental Corporation*

Sustainability Tracking, Metrics, Initiatives, and Analytics

Track: SUST

Room: 302B

6/26/2019, 1:30 PM

Platform – TCC: SUS

Chair: Ram Ramanan, Desert Research Institute

Vice Chair: Georges Bou-Saab, Iowa State University

1:30 PM

Fair Trade and Neutralisation Process

Paper # 600657

Lilia Righi: IAE Nice, Université Cote D'azur, France

1:50 PM

Sustainability Analytics — The Critical Link Between Sustainability and Business Strategy

Paper # 625052

Ram Ramanan

2:10 PM

Life Cycle Assessment of Large Wind Turbines in the U.S.: A Texas Case Study

Paper # 590575

Melanie Sattler, Ali Al-Saleh: University of Texas at Arlington

2:30 PM

Lifecycle Environmental Impact of a High-Speed Rail System in the I-45 Corridor

Paper # 602006

Jesuina Chipindula, Venkata Botlaguduru, Doeun Choe, Raghava Kommalapati, Hongbo Du: Prairie View A&M University

Community Noise and Road Emissions

Track: TRAN

Room: 302A

6/26/2019, 1:30 PM

Platform – TCC: CNV

Chair: Dominic Scarano, HMMH, Inc.

1:30 PM

Environmental Noise: Modelling Techniques to Quiet your Acoustic Troubles

Paper # 595561

Derek Flake: Aercoustics Engineering Limited

1:50 PM

Noise Survey Program to Reduce the Potential Impact on the Community Surrounding a Large Oil Refinery

Paper # 601634

Eric Vigneault: Valero Energy Inc.; Michel Pearson: Soft Db; Francois Gagnon, Geneviève Côté: Valero Energy Inc.

Waste Management and International Perspectives

Track: WAST

Room: 205B

6/26/2019, 1:30 PM

Platform – TCC: WMB

Chair: Melanie Sattler, University of Texas, Arlington

Vice Chair: David Greene, SCS Engineers

1:30 PM

Sustainability of Small-Scale Waste Treatment Units for Refugee Camps

Paper # 596150

Charbel Abou Khalil: New Jersey Institute of Technology; Marc Aoun, Sophia Ghanimeh: Notre Dame University-Louaize (NDU), Lebanon

1:50 PM

Reciclo Organicos: Canada's Support to Chile to Mitigate Greenhouse Gas Emissions from the Municipal Solid Waste Sector

Paper # 576397

Arvind Chandrasekar: Arcadis Canada Inc.

2:10 PM

Comparing Odour Emissions from Collection of Different Types of Municipal Solid Wastes in Montréal

Paper # 614953

Martin Héroux: Ville de Montréal; Laurent Spreutels, Robert Legros: CRVMR - Polytechnique Montréal

2:30 PM

Potential of Municipal Solid Waste as Malaysian Bioenergy Resource: GHG Emission, Energy Production, Environmental, and Economy Evaluation

Paper # 599803

Josfirin Rangga, Sharifah Norkhadajah, Syed Ismail, Irniza Rasdi, Karmegam Karupiah: Universiti Putra Malaysia (UPM), Malaysia

YPAC Panel — Case Studies in Air Dispersion Modeling for Young Professionals

Track: YPRO/AQMO

Room: 204B

6/26/2019, 1:30 PM

Panel – TCC: APM

Chair: Paul Algu, RTP Environmental Associates, Inc.

Vice Chair: Jen Moore, 3M Comany

Atmospheric dispersion modeling is a useful skill used for understanding how air pollutants disperse in the atmosphere but only a limited number of students and young professionals are exposed to it. This panel session will focus on the application of air modeling used in the real world by showcasing various case studies on air modeling. The panel will be geared towards young professionals and will teach by example the various ways air modeling can be used and applied to real-life situations and projects. The panelists will include representatives from several industries who have used modeling as part of a project

they completed at their workplace. The panel will conclude with open discussions and Q&A which will provide students and YPs to interact with the panel members.

Panelists:

Eric Edwalds: Edge Engineering Co.

Kristin Fritchman: Civil & Environmental Consultants, Inc.

Québec and California Cap and Trade Update and Expectations for Post 2020

Track: MINI/CLIM

Room: 206B

6/26/2019, 3:30 PM

Panel – TCC: CCP

Chair: Mike Taylor, Emission Advisors, Inc.

Vice Chair: Harish Rao, Rao Consulting Services Inc.

There are several regulatory changes anticipated post 2020 to both the Québec and California Cap and Trade Markets with its associated interest in upcoming key dates and in the finalization of amendments to those programs. This panel will discuss the programmatic changes in both jurisdictions along with a discussion of expected market and pricing impacts related to the post 2020 changes. The panel speakers will provide an overview of the historical pricing of carbon and the key changes to the program since inception. The panel will also discuss the expected costs for affected facilities in California and Québec to comply with the respective programs, and the trading strategies that are available to market participants to reduce cost of compliance. Case studies of companies' outcomes from evaluating and using different strategies will be used to demonstrate reductions in carbon compliance costs under the Carbon Cap and Trade Program. The discussion will also focus region-wide compacts, including the fallout and consequences of Ontario leaving the program in 2018 as well as the possibilities and effects of other provinces and states joining the program.

Panelists:

- *Mike Taylor: Emission Advisors, Inc.*
- *Harish Rao: Rao Consulting Services Inc.*
- *California Regulatory Representative (Invited)*
- *Canadian Representative (Invited)*

PM Control Technologies

Track: AQCT

Room: 301A

6/26/2019, 3:30 PM

Platform – TCC: AAC

Chair: Minh Pham, South Coast Air Quality Management District

3:30 PM

Eliminating Bag Failure Problems in Baghouses

Paper # 593271

John McKenna: ETS, Inc.; Lou Theodore: Theodore Tutorials; Marc McKenna: ETS, Inc.;

3:50 PM

Application of Nano-Silver/Chitosan Composite Sterilization Material for the Removal of Virus Bioaerosols by Using a Modified Virus Sampler

Paper # 601266

Ming-Hsuan Tsai, Kuo-Pin Yu, Yi-Jen Wang, Wan-Tien Shen, Chun-Hsuan Bai, Chien Sue: National Yang-Ming University, Taiwan

4:10 PM

PM Control Technologies: A Recommended Approach for the Best Results

Paper # 602625

Hugues Châteauneuf: BBA

4:30 PM

Multipollutant Air Pollution Control for Glass Manufacturing Facilities

Paper # 587250

Minh Pham, Monica Fernandez-Neild, Stephen Jiang: South Coast Air Quality Management District

4:50 PM

Removal of Cooking Fume Emission From Kitchens by Using the Combination of Negative Airionizer and Active Carbon Adsorbent Made of Recycle Rice Straw

Paper # 600303

Wei-Wen Huang, Kuo-Pin Yu, Xuan En Yang: National Yang-Ming University; Kun-Yi Lin: National Chung Hsing University; Chien Su: National Yang-Ming University

5:10 PM

Non-Thermal Plasma Inactivation of Porcine Reproductive and Respiratory Syndrome (PRRS) Virus in Hog Barn Ventilation Air

Paper # 634418

Herek Clack, Tian Xia: University of Michigan; Eric Lee: Illinois Institute of Technology; Zijie Lin: University of Michigan; Kevin Melotti, Mitchell Rohde: Quantum Signal; Dale Rozeboom: Michigan State University

Challenges in Emission Inventory Development

Track: AQES

Room: 303A

6/26/2019, 3:30 PM

Platform – TCC: AAE

Chair: Juan Carlos Ramirez-Dorransoro, Ball State University

Vice Chair: Shamia Hoque, South Carolina State University

3:30 PM

Tracking Canadian Mercury Emissions from Products Containing Mercury

Paper # 603371

Brittany Sullivan, Duane Smith: Environment and Climate Change Canada, Pollutant Inventories and Reporting Division, Waste, Mining, and Diffuse Sources, National Capital Region, Gatineau, QC, Canada

3:50 PM

Explaining the “Three Inch Rule”: Why Model Flares Don’t Match Full-Scale

Paper # 601518

Peter Gogolek: Canmetenergy/NRCAN

4:30 PM

Choosing Data Sources for Relevant, Complete, Consistent, Transparent, and Accurate Reporting

Paper # 600432

Kerry Weichsel: Civil & Environmental Consultants, Inc.

4:50 PM

Adding Particulate Matter to EPA's Egrid Database

Paper # 600932

David Cooley: ABT Associates; Travis Johnson: U.S. EPA; Marissa Hoer; Jonathan Dorn: ABT Associates

5:10 PM

Estimating Volatile Organic Compound Emissions at a Wastewater Treatment Plant Using EPA WATER9 Model

Paper # 601619

Disha Shah, Amit Sen: CDM Smith

Air Quality Measurements and Monitoring in China

Track: AQMM

Room: 303B

6/26/2019, 3:30 PM

Platform – TCC: AAM

Chair: Junji Cao, Institute of Earth Environment, CAS

3:30 PM

Status and Control of Particulate Air Pollution in Fenwei Basin, China

Paper # 590935

Junji Cao, Long Cui: Key Lab of Aerosol Chemistry and Physics, Institute of Earth Environment, Chinese Academy of Sciences, China; Shun-Cheng Lee: The Hong Kong Polytechnic University, Kowloon, Hong Kong

3:50 PM

Characterization of Chemical Composition and Source of Atmospheric Aerosol Particles in Fenwei Basin, China

Paper # 592210

Yuemei Han, Qiyuan Wang, Zhiyu Li: Institute of Earth Environment, Chinese Academy of Sciences, China; Zhiyu Li, S. X. Liu, Junji Cao: Key Laboratory of Aerosol Chemistry and Physics, SKLLQG, Institute of Earth Environment, Chinese Academy of Sciences, China

4:10 PM

Decreasing Trend of Carbonaceous Aerosols Over China from 2003 to 2013

Paper # 592267

Yan Cheng: Xi'an Jiaotong University, China; Junji Cao: Institute of Earth Environment, CAS, China

4:30 PM

Examining Efficacy of Mitigation Policies in Reduction of Source Emissions on Air Quality During Group of Twenty Summit in Hangzhou

Paper # 589849

Ke Chen, Honghui Xu: University of Nottingham Ningbo, China;; Sailesh Behera: Shiv Nadar University, India; Jun He, Sarah Metcalfe, Bencan Tang: University of Nottingham Ningbo, China

4:50 PM

Ambient Ammonia and Its Relation With Ammonium Aerosol Chemical Property In Winter of Beijing, China

Paper # 600930

Zhaoyang Meng: Chinese Academy of Meteorological Sciences, China; Renjian Zhang: Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China; Lingyan Wu, Xiaofang Jia; Hongbin Cheng: Chinese Academy of Meteorological Sciences, China

Smoke and Prescribed Burning Air Quality Issues

Track: AQMM

Room: 302A

6/26/2019, 3:30 PM

Platform – TCC: APV

Chair: Kip Carrico, New Mexico Institute of Mining and Technology

3:30 PM

Study of the Extent of Contribution of Regional Stubble Burning to the Air Pollution in Delhi-National Capital Region

Paper # 594032

Rasma K.: Indian Institute of Technology (IIT) Mumbai, India; Ratish Menon: SCMS Water Institute, Karukutty, India; Harish Gadhavi: Physical Research Laboratory, Ahmedabad, India; Virendra Sethi: IIT Mumbai, India; Rakesh Kumar:

3:50 PM

Emission Inventory of Biomass Burning from GFASV3 Using SMOKE, the Case of 2014

Paper # 600991

Ernesto Pino: Universidad De Santiago De Chile; Francisco Cereceda-Balic: Dept. of Chemistry and Centre For Environmental Technologies, Universidad Tecnica Federico Santa Maria, Chile; Luis A. Diaz-Robles, Francisco Cubillos: Universidad De Santiago De Chile; Samuel Carrasco: Pontificia Universidad Católica De Valparaíso, Chile

4:10 PM

Connections Between Prescribed Fire, Air Quality, and Communities in the Southeastern U.S.

Paper # 601332

Fernando Garcia-Menendez, Sadia Afrin: North Carolina State University

4:30 PM

Investigation of Multi-Wavelength Light Absorption of Black and Brown Carbon in Southeast Tibetan Plateau

Paper # 590355

Zhuzi Zhao: School of Chemical and Environmental Engineering, Jiangsu University of Technology; Junji Cao, Jamao Zhou: Key Laboratory for Aerosol Chemistry and Physics, Institute of Earth Environment, Chinese Academy of Sciences.

4:50 PM

Smoke Aerosol Optical Properties: Hygroscopic Response and Key Physicochemical Properties of Biomass Smoke from Southwestern U.S. Fuels

Paper # 601722

Christian Carrico, Jared Lam: New Mexico Institute of Mining and Technology; Tyler Capek, Claudio Mazzoleni: Michigan Technological University; Allison Aiken, Manvendra Dubey: Los Alamos National Laboratory; Timothy Onasch, Andrew Freedman: Aerodyne Research Inc.

Greenhouse Gas Modeling

Track: CLIM

Room: 205A

6/26/2019, 3:30 PM

Platform - TCC: CCI

Chair: Joshua Fu, University of Tennessee Knoxville & Oak Ridge National Laboratory

Vice Chair: Jason Krawczyk, ERM

3:30 PM

Time Series Concentration Profiles of Ambient Carbon Dioxide At Locations In Alberta and Relations To Anthropogenic Activities

Paper # 597710

Quamrul Huda: Alberta Environment and Parks; Arturo Sanchez-Azofeifa: University of Alberta

3:50 PM

Long-Time Atmospheric Monitoring Data, Snow Albedo and BC In Snow Measured In Portillo, Los Andes Mountains, Chile

Paper # 601770

Francisco Cereceda-Balic: Department of Chemistry and Centre for Environmental Technologies, Universidad Técnica Federico Santa María, Chile; Victor Vidal: Universidad Técnica Federico Santa María – Centre For Environmental Technologies (CETAM-UTFSM), Chile; Hans Moosmüller: Desert Research Institute; Magin Lapuerta: Universidad de Castilla-La Mancha, Spain

4:10 PM

Strategies For Improving Air Quality and Reducing Short-Lived Climate Forcers In Cairo, Egypt

Paper # 594009

Mounir Wahba Labib: National Academy of Science, Egypt; Alan Gertler, Desert Research Institute

4:30 PM

Costal Wind Evolution Related to Climate Variability and Climate Change in Peru

Paper # 612474

Julio Quijano Vargas, SNC-Lavalin, Peru

4:50 PM

Status of Renewable Energy Projects in Egypt

Paper # 591325

Mounir Wahba Labib: National Academy of Science, Egypt; Yasser Saad Mohamed: Climate and Environment Protection Foundation, Egypt; Alan Gertler: Desert Research Institute

5:10 PM

Assessment of the Social and Economic Impacts Due to Climate Change In Egypt

Paper # 591361

Mounir Wahba Labib: National Academy of Science, Egypt; Yasser Saad Mohamed: Climate and Environment Protection Foundation, Egypt; Alan Gertler, Desert Research Institute

Risk Assessment/Management: Recent Experience

Track: H&EE

Room: 205C

6/26/2019, 3:30 PM

Platform – TCC: CCI

Chair: Scott Weaver, Ramboll

3:30 PM

E.A.M.A.S. - Emergency Management with a Powerful Web-Based Weather, Hazard and Dispersion Modelling System

Paper # 601987

Francoise Robe, Ron Chapman: RWDI; Martin Bundred: Alberta Environment; Darren Cherneski: RWDI

3:50 PM

Overview of the 2014 National Air Toxics Assessment (NATA)

Paper # 599086

Darcie Smith, Ted Palma, Madeleine Strum, Mark Morris, Alison Eyth, James Thurman, Sharon Philips, Matthew Woody, Ruth Cook, Alice Chow: U.S. EPA; Jeff Myers: Wisconsin Department of Natural Resources

4:50 PM

Analyzing the Lack of Awareness of the Risks Related to Air Pollution by Public Authorities: Case Studies of Paris, London and New York City

Paper # 602214

Tony Renucci: National School of Administration, France

Methane Emission Management in the Oil and Gas Industry

Track: O&GS

Room: 301B

6/26/2019, 3:30 PM

Platform - TCC: PIM

Chair: Randall Rudolph, Millennium EMS Solutions Ltd.

Vice Chair: Soheil Asgarpour, Petroleum Technology Alliance Canada (PTAC)

It's no surprise that various issues within the oil and gas sector have kept stakeholders at relative odds. But for Canada to position itself as a global powerhouse, provinces must work together to achieve the same goals of an economic and holistic energy industry. People prefer oil from locally-sourced and trusted sites. They also want to respect the land this oil originates from and not sacrifice sustainability for convenience.

Good news! There are already innovative and thoughtful initiatives already happening in Western Canada. We've proven that together we can combat climate change and lessen liabilities while controlling costs and growing the economy.

This session focuses on current issues impacting methane emission management in oil and gas and implementing projects that contribute to achieving Canadian – and global – goals in reducing methane emissions.

Panelists:

- *Randall Rudolph: Millennium EMS Solutions Ltd.*
- *Soheil Asgarpour: President, PTAC*
- *Wayne Hillier: Canadian Association of Petroleum Producers*
- *Gerald Palanca: Alberta Energy Regulator*
- *Cooper Robinson: Cap-op Energy -*

- *Marc Godin: PTAC*

Regulatory Developments

Track: REGU

Room: 202

6/26/2019, 3:30 PM

Platform - TCC: REG

Chair: John Metzger, 3M Company

3:30 PM

Recent EPA Air Memoranda

Paper # 599396

John King: Breazeale, Sachse & Wilson, LLP

3:50 PM

Developments in United States Clean Air Act Regulatory Policies

Paper # 601745

Todd Palmer: Michael Best & Friedrich LLP

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4:10 PM

Opportunities and Risks of Recent Changes to EPA Permitting Rules and Policy

Paper # 598060

Clara Poffenberger: CPELP LLC

4:30 PM

A Perspective on The Development of Programs to Control Stationary Source Nitrogen Oxide Emissions in The Eastern Us

Paper # 592932

Susan Wierman: Johns Hopkins University; William O'Sullivan: New Jersey Department of Environmental Protection

4:50 PM

Wildfire Smoke Impacts--Treatment of Exceptional Events

Paper # 602046

Don Caniparoli, Monica Wright: Jacobs

Marine and Aviation Emissions

Track: TRAN/AQES

Room: 205B

6/26/2019, 3:30 PM

Platform - TCC: OMS

Chair: Georges Bou-Saab, HMMH, Inc.

Vice Chair: Robert Mentzer, HMMH, Inc.

3:30 PM

Climate Change Effects on the Suez Canal Area After Completion of the New Development Project

Paper # 590833

Mounir Wahba Labib: National Academy of Science, Egypt; Alan Gertler: Desert Research Institute

3:50 PM

Assessing the Impact of Shipping Emissions on Air Pollution in the Canadian Arctic and Northern Regions: Current and Future Modelled Scenarios

Paper # 587535

Wanmin Gong, Stephen Beagley, Sophie Cousineau, Mourad Sassi, Rodrigo Munoz-Alpizar, Sylvain Menard, Jacinthe Racine, Junhua Zhang, Jack Chen, Heather Morrison, Sangeeta Sharma, Lin Huang, Pascal Bellavance, Jim Ly, Paul Izdebski, Lynn Lyons: Environment and Climate Change Canada

4:10 PM

Current and Future CAC and GHG Emission Rates for Offroad Sources: Ships, Locomotives, Cargo Equipment. Existing Data Sources and Challenges for Emissions Inventory Development

Paper # 595361

Bryan McEwen: SNC Lavalin Inc

4:30 PM

Air Quality on The High Seas – Who Rules?

Paper # 595336

Michael Murphy, Gillian Hatcher: Stantec Consulting Ltd.

4:50 PM

Beyond Safety: Utilizing SHRP2 NDS Data to Model Vehicular Emissions From Passenger Cars at Work Zones Using Vehicle Specific Power and Operating Mode Distribution Approach

Paper # 602096

Georges Bou-Saab: HMMH, Inc.; Shauna Hallmark, Omar Smadi: Institute for Transportation at Iowa State University

Waste Management, Beneficial Use, and Energy Recovery

Track: WAST/SUST

Room: 302B

6/26/2019, 3:30 PM

Platform - TCC: WAST/SUST

Chair: David Greene, SCS Engineers

Vice Chair: Lee Lundberg, Bedrock Enterprises, Inc.

3:30 PM

Disposal and Reuse of Nonwoven Fabric Material

Paper # 591189

Jane Gilbert, Lynn Muzzey: Maine Department of Environmental Protection

3:50 PM

Treatment of landfill biogas purification plants' emissions by Regenerative Thermal Oxidation (RTO)

Paper # 601510

Kay Dominique: Biothermica Technologies Inc.

4:10 PM

The Enerkem Story: A State-of-the-Art Clean Technology Developed in Québec

Paper # 578030

Denis Arguin, David McConnell: Enerkem

4:30 PM

A Solution for Multi-Component, Laminated and Dirty Mixed Waste Plastics (Surface-Flash-Cracking)

Paper # 595618

Louis Bertrand: Sweet Gazoil Inc.

and-

How Does It Work - Industries

Track: YPRO/INDU

Room: 204B

6/26/2019, 3:30 PM

Panel - TCC: PIM

Chair: Jen Moore, 3M Company

Vice Chair: Paul Algu, RTP Environmental Associates, Inc.

This panel will provide both a general overview of emission control technologies currently available as well as a more in-depth review of several specific pollutant control strategies for particulate matter, volatile organic compounds, and other pollutants. This session will discuss thermal oxidizers, biofilters, carbon adsorbers, and baghouses. The presenters will discuss emission control equipment design and operation requirements and will give an overview of the industry or processes where it is commonly used. Panelist will also review of the regulatory drivers requiring the control or proposed regulations in the pipeline. This is a great introductory panel presentation for all attendees but is focused on reaching the student/young professional attendee. The attendee should walk away with a general understanding of emission control options available today for use in various applications with a focus on the criteria pollutants.

Panelists:

- *Jen Moore: 3M Company*
- *Paul Algu: RTP Environmental Associates, Inc.*
- *Najat Kamal: PolyOne*
- *Alexandre Dubreuil: Alcoa - Deschambault Aluminum Smelter*

Thursday, June 27

Bioaerosols and Transmission of Human and Animal Pathogens

Track: H&EE

Room: 301A

6/27/2019, 9:40 AM

Panel – TCC: HEE

Chair: Matthieu Girard, Research and Development Institute for the Agri-Environment (IRDA)

Vice Chair: Caroline Duchaine, Université Laval

The transmission of infectious microbes via bioaerosols is of great concern to both human and animal health. Gaps in data and methodological heterogeneity also plague many related studies which hinder our understanding of respiratory pathogen transmission as well as the application of mitigation techniques. In recent years, new developments have enabled progress in this domain, and one of the major turning points has been the recognition that cross-disciplinary collaborations across spheres of human and animal health, microbiology, biophysics, engineering, aerobiology, infection control, public health, occupational health and industrial hygiene are essential. The Canadian Infectious Bioaerosol Network (CANIBAN) initiative was launched to focus on critical questions about infectious diseases dispersed by bioaerosolization of microorganisms. This collaborative initiative allows for significant advances in topics such as bioaerosol behavior, dispersion models, risk assessment, risk/exposure effects and mitigation strategies. The purpose of this panel session is two-fold:

1. Introduce CANIBAN to the broader air quality community in North America and to catalyze further collaborations;
2. Exchange technical and scientific knowledge in respective areas of expertise regarding bioaerosols, disease transmission and mitigation.

Panelists:

- *Matthieu Girard: Research and Development Institute for the Agri-Environment (IRDA)*
- *Caroline Duchaine: Université Laval*
- *Samira Mubareka: Sunnybrook Health Sciences Centre*
- *Manuela Villion: Québec Ministère de L'Environnement et de la Lutte Contre les Changements Climatiques*
- *Christian Klopfenstein: Centre de Développement du Porc du Québec (CDPQ)*

How to Select the Best VOC Emission Control Device Option

Track: AQCT

Room: 302B

6/27/2019, 9:40 AM

Panel – TCC: AAC

Chair: Jennifer Moore, 3M Company

While equipment vendors and consultants are knowledgeable about the design and performance capabilities of VOC emission control technology, the industries that use them are responsible for their ongoing maintenance, and operating challenges and costs. This panel will review the basic differences between thermal oxidizers, carbon adsorbers, solvent recovery units, and biofilters. Panelists will follow the same outline for each control technology and will discuss how each control technology works, the capabilities and limitations of each type, the circumstances or conditions when one would use them, and the operation and maintenance requirements for each control technology. Several case studies will also be discussed to illustrate the benefits and challenges associated with each type of VOC control technology. Audience members will leave the presentation having a better understanding of how VOC emission control technologies work, their operational capabilities, operational limitations, and under what circumstances they should be selected.

Panelists:

Jen Moore: 3M Company

Bill Norge: 3M Company

Elemental, Ionic, and Organic Analysis for Air Measurement Applications

Track: AQMM

Room: 303A

6/27/2019, 9:40 AM

Platform - TCC: AAM

Chair: Praveen Srirama, CEMRC

Vice Chair: Rodolfo Sosa Echeverria

9:40 AM

Source Apportionment Related to Trace Elements In PM_{2.5} In Concón, Chile, City Placed Near to an Oil Refinery Plant.

Paper # 592338

Victor Vidal, Katalina Gonzalez, Selma Cea: Universidad Técnica Federico Santa María - Centre for Environmental Technologies (CETAM-UTFSM), Chile; ;Luis A. Diaz-Robles: Universidad de Santiago de Chile; Eduardo Pinilla: University of Extremadura (UNEX), Spain; Francisco Cereceda-Balic: Dept. of Chemistry and Centre for Environmental Technologies, CETAM-UTFSM, Chile

10:00 AM

Study of Atmospheric Particulate Material By ⁵⁷Fe Mössbauer and Chemical Mass Balance Measurements

Paper # 601022

José Ardisson, Adriana Albuquerque: Centro De Desenvolvimento Da Tecnologia Nuclear, Brazil;; José Gustavo Costa, Jennifer Coronel: ArcelorMittal;; Rogerio Queiroz; Tsutomu Morimoto; Luis Eugenio Outon: Federal University of Minas Gerais (UFMG), Brazil

10:20 AM

Development of an Inexpensive and Sustainable Trap Method for the Measurement of Atmospheric Halogens

Paper # 601555

Ryan Hall: McGill University; Oleg Nepotchatykh: PO-Laboratories Inc.; Jill Bachelder, Hannah Szeptycki, Parisa Ariya: McGill University

10:40 AM

Chemical composition of wet atmospheric deposition at the main Mexican Port located in the Gulf of Mexico.

Paper # 600865

Rodolfo Sosa Echeverría, Ana Luisa Alarcón Jimenez, Maria del Carmen Torres Barrera, Pablo Sanchez Alvarez: Centro de Ciencias de la Atmosfera (UNAM), Mexico; Roberto Morales Yañez, Jose Hernandez Tellez, Humberto Bravo Witt; David Gay: University of Wisconsin at Madison;

11:00 AM

Seasonal variation of endotoxin in the ambient air of a Sewage Treatment Plant (STP) in Delhi, India

Paper # 589328

Sunita Maharia, Arun Srivastava: Jawaharlal Nehru University, New Delhi, India

Atmospheric Chemistry Measurements

Track: AQMM

Room: 205C

6/27/2019, 9:40 AM

Platform – TCC: APC

Chair: Philip Silva, USDA-ARS

Vice Chair: Casey Bray, 3M Company

9:40 AM

An Assessment of Important SPECIATE Profiles in the EPA Emissions Modeling Platform and Current Data Gaps

Paper # 599016

Casey Bray, Madeleine Strum, Heather Simon, Riddick Lee, Marc Menetrez, Michael Hays, Venkatesh Rao: U.S. EPA

10:00 AM

Black and Organic Carbon Ratio in PM_{2.5} Using EDGAR Emission Project

Paper # 601489

Ernesto Pino, Luis A. Diaz-Robles, Francisco Cubillos: Universidad de Santiago, Chile; Francisco Cereceda-Balic: Dept. of Chemistry and Centre for Environmental Technologies, Universidad Tecnica Federico Santa Maria, Chile; Samuel Carrasco: Pontificia Universidad Católica de Valparaíso, Chile

10:40 AM

Ammonia, Amine, and Reduced Sulfur Concentrations in and Around Confined Animal Feeding Operations

Paper # 576300

Philip Silva: USDA-ARS

11:00 AM

Sensibility of Modeled Secondary Particulate Formation to Ammonia Background Concentrations

Paper # 602560

Martin Gauthier: RWDI

11:20 AM

MICROECOSYSTEM of Arctic Snow and Frost Flower: The Impact of Pollutants and Bacterial Populations

Paper # 601810

Roya Mortazavi, Said Attiya, Parisa Ariya: McGill University

Air Dispersion Modeling for Regulatory Requirements

Track: AQMO

Room: 204B

6/27/2019, 9:40 AM

Platform –TCC: APM

Chair: Gale Hoffnagle, TRC Environmental Corporation

Vice Chair: Dan Dix, All4 Inc.

9:40 AM

Modeling Challenges for a Proposed Agricultural Processing Plant: A Case Study

Paper # 601169

Scott Miller: Cornerstone Environmental Group, LLC

10:00 AM

Nitrogen Dioxide Modeling Challenges and Solutions

Paper # 610710

Anna Henolson: Trinity Consultants

10:20 AM

Screening Air Dispersion Modeling Approach: Prop 65 Community Exposure Assessment For Industrial Emitters

Paper # 595253

Jennifer Bare, Rachel Novick, Joshua Maskrey, Ken Unice: Cardno Chemrisk

Health Effects & Exposure - Part 1

Track: H&EE

Room: 301B

6/27/2019, 9:40 AM

Platform –TCC: HEE

Chair: Jim Morrow, J.W. Morrow

Chair: Suresh Santanam, Syracuse University

9:40 AM

Will California's Community Air Protection Program (AB 617) Achieve Environmental Justice?: A Predictive Analysis

Paper # 601955

Sarah Patterson, Chris Easter: ESA

10:00 AM

Strengthening "One Health" Collaborations In Air Quality Management

Paper # 600572

Helena Chapman: NASA Applied Sciences Program; Sue Estes: NASA/USRA; John Haynes: NASA

10:20 AM

Communities at Risk from Air Toxics - Deeper Analysis of NATA Results and Tool for a Path Forward

Paper # 600376

Phil Norwood, Jill Mozier, Steve Fudge: SC&A Inc.

10:40 AM

Validation Assessment of a Spatiotemporal Exposure Metric Developed for Use in Epidemiological Studies of Populations Living Near Unconventional Oil & Gas Well Pads

Paper # 600841

Christopher Long, Shuo Zhao, Nicole Briggs: Gradient Corporation

11:00 AM

Using Climate Zones, Architectural Knowledge and Low-Cost Indicators to Build Efficient Vapor Intrusion (VI) Sampling Strategies

Paper # 590659

Christopher Lutes, Chase Holton, Elsy Escobar, Shirley Steinmacher, Loren Lund: Jacobs

11:20 AM

Measuring Physical Activity Induced by Transit

Paper # 602110

Judith Mageau-Béland, Catherine Morency: Polytechnique Montréal

Odor Detection, Control and Management - Part 1

Track: H&EE

Room: 302A

6/27/2019, 9:40 AM

Platform –TCC: ODR

Chair: Denis Choiniere, Consumaj Inc.

Vice Chair: Ray Porter, ODOTTECH, Inc.

9:40 AM

Cannabis Production Air Quality Issues

Paper # 590065

Robert Kemp: Metro Vancouver

10:00 AM

Cannabis Cultivation as Good Neighbors. A Comprehensive Approach to Odor Management in The Nascent Industry

Paper # 592362

Derek Webb, William Mullin: Biorem Technologies Inc.

10:20 AM

Identification of Malodorous Compounds in the Automotive Interior Material

Paper # 601309

Rui Zeng, Arthu Chan: University of Toronto

10:40 AM

Chemical and Odorous Atmospheric Emissions from the Methanisation Process: Impact of Raw Materials and Operating Conditions

Paper # 597180

Stéphane Cariou: IMT Mines Ales, France; Jean-François Desprès: Olentica, France; Sandrine Bayle, Marion Fages: IMT Mines Ales, France; Mathilde Chaignaud: Olentica, France; Axelle Cadere: Université de Nîmes, France; Jean-Louis Fanlo: IMT Mines Ales, France

Nanomaterials and Nanotechnology-based Products: Occupational and Consumer Safety, Management and Regulation

Track: NANO

Room: 205B

6/27/2019, 9:40 AM

Platform – TCC: NAN

Chair: Yevgen Nazarenko, McGill University

The panelists will make presentations based on their areas of expertise in nanomaterial application, nanosafety, occupational exposure, and regulation. The panel will present and discuss the uses of nanotechnologies and corresponding safety considerations, the latest research in the field of nano exposure science, engineering controls for prevention of exposure to nanomaterials, needs and objectives stemming from the increasing implementation of nanotechnology in research and industrial processes as well as from introduction of nanotechnology-based materials into consumer products. The panelists will discuss currently available sampling, measurement and analytical techniques and risk assessment strategies, and the use of personal protective equipment. We will talk about the current state of the art and prospects of nanoaerosol analysis and measurement as well as instrumental approaches for assessment of inhalation exposure to airborne nanomaterials from nanotech consumer products. Additional discussion will touch upon measurement and experimental approaches to assessment of inhalation exposure to incidental nanoparticles, which may be released from industrial and other processes. The recent nanotechnology regulatory developments will be summarized, including in the U.S. and Canada, the E.U. and other OECD countries.

Panelists:

- *Yevgen Nazarenko: McGill University*
- *Gediminas Mainelis: Rutgers University*
- *William C. Looney: AECOM*
- *Candace S-J Tsai: Colorado State University*

New Source Review (NSR): Issues and Recent Developments

Track: REGU

Room: 303B

6/27/2019, 9:40 AM

Panel – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc.

Vice Chair: Ken Weiss, ERM

Ambient air quality dispersion modeling is used for issuance of prevention of significant deterioration (PSD) permits. However, modeling is also sometimes used in issuance of minor NSR permits as well as, in some situations, nonattainment

major NSR permits. U.S. EPA has been working on addressing concerns raised by the regulated community regarding dispersion modeling through additional guidance and rulemaking.

The experts on this panel will discuss the permitting implications of ozone and PM2.5 precursors and other modeling issues. The panel will also outline recent developments in the air dispersion modeling universe, including, what is considered ambient air, latest model developments, etc.

The panelist will outline the difficulties involved in assessing the impacts of precursor emission changes on attainment strategies. This will be discussed from both a national and state level and both technical and legal issues will be identified.

Panelists:

- *Raj Rao: U.S. EPA*
- *Eric Hiser: JHL Lawyers*
- *David Jordan: ERM*
- *Colin Campbell: RTP Environmental Associates, Inc.*

Industrial Air Quality Compliance

Track: REGU/INDU

Room: 202

6/27/2019, 9:40 AM

Platform – TCC: REG

Chair: John Metzger, 3M

9:40 AM

Artificial Intelligence: A Crystal Ball Look at Implications for Clean Air Act Compliance

Paper # 600682

David Rockman: Eckert Seamans Cherin & Mellott

10:00 AM

CAMMS - 3M's Tool For Managing Environmental Compliance

Paper # 602106

Kelsey Klucas: 3M Company

10:20 AM

Reduced Compliance Burden: Croda Inc. Mill Hall, PA “Once In, Always In” (Oiai) Policy Reversal

Paper # 595217

Cara Fox: All4 LLC; Brady Wassom: Croda Inc

10:40 AM

The Power of Citizen Suits Under the Clean Air Act: An Industry Perspective

Paper # 598054

Clara Poffenberger: CPELP LLC

11:00 AM

Government Advocacy, First Amendment Rights and Climate Change Activism: A Look at the Issues In Exxonmobil v Healy (Massachusetts Attorney General)

Paper # 598836

Clara Poffenberger: CPELP LLC

11:20 AM

What's Really Changed? EPA and NGO Approaches to Title V in The Trump Era

Paper # 594951

Alexandra Bromer: Perkins Cole

Waste to Energy and International Perspectives

Track: WAST

Room: 205A

6/27/2019, 9:40 AM

Platform – TCC: 204A

Chair: Melanie Sattler, University of Texas at Arlington

Vice Chair: David Minott, Arc5 Environmental Consulting, LLC

9:40 AM

Comparison of Greenhouse Gas Emissions: Waste-To-Energy vs. Landfilling

Paper # 602309

Lisa Damiano, Stephen Zemba: Sanborn, Head & Associates, Inc.

10:00 AM

Waste-To-Energy Conversion from Various Agricultural Wastes for Supercapacitor Application

Paper # 602266

Ruey-an Doong: National Tsing Hua University; Thuy Giang Nguyee; Pei-Yi Chang

10:20 AM

Green Plasma technology for Siloxane removal and Landfill Gas Upgrade

Paper # 602098

Shamia Hoque, Tahiyat Malik, Tanvir Farouk: University of South Carolina

10:40 AM

Methanis Biogas Upgrading System - Evaluating the use of membrane technology for Biogas Upgrade Treatment

Paper # 599860

Michael Theodoulou, Kristina Gerber, Nicholas Bonkoski: Suez

11:00 AM

Greenhouse Gas Emissions Savings Associated with the Use of Waste-to-Energy Facilities, Compared to Landfilling

Paper # 601533

John Atkinson, Mohsen Ghafari, Michael Shelly: State University of New York at Buffalo

11:20 AM

Sustainable Energy and Health: Concerns and Solutions for Rural Bangladesh

Paper # 582584

Shahana Chowdhury: Kazi Shahid Foundation

Perspectives on EPA Priorities for 2019-2020

Track: MINI/REGU

Room: 206B

6/27/2019, 1:30 PM

Panel – TCC: REG

Chair: Dave Jordan, ERM

As U.S. EPA works through the third year of the Trump administration, questions persist over the priorities of U.S. EPA and the path it will pursue over the next two years. The Clean Air Act sets forth specific mandates that the agency must continue to address while it evaluates whether to reverse or revise certain actions from the previous administration. Bill Wehrum, Assistant Administrator for Air and Radiation for U.S. EPA will provide comments on U.S. EPA's priorities as a part of the keynote address for the conference. This panel will provide an opportunity for key interest groups to discuss pending U.S. EPA rulemaking actions and to discuss U.S. EPA's stated objectives over the coming months. A representative of state/local air agencies, a representative of electric utilities, an industry representative, and a representative of a public interest group will be provided an opportunity to comment on U.S. EPA's priorities as a part of this panel.

Panelists:

- *David Jordan: ERM*
- *Jack Broadbent: Bay Area Air Quality Management District*
- *John Kinsman: Edison Electric Institute*

- *Martha Roberts: Environmental Defense Fund*
- *Howard Feldman: American Petroleum Institute*

Quantifying VOC Emissions from the Marijuana Industry and Modeling Regional Ozone Impacts

Track: AQES

Room: 301A

6/27/2019, 1:30 PM

Panel – TCC: AAE

Chair: Kaitlin Urso, Colorado Department of Public Health and Environment

Vice Chair: William Vizuete, University of North Carolina

The marijuana industry has air quality impacts beyond just nuisance odors. Studies have found that cannabis plants emit gas phase terpenes that are a type of Volatile Organic Compound (VOC). The industry also uses solvents for extracting concentrates that result in VOC emissions. These VOCs chemically react with nitrogen oxides emissions in the presence of sunlight to form ground level ozone. Ozone is an air pollutant that is harmful to human health and negatively impacts the environment. With the rapid continued growth of the marijuana industry, there is now an unknown industrial-scale area-source of VOCs that can impact ozone formation. In this session, you will learn about this new cutting-edge air quality research, sampling and laboratory analytical methods, ozone modeling, and industry best management practices that can reduce air quality impacts from the marijuana industry.

- CDPHE will talk about the air quality impacts of the marijuana industry from both cultivation and extraction along with industry best management practices that can reduce air emissions. CDPHE will discuss the air quality research study they are currently conducting through the Fall of 2019.
- Desert Research Institute will discuss the laboratory methods used to analyze the air quality samples from the CDPHE study and will also discuss previous research that they have done.
- University of North Carolina will discuss their independent air quality study on marijuana cultivation and the use of a regulatory model to predict the regional impacts on ozone in Denver.

Panelists:

- *Kaitlin Urso: Colorado Dept of Public Health and Environment*
- *Andrey Khlystov: Desert Research Institute*
- *William Vizuete: University of North Carolina*
- *Chi-tsan Wang: University of North Carolina at Chapel Hill*

Personal and Indoor AQ Monitoring

Track: AQMM

Room: 303A

6/27/2019, 1:30 PM

Platform – TCC: AAM

Chair: Antony Chen, UNLV

Vice Chair: Andre Butler, Mercer University

1:30 PM

Mold Inspections Made Thorough With The Assistance of Highly Trained Dogs

Paper # 589399

Anne O'Donnell: HSST Conseils Inc.

1:50 PM

Household Surveys and Low-Cost Measurement of Indoor Air Pollution in the Dominican Republic

Paper # 577504

Andre Butler Ariel Dornisch, Charlotte Dungan, Pace Dillon, Griffin Murphy: Mercer University

2:10 PM

Personal Exposure Monitoring of Airborne Particulate Using a Low-Cost Sensor

Paper # 577487

Andrew Kelley, Andre Butler: Mercer University

2:30 PM

Evaluating the Indoor Air Quality in High-Rise Residential Buildings in Kuala Lumpur

Paper # 597268

Mohd Firrdhaus Sahabuddin, Cristina Gonzalez-Longo: University of Strathclyde, United Kingdom

Photochemistry

Track: AQMM

Room: 205C

6/27/2019, 1:30 PM

Platform - TCC: APC

Chair: Martin Gauthier, RWDI

Vice Chair: Yevgen Nazarenko, McGill University

1:30 PM

Photochemical Transformations of Vehicle Exhaust Pollutants In Snow

Paper # 602086

Yevgen Nazarenko: McGill University; Pascal Tetrault; Patrice Seers: ETS; Parisa Ariya: McGill University

1:50 PM

Photochemical Modelling and Public Health in Peel Region

Paper # 602451

Martin Gauthier: RWDI

2:10 PM

Ambient Volatile Organic Compounds (VOCs) in Two Coastal Cities in Western Canada: Spatiotemporal Variation, Source Apportionment and Health Risk Assessment.

Paper # 601298

Ying Xiong, Ke Du, Zhenyu Xing: University of Calgary

2:30 PM

Meteorological Detrending of Ozone at Three Sites in The Dallas-Fort Worth Area: Application of KZ Filter and Multiple Linear Regression Analysis

Paper # 601995

Poojan Upadhaya: City of Houston; Venkata Botlaguduru, Raghava Kommalapati, Hongbo Du: Prairie View A&M University

2:50 PM

Characterization of VOC Composition, Sources, and Air Quality Impacts in Protected Areas of the Southwestern United States

Paper # 633981

Marwa El-Sayed, Katherine Benedict, Arsineh Hecobian, Yong Zhou: Colorado State University; Anthony Prenni; Kristie Gebhart, Barkley Sive, Bret Schichtel: National Park Service; Jeffrey Collett, Jr.: Colorado State University

Innovative Modeling Techniques: Regulatory Applications & Meteorology

Track: AQMO

Room: 204B

6/27/2019, 1:30 PM

Platform – TCC: APM

Chair: David Long, American Electric Power

Vice Chair: Travis Hicks: Southern Company

1:30 PM

A Case Study Analyzing Updates to the AERSURFACE Tool

Paper # 600798

Michael Hammer, Cristiane Thé, Jesse Thé: Lakes Environmental Software

1:50 PM

Assessing MIFF Meteorological Data Used for AERMOD Modeling in Central Canada.

Paper # 601136
Dennis Fudge: Saskatchewan Ministry of Environment

2:10 PM

The Science Behind the Art of Forecasting Morning Temperature Inversions

Paper # 571601
Anthony Sadar: Allegheny County Health Department

2:30 PM

AERMOD Modeling Using the Interactive Modeling Approach

Paper # 597881
Boris Weisman: Corporate EMC Limited

2:50 PM

Use of Thermal Satellite Imagery to Determine Urban Characteristics of Highly Industrial Areas

Paper # 599865
Laura Warren, Robert Paine: AECOM

3:10 PM

Hybrid Modeling Approaches Applied to AERMOD Modeling Analyses

Paper # 601883
Jeffrey Harrington, Elizabeth Hendrick, Sara Woolsey, Daryl Longwel: Tetra Tech Inc.

3:20 PM

Prime2 Building Downwash Enhancements

Paper # 616634
Sergio Guerra: GHD; Ron Petersen: Petersen Research and Consulting, LLC

Carbon Offsets, Prices and Trading

Track: CLIM
Room: 205 A
6/27/2019, 1:30 PM
Platform – TCC:
Chair: Christina Akly, NextEra Energy Resources, LLC
Vice Chair: Cassandra Drotman, SCS Engineers

1:30 PM

Additionality in Large-Scale U.S. Based Projects – A Success Story

Paper # 607241
Jack Wallace, Brent Boss: Dillon Consulting Limited

1:50 PM

Approaches for Setting Up a Carbon Trading Scheme in Egypt

Paper # 591303
Mounir Wahba Labib: National Academy of Science, Egypt; Yasser Saad Mohamed: Climate and Environment Protection Foundation, Egypt; Alan Gertler: Desert Research Institute

2:10 PM

An Overview of The CARB Offset Program and Offset Protocols

Paper # 590018
Cassandra Drotman, Raymond Huff, Patrick Sullivan: SCS Engineers

2:30 PM

Comparison of Canadian Carbon Pricing Programs and the Impacts on Commuter Costs

Paper # 595392
Deanne Durward, Rakesh Singh: Ramboll

2:50 PM

Québec's Cap-and-Trade System

Paper # 627600

Onil Bergeron: Québec Ministère de L'Environnement et de la Lutte Contre les Changements Climatiques

Health Effects & Exposure - Part 2

Track: H&EE

Room: 301B

6/27/2019, 1:30 PM

Platform - TCC: HEE

Chair: Jim Morrow, J.W. Morrow

Vice Chair: Matthieu Girard, Research and Development Institute for the Agri-Environment

1:30 PM

Efficiency of a Percolating Biofilter to Reduce Swine Building Bioaerosol Emissions

Paper # 595268

Jonathan Vyskocil: Université Laval; Valérie Létoirneau: Centre de Recherche de l'Institut Universitaire de Cardiologie et de Pneumologie de Québec - Université Laval; Matthieu Girard, Ariane Lévesque: Research and Development Institute for the Agri-Environment; Caroline Duchaine: Université Laval

1:50 PM

Composting Recycled Manure Solid: Impact on Bioaerosols In Dairy Farms

Paper # 592556

Karine Duquette-Lozeau: CRIUCPQ-UI; Joanie Lemieux: Université Laval; Valérie Létoirneau: Centre De Recherche de l'Institut Universitaire de Cardiologie et de Pneumologie de Québec - Université Laval; Sébastien Fournel: Université Laval; Caroline Côté, Stéphane Godbout: Research and Development Institute for the Agri-Environment; Caroline Duchaine: Université Laval

2:10 PM

Genotoxicity Evaluation of Vehicular Emissions from Diesel and Biodiesel of Different Feedstocks Using Tradescantia as a Biomonitor, HAPs and Carbonyls Characterization

Paper # 600389

Ximena Fadic-Ruiz, Fabian Placencia; Karen Yanez: Universidad Técnica Federico Santa María, Chile; Francisco Cereceda-Balic: Dept. of Chemistry and Centre for Environmental Technologies, Universidad Técnica Federico Santa María, Chile; Magin Lapuerta: Universidad de Castilla-La Mancha, Spain

2:30 PM

Do Indoor Bacteria Represent the Indoor Microbial Characteristic as a 'Biofingerprint'?

Paper # 601547

Dahae Seong, Shamia Hoque: University of South Carolina

Odor Detection, Control and Management - Part 2

Track: H&EE

Room: 302A

6/27/2019, 1:30 PM

Platform – TCC: ODR

Chair: Ray Porter, ODOTTECH, Inc.

Vice Chair: Denis Choiniere, Consumaj Inc.

1:30 PM

The Frailty of Odour Units as a Compliance Measure

Paper # 615858

Angela Wanger, Christopher Scullion: Trinity Consultants

1:50 PM

Odor Nuisance Evaluation in Ambient Air, a New Approach More and More Adopted

Paper # 595359
Elisabeth Lord: Biothermica Technologies Inc.

2:10 PM

FIDOR as a Tool to Assess Odour Impact from Industrial Sources

Paper # 602623
David Giard, Marilou Filliol: BBA Inc.

2:30 PM

Better Identify the Molecules Responsible for the Odour in Order to Better Control it – Methodological Aspects

Paper # 598835
Jean-Louis Fanlo, Mathilde Chaignaud, Jean-François Desprès: Olentica; Christophe Renner: Veolia

Hot Topics in the Chemicals and Refining Industries

Track: INDU
Room: 202
6/27/2019, 1:30 PM
Platform - TCC: PIM
Chair: Karen Brignac, PPM Consultants, Inc.
Vice Chair: Jordan Haywood, Siemens Energy, Inc.

1:30 PM

Fired Heater Control to Reduce NOx

Paper # 605728
Charles Baukal, Wes Bussman: John Zink Hamworthy Combustion

1:50 PM

Light Non-Aqueous Phase Liquid (LNAPL) Site Closure Using Non-Traditional Field Data and Analysis

Paper # 601837
Harrison Roakes Lilly Corenthal, Anne Sheehan, Stephen Zemba: Sanborn, Head & Associates, LLC

2:10 PM

Protecting Confidential Information in The Americas: Differences In Government Collection Authority, Public Access to Information, and Available Privileges

Paper # 598863
Clara Poffenberger: CPELP LLC

2:30 PM

Long-Term Gaseous Air Toxics Measurements at a Petroleum Refinery Fenceline

Paper # 633129
Li Du, Jay Turner: Washington University in St. Louis

2:50 PM

Emissions and Near-Field Dispersion of Air Toxics from Oil and Gas Drilling, Completions, and Production in Colorado: Acute vs. Chronic Exposure Potential

Paper # 633968
Jeffrey Collett, Arsineh Hecobian: Colorado State University; Andrea Clements: U.S. EPA; Kira Shonkwiler: Colorado Department of Public Health and the Environment; Yong Zhou, Landan MacDonald, Brad Wells, Jay Ham, Jeffrey Pierce: Colorado State University; Noel Hilliard; Yury Desyaterik: University of North Carolina; Derek Weber: Lovelace Biomedical

Nanotechnology Research Advances

Track: NANO
Room: 205B
6/27/2019, 1:30 PM
TCC: NAN
Chair: Yevgen Nazarenko, McGill University

Vice Chair: Tom Morahan, mgroup

1:30 PM

Effects of Carbonization Temperatures of Activated Electrospun Carbon Nanofibers for Carbon Dioxide Adsorption

Paper # 590620

Yu-Chun Chiang, Cheng-Yu Yeh, Chih-Hsien Weng: Department of Mechanical Engineering, Yuan Ze University

1:50 PM

Kaolin-Ironoxide-Hg₂Cl₂ Nanocomposites for Ice Nucleation and Environmental Remediation

Paper # 598058

Mainak Ganguly, Parisa Ariya: McGill University

2:10 PM

Using Chitosan-TiO₂ Composites to Recycle Copper Ions from Water for Antimicrobial Application

Paper # 598755

Chien Su, Kuo-Pin Yu: National Yang-Ming University

BACT Development and Implementation

Track: REGU/AQMO

Room: 303B

6/27/2019, 1:30 PM

Panel – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc.

Vice Chair: Colin Campbell, RTP Environmental Associates, Inc.

Best available control technology (BACT) remains a significant component of a PSD permit. Over the years, U.S. EPA and State agencies have issued several BACT determinations for both non-greenhouse gas (GHG) pollutants and GHGs. The panelists will provide an overview of the latest BACT developments and highlight recent BACT determinations issued by the U.S. EPA and State agencies. BACT review typically involves input by the applicant and comments from citizens, U.S. EPA, and other stakeholders. They are also part of significant legal challenges. Recently environmental organization have taken significant interest in BACT determinations for greenhouse gases and other pollutants for various projects. These appeals have been addressed through both the U.S. EPA's administrative review process as well as the courts. The panelists will address significant BACT determinations, comments, and legal challenges. In addition, the panelists will outline the Part 70 objection procedure and how that process has been used to raise concerns about historical BACT determinations

Panelists:

- *Colin Campbell: RTP Environmental Associates, Inc.*
- *Douglas McWilliams: Squire Patton Boggs*
- *Daniel Dix: All4*

Challenges and Opportunities in Delivering Environmental Education

Track: EDUC

Room: 302B

6/27/2019, 1:30 PM

Panel – TCC: Various

Chair: Zaher Hashisho, University of Alberta

Vice Chair: Ashok Kumar, The University of Toledo

Environmental engineering and science is a relatively new and continuously evolving discipline. The wide range of environmental issues witnessed over the past few decades shaped environmental engineering and science into an interdisciplinary field. At the graduate level, students from different educational backgrounds are enrolled in environmental engineering and science programs. Rapid development in technology (e.g. internet, smart devices, computational power) provide environmental educators opportunities in effective communication and teaching; however, it can also presents challenges to navigate rapidly evolving social and technological landscape. Environmental educators now deal, in classrooms, with Millennials known for their passion for technology, social networking, collaboration, and innovation.

This panel session will cover a variety of topics related to challenges in delivering environmental education including evaluation of student learning outcomes, engaging students, and environmental curricula. Case histories will be discussed to explain the current and future efforts in these areas.

Panelists:

- *Zaher Hashisho: University of Alberta*
- *Ashok Kumar: The University of Toledo*
- *Melanie Sattler: University of Texas at Arlington*
- *Marianne Hatzopoulou: University of Toronto (invited)*