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Emissions Reductions for Sustainable
Energy Futures

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Volume 1 of 2

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OPENING KEYNOTE PLENARY SESSION

Sponsored by:



A Multi-Perspective Approach to Regulation and Measurement of Emissions

Tuesday, June 25, 8:30 am – 10:30 am, Macleod A

Opening Keynote Speaker:



Rebecca Schulz, Minister of Environment and Protected Areas, Government of Alberta N/A

Rebecca Schulz was first elected as the Member of the Legislative Assembly for Calgary-Shaw on April 16, 2019 and was re-elected on May 29, 2023. Prior to her election, Ms. Schulz worked as a communications professional with a master's degree from Johns Hopkins University. A wife and proud mother of 2 young children, Schulz has seen first-hand the challenges that Alberta's families have faced in times of economic stagnation and decline. Ms. Schulz was sworn in as Minister of Environment and Protected Areas on June 9, 2023. She previously served as Minister of Municipal Affairs and Minister of Children's Services.

Keynote Panel Speakers:



Rob Hoffman, Director, Government & Stakeholder Relations, Canadian Fuels Association 1

Rob Hoffman has extensive experience in the downstream petroleum industry, having previously worked for 30 years with Imperial Oil, and in December 2014 Rob joined the Canadian Fuels Association to serve in his current role as CFA's Director - Government and Stakeholder Relations for Western Canada. Rob currently serves on the board of directors for the Alberta Water Council, Alberta's Clean Air Strategic Alliance (CASA), the Canadian Brownfields Network, and on Transport Canada's General Policy Advisory Council (GPAC) which promotes the safe transportation of dangerous goods.



Sanjay Prasad, Executive Director, Wood Buffalo Environmental Association (WBEA) 14

Since 1999, Sanjay has served in multiple roles for the Wood Buffalo Environmental Association (WBEA), ensuring the organization's ongoing reputation for high-quality data, independent air quality reporting, and consensus-based decision-making in the heart of the Athabasca Oil Sands Region. Under Sanjay's leadership, the WBEA's membership has grown to include 42 member organizations from industry, Indigenous communities, government, and NGOs and expanded the monitoring programs to be recognized as one of Canada's largest ambient air and deposition monitoring networks. Sanjay's contributions to air quality monitoring have focused on providing transparent monitoring program designs, accountability for sharing data on public websites, and commitment to sharing information to benefit all stakeholders and rightsholders living and working in Northeastern Alberta.



Dr. Sumi Wren, Research Scientist, Air Quality Research Division at Environment and Climate Change Canada (ECCC) 19

Sumi's research focuses on air pollutant and greenhouse gas emissions, with a recent focus on the oil sands region of Canada, as well as on urban air quality. She is currently co-leading a multi-year research project to improve the quantification of methane emissions and air quality impacts of downstream oil and gas operations across Canada, through mobile atmospheric measurements. This project is joint with the Climate Research Division at ECCC and funded through the Program of Energy Research and Development of Natural Resources Canada. Prior to joining ECCC as a post-doc in 2015, she held a post-doctoral position at the University of Oregon. Dr. Wren completed her PhD in Environmental Chemistry at the University of Toronto.



Moderated by: James Walker, President, Air & Waste Management Association; Air Quality Manager, CMS Energy N/A

Mr. Walker currently works for Consumers Energy in Jackson, Michigan as the Air Quality Manager for the Environmental Quality & Sustainability Department. His prior work experience includes being the Corporate Environmental Manager for Rea Magnet Wire Company in Fort Wayne, Indiana and Environmental Supervisor for Ford Motor Company in Dearborn, Michigan. Mr. Walker is currently the President of the Air & Waste Management Association. His education includes BSE, Chemical Engineering, University of Michigan–Ann Arbor, 1987 and MBA, Operations Management Concentration, Oakland University, 1994.

54TH ANNUAL CRITICAL REVIEW

Thursday, June 27, 8:00 am – 10:00 am

Atmospheric Reduced Nitrogen: Sources, Transformations, Effects, and Management 30

Authors:



Charles T. Driscoll, Lead Author and Presenter, University Professor of Environmental Systems and Distinguished Professor, Department of Civil and Environmental Engineering, Syracuse University, Syracuse, NY



Daven Henze, Associate Professor of Mechanical Engineering, Department of Mechanical Engineering, University of Colorado, Boulder



Jana Milford, Professor Emerita of Mechanical Engineering, Department of Mechanical Engineering, University of Colorado, Boulder



Michael Bell, Ecologist, U.S. National Park Service, Air Resources Division, Lakewood, CO

Nitrogen is an essential macronutrient in organisms and biotic processes, and commonly a growth limiting nutrient for primary producers in many ecosystems. Over the past century, increased production of human-generated reactive nitrogen has greatly altered the global nitrogen cycle with diverse and profound benefits and many adverse health and environmental effects. Among these are a deterioration of air quality associated with emissions of nitrogen oxides, ammonia, and other forms of reduced nitrogen. In the 54th Annual A&WMA Critical Review, the authors examine current science on sources, processes, effects, and management of ammonia, focusing primarily on the United States with comparative insights from Europe and China.

The review considers the effects of ammonia on terrestrial and aquatic ecosystems and associated critical loads. Effects on human health, visibility, and climate are discussed. It covers recent developments in estimating emissions and modeling the contribution of ammonia to fine particulate matter and nitrogen deposition. The review shows that ongoing climate change and decreases in sulfur and nitrogen oxides emissions have implications for gas-particle partitioning and deposition patterns. Available methods to mitigate ammonia emissions and the history and status of emissions management efforts are also described. The review concludes with recommendations for how the U.S. Environmental Protection Agency, other federal agencies, and states could enhance efforts to address ammonia emissions. The full-length paper will appear in the June 2024 issue of the *JA&WMA*.

Following the presentation, invited discussants will critique the presentation and provide alternate viewpoints. Comments also will be solicited from the floor during a live question-and-answer sequence to end the session.

Discussants:



Jeffrey L. Collett, Jr., Ph.D. 54
Professor, Colorado State University, Fort Collins, Colorado; Technical Editor-in-Chief, Journal of the Air & Waste Management Association *JA&WMA*



Carla Davidson, Ph.D., KTPC 61
President, Endeavour Scientific Inc., Calgary, Alberta, Canada



Greg Wentworth, Ph.D. 69
Senior Atmospheric Scientist, Alberta Environment and Protected Areas, Edmonton, Alberta, Canada

Join the Discussion

To complete the review process, the Critical Review Committee Chair will synthesize all of the discussion points into a single paper that will be published in the October 2024 issue of *JA&WMA*. Comments should be submitted in writing to Susan S. Wierman at susan.wierman@gmail.com by July 25, 2024.

Want to get involved? Attend the Critical Review Committee Meeting on Thursday, June 27, 10:30 am – 11:30 am, Ideation 4

TECHNICAL AND STUDENT POSTERS

Attend the Technical and Student Poster Session
Tuesday, June 25, 10:45 am – 12:15 pm, Macleod Foyer

Sponsored by:



Air Emission Control Technologies and Programs

Effect of Regeneration Parameters on Heel Formation During Adsorption-Desorption of VOCs Over Honeycomb Zeolite Adsorbents N/A

Paper #1698531 (Student Poster #10)
Sina Esfandiar Pour, University of Alberta

Deciphering the Volatile Organic Compounds Removal with Phase Change Materials and Zn Contained Metal Organic Framework N/A

Paper #1735189 (Student Poster #26)
Yu-Jou Tu, National Ilan University

Degradation of Oxytetracycline in Solution by Biochar and Chitosan Aerogel 78

Paper #1735232 (Student Poster #27)
Hong-Ruei Wu, National Ilan University

Cyclic Adsorption/Regeneration of VOCs on Honeycomb Zeolite N/A

Paper #1737047 (Student Poster #34)
Rouhollah Heydari, University of Alberta

Adsorption and Desorption of Polar VOCs on Honeycomb Zeolite N/A

Paper #1737921 (Student Poster #38)
Kiarash Mahdavihezaveh, University of Alberta

Synthesizing Eco-Friendly and Safe Metal-Organic Frameworks at Moderate Temperatures for Effective VOC Adsorption 79

Paper #1737836 (Student Poster #40)
Zahra Afzali, University of Alberta

Air Pollutant Emission Sources: Quantification, Monitoring, and Reporting

Emissions from an Amine-Based CO₂ Capture System N/A

Paper #1692237
Sangsup Lee, Seungjin Choi, Joohyeong Lee, Chungbuk National University

Source Apportionment of Ambient Volatile Organic Compounds in Windsor, Ontario, Canada 80

Paper #1724808 (Student Poster #22)
Tianchu Zhang, University of Windsor

Condensable Particulate Matter Emissions from Oxy-Combustion 81

Paper #1733294 (Student Poster #24)
Seungjin Choi, Chungbuk National University

Estimation of Air Emissions Resulting from Residential Consumption of Petroleum Liquefied Gas During Cooking in Panama City N/A

Paper #1736484 (Student Poster #29)
Amsley Irelis Medina-Castillo, Technological University of Panama

Electrochemical Detection of Oxytetracycline Using MWCNT and Sugarcane Carbon Modified Graphite Electrode N/A

Paper #1737037 (Student Poster #32)
Sandy Cai Yuting, National Ilan University

On-Road Heavy-Duty Truck Emissions in Illinois Before and After COVID-19 in 2019 and 2021 N/A

Paper #1737045 (Student Poster #33)
Yi-Ling Cheng, University of Illinois at Chicago

Air Pollutant Monitoring and Analysis

Applying Cluster Analysis of PM_{2.5} Micro-sensor to Establish a Systematic Method of Air Quality 82

Paper #1698419
Chai Hsiu Huang, Chungsyng Lu, Yushiang Weng, National Chung Hsing University

Multimodal Metal-Organic Framework Gas Sensors with Machine Learning for Detecting Indoor Volatile Organic Compounds N/A

Paper #1733303 (Student Poster #25)
Yelim Choi, Seoul National University of Science and Technology

Analyzing Ammonia Emissions: A Comparative Study of Measurement Techniques in Manure Spreading N/A

Paper #1737203 (Student Poster #35)
Angela Trivino, McGill University

Air Pollutant Exposure, Impacts, and Health Risks

Influence of Infiltration on Indoor PM_{2.5} Concentrations in Office Buildings N/A

Paper #1736558 (Student Poster #30)
Ehsan Alam, University of Windsor

Air Quality Modeling and Impact Assessment: Models, Applications, and Guidance

Analysis of Seoul Air Quality through WRF-CMAQ Modeling System under Seasonal Management and Emergency Reduction Measures of Fine Dust 83

Paper #1698750
Young Sunwoo, Yoonju Cho, Yujin Jung, Yejin Choi, Jihye Eom, Konkuk University

Summary of the Performance of Three Different Chemical Mechanisms on Modelling Secondary PM_{2.5} and O₃ in Greenview Alberta, Canada 84

Paper #1709880
David Lyder, Alberta Environment and Protected Areas; Michael Zelensky, Scott Heckbert, Mujtaba Shareef, Alberta Energy Regulator; Sunny Cho, Government of Alberta

TECHNICAL AND STUDENT POSTERS

Pollutant Health Effects

Effect of Fluoride Contamination on Living Beings: A Global Perspective with Prominence of Canadian Scenario N/A

Paper #1718847 (Student Poster #21)

Rajwinder Singh, Dr. B.R. Ambedkar National Institute of Technology

Climate Change — Drivers and Mitigation

Impact of Urbanization, Transportation Infrastructure Investment, and Industrial Structure on CO₂ Emissions, with Evidence from Densely Populated Asian Countries N/A

Paper #1698758

Arshad Ali, Northeast Agricultural University

Creating a First-Ever Measurement-Based Methane Inventory for Upstream Oil and Gas Production in Colombia N/A

Paper #1702467

Nikolai Calderon Cangrejo, Simon Festa-Bianchet, Bradley Conrad, David Tyner, Shona Wilde, Matthew Johnson, Energy & Emissions Research Lab (EERL) at Carleton University

Cloud Seeding as a Viable Climate Change Solution N/A

Paper #1702543

Grace Morris, Rebekah Oulton, California Polytechnic State University, San Luis Obispo

Amine Functionalized Material Organic Frameworks for the CO₂ Capture N/A

Paper #1698704 (Student Poster #13)

Chengshin Shih, National Ilan University

Decarbonizing the United States Municipal Solid Waste System: Cost and Climate Change Impacts of Organic Waste Valorization Pathways 85

Paper #1718562 (Student Poster #20)

Amma-Asantewaa Agyei Boakye, Yale University

Optimization of Polyethylenimine-Modified USTA-280 Metal Organic Frameworks for Enhanced Post-Combustion CO₂ Capture N/A

Paper #1736779 (Student Poster #31)

Corinne Watson, California Polytechnic State University

CO₂ Capture from Ambient Air with Solid Adsorbents 86

Paper # 1698211

Chen Bin Huang, Chungsyng Lu, Pinghao Su, National Chung Hsing University

Residuals And Waste: Treatment, Reclamation, Beneficial Use, and Impacts

Photocatalytic Reaction of Oxalic Acid in Aqueous Solution with TiO₂/GNP Composites 87

Paper #1698681

Tsu Hui Chou, Chungsyng Lu, National Chung Hsing University

Ni-Foam Combined with Fe-CeO₂ Electrode and Electrodeposited with Platinum for Ammonium Measurement in Water N/A

Paper #1698678 (Student Poster #12)

Boru Wu, National Ilan University

Termite Gut Microbe (TAV5) Application to Pulp & Paper Waste and Bagasse to Enhance Lignin Degradation and Boost Methane Production in Anaerobic Digestion N/A

Paper #1712179 (Student Poster #18)

Doreen Ntiamoah-Asare, Melanie Sattler, Tharun Kuman Mangiri, University of Texas at Arlington

Estimating Emission Reduction Potentials for Anaerobic Digestion at Emory University and Beyond 88

Paper #1715240 (Student Poster #19)

Kylie Hanson, Emory University

Fabrication, Characterization, and Halochromic Mechanism of Eco-Friendly Intelligent Packaging Film Produced from Discarded Jaboticaba Peel Extract and Fishery Waste Chitosan N/A

Paper #1737242 (Student Poster #36)

Ying-Chen Chen, National Chung Hsing University

Sodium (Na⁺) Ion Adsorption from Saline Water Sample by Adsorbent Prepared Using Carbide Slag Waste N/A

Paper #1737717 (Student Poster #37)

Manisha Kothari, United Arab Emirates University

Bioenergy

Measurements of Sulfur-Containing PM₁₀ Particles in Bio-Engine Exhaust N/A

Paper #1697610

Yongjing Zhao, Frank Mitloehner, Yues Pan, University of California, Davis

Sustainability and Resource Conservation

Effect of Quota Fertilization on Soil and Ecological Environment Quality N/A

Paper #1698431

Hafiza Zara Latif, China Agricultural University; Naveed Mahmood, Northeast Agricultural University; Awais Latif, National University of Computer and Emerging Science (FAST)

Exploratory Analysis of Sustainable Development Goals (SDGs) Indicators 89

Paper #1733259 (Student Poster #23)

Sera Lee, Stony Brook University

Wildfire Smoke Emissions, Modeling and Properties

Chemical Speciation Network Reveals Variations of Brown Carbon Concentration and Optical Property Across the United States N/A

Paper #1697678

Lung-Wen Antony Chen, University of Nevada, Las Vegas; Jingqiu Mao, University of Alaska, Fairbanks; Judith Chow, Xiaoliang Wang, John Watson, Desert Research Institute

Using an Unmanned Aerial Vehicle to Sample Aerosols in Wildfire Plumes N/A

Paper #1698995 (Student Poster #14)

John Himes, New Mexico Institute of Mining and Technology

Development of a Low-Cost Dynamic Flux Chamber and Control System for Post-Burn Wildfire Areas N/A

Paper #1738067 (Student Poster #39)

Lincoln Scheer, Fort Lewis College

TECHNICAL SESSIONS – TUESDAY

Tuesday, June 25 2024				
Time	Title	Track	Session	Room
8:30 am – 10:30 am	Opening Keynote Session: A Multi-perspective Approach to Regulation and Measurement of Emissions		panel	Macleod A
10:45 am – 5:30 pm	Exhibit Hall Grand Opening and Viewing			Macleod BCD
10:45 am – 12:15 pm	Technical and Student Poster Session			Macleod Foyer
11:55 am – 1:15 pm	Technical Coordinating Committee Meetings			See page 19
Tuesday PM 1				
1:30 pm – 3:30 pm	Measurement and Quantification of Fugitive Methane Emissions from Oil & Gas and Landfills	MINI/AQMM/AQES/INDU	panel	Glen 201-202
1:30 pm – 3:30 pm	Air Pollution Control: PM, NO _x , and SO _x	AQCT	platform	Glen 205
1:30 pm – 3:30 pm	Emission Inventories Development	AQES	platform	Glen 209
1:30 pm – 3:30 pm	Air Dispersion Modeling: Case Studies, Issues, Applications, Advances, and Guidance (Part 1)	AQMO	platform	Glen 206
1:30 pm – 3:30 pm	Climate Change - Regulations, Policy, and Adaptation	CLIM	platform	Macleod E3
1:30 pm – 3:30 pm	New Frontiers in Electric Power Generation	INDU	platform	Macleod E1
1:30 pm – 3:30 pm	New Source Review (NSR): Issues and Recent Developments	REGU	panel	Glen 203-204
1:30 pm – 3:30 pm	Sustainability Metrics and Analytics	SUST	platform	Macleod E2
1:30 pm – 3:30 pm	Remediation, Site Investigation, and Vapor Intrusion	WAST	platform	Macleod E4
3:30 pm – 4:00 pm	Session Break			Exhibit Hall
Tuesday PM2				
4:00 pm – 6:00 pm	Integrating Satellite Observations into Air Quality Decision Making	MINI/AQMM	panel	Glen 201-202
4:00 pm – 6:00 pm	Air Pollution Control: GHGs	AQCT/CLIM	platform	Glen 205
4:00 pm – 6:00 pm	Oil Sands Measurements, Monitoring, and Emissions Challenges	AQMM	platform	Glen 209
4:00 pm – 6:00 pm	Air Dispersion Modeling: Case Studies, Issues, Applications, Advances, and Guidance (Part 2)	AQMO	platform	Glen 206
4:00 pm – 6:00 pm	Climate Impacts and Risk to the Environment	CLIM	platform	Macleod E3
4:00 pm – 6:00 pm	AI for Environmental Leaders: Will it Replace Environmental Managers?	REGU	panel	Glen 203-204
4:00 pm – 6:00 pm	Sustainable Waste/Materials Management	SUST	platform	Macleod E2
4:00 pm – 6:00 pm	Landfills and Energy Recovery	WAST	platform	Macleod E4
4:00 pm – 6:00 pm	How Does it Work? New Regulations in Canada and the USA	YPRO/REGU	panel	Macleod E1

Measurement and Quantification of Fugitive Methane Emissions from Oil & Gas and Landfills

Track: MINI/AQMM/AQES/INDU

6/25/2024, 1:30 PM

Room: Glen 201-202

Sponsored by:



Panel – TCC: AAM/LHC

Chair: Ali Lashgari, Project Canary, PBC **N/A**

Co-Chair: Brian Taylor, Project Canary, PBC **N/A**

A panel of thought leaders from industry, tech developers, academia, investors, and regulatory agencies will get together to share their thoughts on recent advances in fugitive methane emissions measurements and quantification in the oil & gas and landfills sectors. This session will help harmonize thoughts around the development, quality assurance, approval, and use of novel advanced emissions measurement technologies for fugitive methane emissions reduction from oil & gas and landfills sectors.

Panelists:

- Thomas Fox, Highwood Emissions Management **N/A**
- Jennifer Winter, University of Calgary **N/A**
- Sebastien Biraud, Lawrence Berkeley National Laboratory **N/A**
- Matthew R. Johnson, Energy & Emissions Research Lab (EERL) at Carleton University **N/A**
- Tia Scarpelli, Carbon Mapper **90**
- Roger B. Green, WM **95**

Air Pollution Control: PM, NO_x, and SO_x

Track: AQCT

6/25/2024, 1:30 PM

Room: Glen 205

Sponsored by:



Global Analyzer Systems

Platform – TCC: AAC

Chair: Masoud Jahandar Lashaki, Florida Atlantic University

Co-Chair: Ryan Thomas, SCS Engineers

1:30 PM

Management Program for Pollution Control Equipment: Addressing Today's Challenges of Manpower Availability and Expertise to Reach or Maintain Compliance with Air Quality Legislation 101

Paper #1700189

Hugues Châteauneuf, BBA

1:50 PM

Air Pollution Control Equipment Revisited N/A

Paper #1660950

R R. Dupont, Utah State University; Jay Richardson, EES Corp;

Kumar Ganesan, Montana Tech; Lou Theodore, Theodore Tutorials

TECHNICAL SESSIONS – TUESDAY

2:10 PM

Influence of Synthesis Methods on Catalytic Properties and SO₂ Resistance over MnFeO_x Catalyst for Low-Temperature NH₃-SCR of NO 127

Paper #1698241

Chia Chen Lee, Jo Yin Huang, Liang-Yi Lin, National Yang Ming Chiao Tung University

2:30 PM

Low-Temperature NO_x Reduction and SO₂ Poisoning Effect over VO_x/TiO₂ Catalyst: Defect Effect of TiO₂ Support 134

Paper #1698249

ZiLan Liu, Ju-Chen Hsu, Liang-Yi Lin, National Yang Ming Chiao Tung University

Emission Inventories Development

Track: AQES

6/25/2024, 1:30 PM

Room: Glen 209

Platform – TCC: AAE

Chair: Violeta Mugica-Álvarez, Autonomous Metropolitan University-Azcapotzalco

Co-Chair: Rodolfo Sosa-Echeverría, Institute of Atmospheric Sciences and Climate Change

1:30 PM

Real-Time-Emissions Tracker (RT-GHG) N/A

Paper #1674189

Ahad Sarraf Shirazi, Process Ecology Inc.

1:50 PM

Applying the Correct Bowen Ratio to Sites in the Prairies N/A

Paper #1689002

Dennis C. Fudge, CPANS

2:10 PM

Emission Estimates from Passive Monitoring Data N/A

Paper #1703499

Youssef Taha, Parsons; Mike Sanborn, AECOM; Randy Rudolph, AECOM Canada Ltd.

2:30 PM

Methodologies and Lessons Learned for Container Port Air Emissions Inventories N/A

Paper #1697121

Casey Spiker, Leah Blinn, Civil and Environmental Consultants, Inc.

2:50 PM

NASA Earth Science Applications to Promote One Health Collaborations in Air Quality Management N/A

Paper #1701846

Helena J. Chapman, NASA HQ/Booz Allen Hamilton; Laura M. Judd, NASA Langley Research Center; John A. Haynes, NASA HQ

Air Dispersion Modeling: Case Studies, Issues, Applications, Advances, and Guidance (Part 1)

Track: AQMO

6/25/2024, 1:30 PM

Room: Glen 206

Platform – TCC: APM

Chair: Mary M. Kaplan, AECOM

Co-Chair: William Jones, Blue Sky Modeling

1:30 PM

A Model Evaluation Study of AERMOD Using Urban Heat Island Effect and Wind-Tunnel-Derived Building Downwash Parameters 142

Paper #1703201

Olga Samani, ERM

1:50 PM

AERMOD Haul Road Modeling Options N/A

Paper #1697087

Tony Schroeder, Katrina M. Becker, Trinity Consultants

2:10 PM

Air Quality Model Performance Evaluation for an Iron Ore Processing Facility Case Study 150

Paper #1698938

Martin Gauthier, RWDI

2:30 PM

Application of the Area Meander Option in AERMOD for Construction Health Risk Assessments N/A

Paper #1701864

Mary M. Kaplan, Christopher J. Warren, AECOM

2:50 PM

Air Quality Dispersion Modeling Analysis for Minor Source Permitting with Environmental Justice in Mind N/A

Paper #1697721

Qi Zhang, GHD

3:10 PM

Modeling Deposition over a Century—Challenges and Lessons Learned 161

Paper #1700186

William Jones, Blue Sky Modeling

Climate Change - Regulations, Policy, and Adaptation

Track: CLIM

6/25/2024, 1:30 PM

Room: Macleod E3

Platform – TCC: CCP

Chair: Christopher D. Easter, Bay Area Air Quality Management District

Co-Chair: Hannah Rubin, University of Tennessee

1:30 PM

British Columbia's Proposed Methane Reduction Regulations for the Oil and Gas Sector 170

Paper #1662044

Kristofer A. Siriunas, British Columbia Energy Regulator

TECHNICAL SESSIONS – TUESDAY

1:50 PM

Navigating Regulatory Excellence: Insights from Alberta's 2021 CEMS Code Revisions and Audits N/A

Paper #1702603

Justin Raffin, Global Analyzer Systems

2:10 PM

Carbon Capture: Lessons from the UK 182

Paper #1697660

Christie Hazell-Marshall, ERM

2:30 PM

Investing in Nature for Carbon: Why, Where, and How? N/A

Paper #1702638

Veronika Vazhnik, Doug Huxley, Emily Sanders, Jacobs

2:50 PM

Overview of the 45Q Tax Credit and Carbon Capture Utilization and Storage Technology 188

Paper #1710391

Jeff P. Baldino, Connor P. Carroll, Jenna P. McCaffrey, EcoCira, Inc.

3:10 PM

Preparing Air Permits and Greenhouse Gas Emission Assessments for Hydrogen Production and Dispensing Facilities A Low Carbon Fuel Standard Challenge 199

Paper #1712141

Michael Slavick, EnSafe Inc.

New Frontiers in Electric Power Generation

Track: INDU

6/25/2024, 1:30 PM

Room: Macleod E1

Platform – TCC: PWR

Chair: Roya Mortazavi, Concordia University

Co-Chair: Dean Stanphill, Universal Engineering Sciences

1:30 PM

It's Not Easy Being Green: Overcoming Regulatory Hurdles in Canada's Emerging Hydrogen Economy N/A

Paper #1711490

Selina Lee-Andersen, McCarthy Tetrault LLP

1:50 PM

Heating Up: How Geothermal Energy is Poised for a Big Role in the Energy Transition N/A

Paper #1712008

Jack M. Wilson, Geosyntec Consultants

2:10 PM

Innovative Air Quality Dispersion Modeling Techniques for Addressing Varying Emissions from Offshore Wind Farm Construction and Operation Activities N/A

Paper #1709886

Elizabeth M. Hendrick, Ted Guertin, Jeffrey R. Harrington, Tiffanie Ramos, Tetra Tech Inc.

2:30 PM

The Research of Hg Capture Technologies from Flue Gas After Solid Fossil and Alternative Fuels Combustion N/A

Paper #1689495

Lukas Pilar, Czech Technical University in Prague; Karel Borovec, Zbyszek Szeliga, VSB - TU Ostrava, CEET, Energy Research Centre; Oldrich Suldoovsky, ACS International s.r.o.

2:50 PM

Air Quality Benefits of Transitioning from Coal to Natural Gas in Power Generation N/A

Paper #1698896

Kevin McCullum, KRM Environmental Consulting Inc.

3:10 PM

Developing Consumption-Based Emissions Rates for the Emissions & Generation Resource Integrated Database (eGRID) N/A

Paper #1702718

Ambrish Sharma, Jonathan G. Dorn, Parker Malek, Caroline Watson, Abt Associates Inc.

New Source Review (NSR): Issues and Recent Developments

Track: REGU

6/25/2024, 1:30 PM

Room: Glen 203-204

Panel – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc. **N/A**

New Source Review (NSR) is one of the most contentious Clean Air Act program and has been subject of several recent developments. These developments include administration changes that affected or will affect program elements and court challenges. In addition, there are efforts at State level to address program implementation. NSR permitting (which includes nonattainment major NSR permitting, Prevention of Significant Deterioration (PSD) permitting, and minor NSR permitting) continues to be affected by U.S. Environmental Protection Agency (EPA) policy and court decisions regarding implementation of the programs, and other issues. EPA is proposing changes to several elements of major NSR regulations, EPA is also looking at streamlining Title V review and petition process. A panel of experts will discuss key developments in NSR, point out ways that facility operations could be affected by these developments, indicate what lay ahead, and identify issues that remain unsettled.

Panelists:

- *Shannon S. Broome, Hunton Andrews Kurth LLP 220*
- *Gurinder Saini, RTP Environmental Associates, Inc. 229*
- *Brandon Curtis, Hiser Joy 237*

Sustainability Metrics and Analytics

Track: SUST

6/25/2024, 1:30 PM

Room: Macleod E2

Platform – TCC: SUS

Chair: Mona Hazur, Arcadis

Co-Chair: Kate Howe, Weaver Consultants Group

TECHNICAL SESSIONS – TUESDAY

1:30 PM

New Perspectives on Canadian Pollutants and their Movement in Industrial Waste 250

Paper #1688377

Alicia Berthiaume, Environment and Climate Change Canada

1:50 PM

Energy Transition, Net Zero, and ESG: How Successful can these Goals be Without a Viable Digital Roadmap N/A

Paper #1702800

Mona Hazur, Arcadis

2:10 PM

The Breathing Human Infrastructure: Integrating Air Quality, Traffic, and Social Media Indicators N/A

Paper #1712082

Marwa M. El-Sayed, Scott Parr, Embry-Riddle Aeronautical University; Heather O'Leary, University of South Florida

2:30 PM

Driving Investment for CCUS in Canada's Oil and Gas Sector: ESG Reporting Opportunities 267

Paper #1702533

Tetiana Semeniutina, Jennifer Winter, University of Calgary

2:50 PM

A Case Study in Industrial Emissions Policy Development - Alberta's Industrial Heartland Designated Industrial Zone Pilot Program N/A

Paper #1689735

Maxwell Mazur, Matilda Ricci, Graham Tyler, Alberta Environment and Protected Areas

Remediation, Site Investigation, and Vapor Intrusion

Track: WAST

6/25/2024, 1:30 PM

Room: Macleod E4

Platform – TCC: WMR

Chair: Paul Ruehl, Geocycle North America

Co-Chair: Andrew Horwath, Civil & Environmental Consultants, Inc.

1:30 PM

Advances in Solid Phase Colloidal In-Situ Remediation Amendments N/A

Paper #1699028

John Freim, Regenesys Bioremediation

1:50 PM

Remediation of Contaminated Dumpsite Soil: An Evaluation of Soil Amendments in Combination with Phytoremediation 274

Paper #1697070

Sasha Jones, Arpita Bhatt, Melanie L. Sattler, University of Texas at Arlington

2:10 PM

Anticipating Climate Change Impacts in Vapor Intrusion (VI) Building Assessment and Long-Term Stewardship N/A

Paper #1696672

Christopher C. Lutes, Tyler Jantzen, Jacobs Solutions; Jennifer Caron, Jacobs Consultancy Canada

2:30 PM

New Methods to More Accurately Quantify Hydrocarbon Contamination from Natural Background N/A

Paper #1702519

Anthony Aquino, AGAT Laboratories

2:50 PM

PGM Recovery from Spent Automotive Catalytic and Acetone Removal with Low-Temperature Recovery Precious Metals N/A

Paper #1702704

Lian-Wei Li, Zhang Zhang-Tang, National Ilan University

Integrating Satellite Observations into Air Quality Decision Making

Track: MINI/AQMM

6/25/2024, 4:00 PM

Room: Glen 201-202

Panel – TCC AAM

Chair: Laura M. Judd, NASA Langley Research Center **N/A**

Co-Chair: Helena J. Chapman, NASA HQ/Booz Allen Hamilton **N/A**

To protect the health of humans and our environment, managing air pollution requires the evaluation and identification of solutions to comply with regulations. This panel session highlights how satellite-based perspectives can help fill data gaps in current air quality decision-making processes. Panelists will cover topics on improving State Implementation Plan (SIP) modeling frameworks with satellite observations, observing ozone and PM precursors with high-resolution air quality satellite data, and activities ongoing within our Health and Air Quality Applied Sciences Team (HAQAST). Additionally, this panel includes early results from NASA's newest satellite dataset relevant for air quality decision-making with the Tropospheric Emissions: Monitoring of Pollution (TEMPO) instrument providing hourly observations of key air quality pollutants from geostationary orbit. Our panelists will share their challenges and successes in using satellite data to better understand air pollution as well as describe training opportunities for audience members to gain insight on using satellite data.

Panelists:

- *John A. Haynes, NASA HQ 289*
- *Kenneth J. Davis, The Pennsylvania State University N/A*
- *Aaron Naeger, NASA MSFC N/A*
- *Jenny Bratburd, University of Wisconsin N/A*

Air Pollution Control: GHGs

Track: AQCT/CLIM

6/25/2024, 4:00 PM

Room: Glen 205

Platform – TCC: AAC

Chair: Masoud Jahandar Lashaki, Florida Atlantic University

Co-Chair: Ryan Thomas, SCS Engineers

4:00 PM

Quantifying the Methane Oxidation Capacity of Compost-Based Biofilter Media 296

Paper #1702682

Dinu Sankalpa Attalage, Guardyan Conservation Corp.; Patrick Hettiaratchi, M. Cathryn Ryan, University of Calgary

TECHNICAL SESSIONS – TUESDAY

4:20 PM

Stack Testing to Assess Methane Mitigation Technologies N/A

Paper #1694262

Kyla Clarke, Erica Emery, Saskatchewan Research Council

4:40 PM

Integrated CO₂ Sorption and Methanation over Ru/CeO₂-MgO Composite: Structure-Activity Relationship and Reaction Mechanism 306

Paper #1698239

Cheng Zhen Wu, Husan Ting Fu, Liang-Yi Lin, National Yang Ming Chiao Tung University

5:00 PM

Carbon Dioxide Capture Potential of Carbide Slag Waste at Ambient Conditions N/A

Paper #1698941

Manisha S. Kothari, Ashraf Aly Hassan, Amr El Dieb, Hilal El Hassan, United Arab Emirates University

5:20 PM

Micro-Adjustments: Identifying Small Changes in Operations That Lead to Large Impacts on Energy Consumption and Emissions N/A

Paper #1698931

Jeff Hayter, ERM; Rory O'Brien, Cenovus

Oil Sands Measurements, Monitoring, and Emissions Challenges

Track: AQMM

6/25/2024, 4:00 PM

Room: Glen 209

Platform – TCC: AAM

Chair: Alexandria Price, Formation Environmental

Co-Chair: Chun Yi Wu, Minnesota Pollution Control Agency, Retired

4:00 PM

Atmospheric Deposition Changes in the Athabasca Oil Sands Region, Alberta, Canada Observed from the WBEA Forrest Health Monitoring Program 2009–2020 314

Paper #1701813

Matthew S. Landis, Integrated Atmospheric Solutions, LLC; Eric Edgerton, ARA, Inc.; Emily M. White, Maed Consulting

4:20 PM

How to Reconcile Suspected and Reported Fugitive Methane Emissions from the Oil Sands? 326

Paper #1702645

Francoise Robe, Michelle Seguin, RWDI

4:40 PM

Quantifying Emissions from a Small Oil Sands Demonstration Pit Lake N/A

Paper #1703423

Youssef Taha, Parsons; Ignacio Gallardo, Mark T. Modrak, AECOM; Ahmad Kia, Randy Rudolph, AECOM Canada Ltd.

5:00 PM

Measurement of Trace Gases and PM at WBEA Forrest Health Monitoring Sites in the Athabasca Oil Sands Region, Alberta, Canada 338

Paper #1702662

Eric Edgerton, ARA, Inc.; Matthew S. Landis, Integrated Atmospheric Solutions, LLC; Emily M. White, Maed Consulting

5:20 PM

Characterization of GHG Fugitive Emissions from an Oil Sands Tailings Pond in Northern Alberta: Results from an Initial Assessment 350

Paper #1698600

Long Fu, Zheng Yang, Lucas Zhang, Alberta Environment and Protected Areas; Quamrul Huda, Centre for Sensors and System Integration, Northern Alberta Institute of Technology; Niko Veriotes, University of Guelph

5:40 PM

Wood Buffalo Environmental Association's Community Odour Monitoring Program 362

Paper #1697891

Shawn M. Jansen van Beek, Tom Dann, Emilie Briggs, Wood Buffalo Environmental Association

Air Dispersion Modeling: Case Studies, Issues, Applications, Advances, and Guidance (Part 2)

Track: AQMO

6/25/2024, 4:00 PM

Room: Glen 206

Platform – TCC: APM

Chair: Qi Zhang, GHD

Co-Chair: Robynn Andracssek, Providence Engineering and Environmental Group LLC

4:00 PM

Changes in the New Guideline on Air Quality Models and Case Studies N/A

Paper #1697729

Qi Zhang, GHD

4:20 PM

Overview of EPA's New Background Concentration Guidance 372

Paper #1700210

William Jones, Blue Sky Modeling

4:40 PM

Let's Take a SIP Trip—Stories from State Implementation Plan Modeling 380

Paper #1700203

William Jones, Blue Sky Modeling

5:00 PM

National Land Cover Database Updates Assessment with EPA's AERSURFACE Tool N/A

Paper #1697221

Brian Otten, Tony Schroeder, Trinity Consultants

TECHNICAL SESSIONS – TUESDAY

5:20 PM

Evaluation of the CAMx Photochemical Grid Model for Near-Source Ozone, PM_{2.5} and 1-Hour SO₂ Modeling 390

Paper #1694630

Ralph E. Morris, Ramboll

Climate Impacts and Risk to the Environment

Track: CLIM

6/25/2024, 4:00 PM

Room: Macleod E3

Platform – TCC: CCI

Chair: Christopher D. Easter, Bay Area Air Quality Management District

Co-Chair: Hannah Rubin, University of Tennessee

4:00 PM

Contrasting the Effects of Climate Change on the Distribution, Abundance, and Decline of Bees in Tropical versus Temperate Regions 400

Paper #1709800

Robin E. Owen, Akinwande L. Kayode, Mount Royal University

4:20 PM

Demystifying Net Zero: How to Forge a Path Toward a Low Carbon Future 417

Paper #1710343

Jonathan Rowe, Arcadis

4:40 PM

Climate Change Risk Assessment Case Studies N/A

Paper #1658640

Adam T. Conti, Civil & Environmental Consultants, Inc.

5:00 PM

A Multi-Sector Analysis of Existing Climate-Related Risk Disclosures 427

Paper #1683231

Kristian A. Macoskey, Civil & Environmental Consultants, Inc.

5:20 PM

Climate Smart Agriculture is the Evolution in Ag. Focusing on Managing Carbon Emissions and Carbon Sequestration Makes Emission Reductions Achievable N/A

Paper #1712069

Michael Lurenana, Leo Giannetta, Burns & McDonnell

AI for Environmental Leaders: Will it Replace Environmental Managers?

Track: REGU

6/25/2024, 4:00 PM

Room: Glen 203-204

Panel – TCC: REG

Chair: Ryan Janoch, Mapistry N/A

How much can AI really do for environmental programs? AI is everywhere today, but will it replace environmental managers? How should you be using AI as an environmental leader? This panel will discuss the limitations of AI through some demonstrations of current AI technology, including commercially available tools, such as ChatGPT, and share ways to use AI in environmental such as: automating

data gathering, identifying data integrity issues and cleaning data, identifying risks and areas of concern including outliers, suggesting improvements to processes and/or environmental programs, and automatically generating reports. Panelists will also share where they see the future of AI in environmental programs over the next year and what might be possible in the next five years.

Panelists:

• Premal Vora, Alliance Technical Group N/A

• Jiayi Jiang, Applied Particle Technology N/A

Sustainable Waste/Materials Management

Track: SUST

6/25/2024, 4:00 PM

Room: Macleod E2

Platform – TCC: SRC

Chair: Thomas W. Easterly, Indiana Department of Environmental Management and University of Central Florida

Co-Chair: Mingming Lu, University of Cincinnati

4:00 PM

Permitting Food Waste Landfill Diversion as a Pathway to Decarbonization N/A

Paper #1699118

Dannelle H. Belhateche, Sarah Bibilonisambolin, Kelsey Suddard, Braun Intertec Corporation

4:20 PM

Phosphorus Absorption with Biochar, A Closed Loop Approach N/A

Paper #1711673

Mingming Lu, Iniyaa Thirugnanasambanthan, University of Cincinnati

4:40 PM

Characterizing Solid Waste in New York State 2023 Sampling Results N/A

Paper #1698713

Sameena Manzur, Stony Brook University

5:00 PM

What Needs to be Done to Replace all US Fossil Fuel Combustion with Solar Power? 438

Paper #1710519

Thomas W. Easterly, Indiana Department of Environmental Management & University of Central Florida

5:20 PM

In Situ Synthesis of Zn-MOF on Chitosan Aerogels for Copper Ion Removal from Wastewater 450

Paper #1698824

Zi-Xin Zhu, Chang-Tang Chang, National Ilan University

Landfills and Energy Recovery

Track: WAST

6/25/2024, 4:00 PM

Room: Macleod E4

Platform – TCC: WMB

Chair: David Greene, SCS Engineers

Co-Chair: Melanie L. Sattler, University of Texas at Arlington

TECHNICAL SESSIONS – TUESDAY

4:00 PM

Landfill Gas Management: Lessons Learned and Opportunities for Enhanced Sustainability 463

Paper #1683354

Donovan Kitt, SLR Consulting

4:20 PM

Catalytic Thermal Gasification of Biomass and RPF for the Conversion to Sustainable Energy Resources and the Control of Tar Emissions 470

Paper #1692195

Katsuya Kawamoto, Okayama University

4:40 PM

Understanding the Interaction of System Process and PLASMA Kinetics for Effective Removal of Volatile Methyl Siloxane from Landfill Gas N/A

Paper #1702510

Raziya Sultana Chowdhury, Tanvir Farouk, Shamia Hoque, University of South Carolina

5:00 PM

Key Findings and Lessons Learned from the Operation of a Full-Scale Cold-Climate Landfill Bioreactor for 14-Years 480

Paper #1711584

Patrick Hettiaratchi, Poornima Jayasinghe, University of Calgary; Dinesh Pokhrel, City of Calgary/University of Calgary; Hiroshan Hettiarachchi, University of Guam

How Does It Work? New Regulations in Canada and the USA

Track: YPRO/REGU

6/25/2024, 4:00 PM

Room: Macleod E1

Panel – TCC: REG

Chair: Nadine de Bruyn, SLR Consulting **N/A**

This panel will provide a general overview of recent and upcoming changes to air and waste regulations in Canada and the USA. This session features speakers from government, consulting, and a law firm presenting on various regulatory frameworks and their respective new and emerging regulations and trends. The session will conclude with open discussions and Q&A with the panel members. This is a great introductory panel presentation for all attendees but is focused on reaching students and young professionals. The attendee should walk away with a general understanding of each regulatory regime and the challenges each faces. Presentations include “An Overview of PFAS Regulations in Canada and the United States,” “The Many Faces of Air Policy Development in Alberta,” “Emerging GHG Regulatory Trends in the USA,” and “Understanding U.S. EPA’s Chemical Accident Prevention RMP Rule Updates under the Clean Air Act.”

Panelists:

- *David A. Lyder, Alberta Environment and Protected Areas 495*
- *Lulu Li, Ramboll 505*
- *Jessica Shumlich, Highwood Emissions Management Inc. N/A*
- *Andrew Brought, Spencer Fane LLP N/A*

TECHNICAL SESSIONS – WEDNESDAY

Wednesday, June 26, 2024				
Time	Title	Track	Session	Room
Wednesday AM1				
8:00 am – 9:40 am	Corporate Response to Carbon Disclosure Mandates	MINI/SUST	panel	Glen 201-202
8:00 am – 9:40 am	The State of Air Emissions Software from Public Data Collection to AI Use Cases	AQES	panel	Glen 205
8:00 am – 9:40 am	Community Air Monitoring	AQMM	platform	Glen 209
8:00 am – 9:40 am	Wildfire Smoke Emissions, Modeling, and Properties	AQES/AQMM	platform	Glen 206
8:00 am – 9:40 am	Innovative Air Quality Modeling Techniques	AQMO	platform	Glen 203-204
8:00 am – 9:40 am	Recent Events at Government Facilities	REGU	Platform	Macleod E1
8:00 am – 9:40 am	Implications of TSCA Risk Management Rules for Chlorinated Solvents Using Facilities	WAST/REGU	panel	Macleod E4
9:40 am – 10:10 am	Session Break			Exhibit Hall
Wednesday AM2				
10:10 am – 11:50 am	Organizational Decarbonization in Support of a Systemic Energy Transition	MINI/CLIM/INDU	panel	Glen 201-202
10:10 am – 11:50 am	Air Pollution Control: VOCs	AQCT	platform	Glen 205
10:10 am – 11:50 am	Methane Monitoring Technologies	AQMM/CLIM	platform	Glen 209
10:10 am – 11:50 am	Particulate Matter and Regional Haze	AQMM	platform	Glen 206
10:10 am – 11:50 am	The Winding Road of Environmental Justice in Air Permitting	EJUS/REGU	panel	Glen 203-204
10:10 am – 11:50 am	Title V Implementation Significant Issues and Challenges	REGU	panel	Macleod E3
10:10 am – 11:50 am	PFAS Air and Life Cycle Issues	SUST/WAST	platform	Macleod E4
10:10 am – 11:50 am	Vehicle Emission Inventories and Measurements	TRAN/AQES	platform	Macleod E2
10:10 am – 11:50 am	How Does It Work? Transition to Sustainable Energy	YPRO/SUST/INDU	panel	Macleod E1
11:55 am – 1:15 pm	TCC Meetings			See page 19
Wednesday PM1				
1:30 pm – 3:10 pm	Circular Economy Actions - Progress and the Way Forward	MINI/SUST	panel	Glen 201-202
1:30 pm – 3:10 pm	Emissions for Point and Non-Point Sources, Part 1	AQES	platform	Glen 205
1:30 pm – 3:10 pm	Case Studies in Air Quality Monitoring	AQMM	platform	Glen 209
1:30 pm – 3:10 pm	Emerging Trends and Equity in Climate Action Planning	CLIM	panel	Macleod E3
1:30 pm – 3:10 pm	Environmental Justice Assessment - Planning and Health	EJUS/H&EE	platform	Glen 203-204
1:30 pm – 3:10 pm	The Clean Air Strategic Alliance: Insights from Using Multi-Stakeholder Collaborative Decision-Making for Air Policy Development in Alberta	CLIM/REGU	panel	Glen 206
1:30 pm – 3:10 pm	Transportation Greenhouse Gas Emissions Reductions and Strategies	TRAN/CLIM	platform	Macleod E2
1:30 pm – 3:10 pm	PFAS Treatment and Landfills	WAST	platform	Macleod E4
1:30 pm – 3:10 pm	How Does It Work? Carbon Sequestration	YPRO/CLIM	panel	Macleod E1
Wednesday PM2				
3:30 pm – 5:30 pm	PFAS: Regulatory Developments and Measurement Methods	MINI/WAST	platform	Glen 201-202
3:30 pm – 5:30 pm	Air Quality Measurements in Developing Countries	AQMM	platform	Glen 209
3:30 pm – 5:30 pm	Photochemical Grid Modeling	AQMO	platform	Glen 206
3:30 pm – 5:30 pm	Greenhouse Gas Emissions and Reporting Programs	CLIM	platform	Macleod E3
3:30 pm – 5:30 pm	Air Permitting Developments and Case Studies	REGU	platform	Glen 205
3:30 pm – 5:30 pm	International Environmental Trade Opportunities and the Way Forward	REGU	panel	Glen 203-204
3:30 pm – 5:30 pm	Sustainability Case Studies and Tools	SUST	platform	Macleod E2
3:30 pm – 5:30 pm	Waste Management and Resource Recovery	WAST	platform	Macleod E4
3:30 pm – 5:30 pm	How Does It Work? Hydrogen Uses and Challenges	YPRO/CLIM/INDU	panel	Macleod E1

TECHNICAL SESSIONS – WEDNESDAY

Corporate Response to Carbon Disclosure Mandates

Track: MINI/SUST
6/26/2024, 8:00 AM
Room: Glen 201-202

Panel – TCC: SUS

Chair: Ram Ramanan, Impact Edge Inc. **N/A**

This panel will provide a general overview of the carbon disclosure and other ESG metrics mandates with a global perspective and how best the corporations are preparing to do so. This session is proposed to feature speakers who represent different aspects of approaches, data collection, validation, compliance, and strategies to accomplish transition. This panel will be geared towards practitioners and professionals and will highlight challenges of sustainability management. The panel will conclude with open discussions and Q&A which will provide attendees to interact with the panel members. The attendee should walk away with a general understanding of the sustainability management – strategy, excellence and compliance approaches using technologies and best practices.

Panelists:

- Jennifer Routhier, AECOM **N/A**
- Shannon S. Broome, Hunton Andrews Kurth LLP **N/A**
- Evan Bruner, dss+ **N/A**

The State of Air Emissions Software from Public Data Collection to AI Use Cases

Track: AQES
6/26/2024, 8:00 AM
Room: Glen 205

Panel – TCC: AAE

Chair: Ryan Janoch, Mapistry **N/A**

From community monitoring to enhanced public access to emissions data to AI being hailed as a panacea, industrial operations are being bombarded with opportunities and threats via technology. The air emissions data they generate, the public generates, and that regulators can access presents new avenues for savvy environmental leaders to differentiate their decision-making. However, leaders need to sort through what are the tools that can set them ahead. Should they invest in AI software? However, what are the limitations? Should their company be concerned about third-party groups or regulator monitoring networks? Where should they invest to proactively defend against erroneous citizen scientists or where should they work with them? These topics will be explored by panelists to give environmental leaders a holistic look at the state of air emissions technology today and a framework for building a strategic program.

Panelists:

- Jiayi Fang, Applied Particle Technology **N/A**
- Premal Vora, Alliance Technical Group **N/A**

Community Air Monitoring

Track: AQMM
6/26/2024, 8:00 AM
Room: Glen 209

Platform – TCC: AAM

Chair: Doug Dziubla, ERM, Inc.

Co-Chair: Alexandria Price, Formation Environmental

8:00 AM

Community Monitoring in the District of Columbia: Analysis of “Low-Cost” Sensor Effectiveness **N/A**

Paper #1701858

Kane D. Samuel, Joseph D. Jakuta, District of Columbia Department of Energy and Environment

8:20 AM

Performance Evaluation of Sensor-Based Air Quality Monitoring System and Application for AQHI Measurement in Alberta **513**

Paper #1679798

Zheng Yang, Alberta Environment and Protected Areas

8:40 AM

Comparing Purple Air/Plantower to Measured Number Concentration Size Distributions **523**

Paper #1711573

William Malm, Derek Day, Russel Perkins, Amy Sullivan, Colorado State University; Anthony J. Prenni, Bret A. Schichtel, National Park Service; Mark Tigges, Air Resource Specialist

9:00 AM

Using Hyperlocal Mobile Air Quality Monitoring in Historically Overburdened by Air Pollution in the District of Columbia **538**

Paper #1701862

Joseph D. Jakuta, Hannah Ashenafi, District of Columbia Department of Energy and Environment; Aja Ellis, Rishabh Shah, Tongshu Zheng, Aclima, Inc.

Wildfire Smoke Emissions, Modeling, and Properties

Track: AQES/AQMM
6/26/2024, 8:00 AM
Room: Glen 206

Platform – TCC: APV

Chair: Bonne J. Ford, Cooperative Institute for Research in the Atmosphere (CIARA) Colorado State University

Co-Chair: Bret A. Schichtel, D.Sc - National Park Service-Air Resource Division

8:00 AM

BlueSky Canada - A Wildfire Smoke Forecasting System: Successes and Challenges **549**

Paper #1699031

David A. Lyder, Alberta Environment and Protected Areas

8:20 AM

Field Measurements of Smoke Emissions from Urban and Wildland Fuels **N/A**

Paper #1701239

Christian M. Carrico, John R. Himes, New Mexico Institute of Mining and Technology; Manvendra Dubey, James E. Lee, Alexander Josephson, Jon Reisner, Los Alamos National Laboratory

8:40 AM

Estimates of Air Emissions from Wildfires and Reduction Strategies **562**

Paper #1657520

Paresh Thanawala, 2020 Environmental Solutions

TECHNICAL SESSIONS – WEDNESDAY

Innovative Air Quality Modeling Techniques

Track: AQMO
6/26/2024, 8:00 AM
Room: Glen 203-204

Platform – TCC: APM

Chair: Sergio Guerra, Colorado Department of Public Health and Environment

Co-Chair: Michael T. Hammer, Lakes Environmental Software

8:00 AM

AERMOD: Tips and Tricks for When a Model Doesn't Pass 571

Paper #1706819

Robynn Andracssek, Providence Engineering and Environmental Group LLC

8:20 AM

Applying the Ambient Ratio Method to Sites in the Prairies 588

Paper #1689022

Dennis C. Fudge, CPANS

8:40 AM

Mine Pit Dewatering: Spray Evaporation and Impacts to Air Emissions and Environmental Permitting 598

Paper #1694980

Daniel R. Guido, Ashley Kung, ERM

9:00 AM

Evaluation with Permitting Inputs of the NO2 2014 Colorado Oil and Gas Drill Rig Field Study N/A

Paper #1745333

Sergio Guerra, Jennifer Turk, Vinay Kumar, Miriam Hacker, Colorado Department of Public Health and Environment

Recent Events at Government Facilities

Track: REGU
6/26/2024, 8:00 AM
Room: Macleod E1

Platform – TCC: GOV

Chair: Roger L. Wayson, AECOM

8:00 AM

Emissions and Dispersion from Rocket Launches N/A

Paper #1711159

Roger L. Wayson, AECOM

8:20 AM

Managing State Toxic Lists and Pollutant Reporting at Enterprise Level 609

Paper #1709066

Julie Wallace, Roger L. Wayson, AECOM

8:40 AM

AF Oil Analysis Failure Root Cause N/A

Paper #1709383

David J. Sanders, Roger L. Wayson, AECOM

9:00 AM

CoURAGE! An Atmospheric Campaign to Advance our Understanding of Urban Climate and Air Quality in Complex Regional Environments N/A

Paper #1698456

Kenneth J. Davis, Kelly Lombardo, John Peters, The Pennsylvania State University; Benjamin Zaitchik, Peter DeCarlo, Johns Hopkins University; Christopher Boxe, Howard University; Belay Demoz, University of Maryland Baltimore County; Jorge Gonzalez-Cruz, University at Albany; Xiaowen Li, Morgan State University; Dev Niyogi, University of Texas

9:20 AM

Drake Landing Low Carbon Solar Community 616

Paper #1659606

Klym Bolechowsky, ClearSky Engineering Inc.

Implications of TSCA Risk Management Rules for Chlorinated Solvents Using Facilities

Track: WAST/REGU

6/26/2024, 8:00 AM

Room: Macleod E4

Panel – TCC: WMR

Chair: Christopher C. Lutes, Jacobs Solutions **N/A**

Co-Chair: David Gillay, Barnes & Thornburg LLP **N/A**

For at least four key solvents, i.e., carbon tetrachloride, methylene chloride, perchloroethylene (PCE) and trichloroethylene (TCE), EPA proposed rules in 2023 will lead to TSCA being used in situations where OSHA or RCRA was previously the primary authority. With regard to vapor intrusion of soil gas, EPA has historically deferred to OSHA to regulate solvents in the workplace, unless they were entering into the building from a release to soil and groundwater. But under recently proposed rules EPA is proposing bans for many applications of chlorinated solvents currently used in the workplace. EPA is also setting existing chemical exposure limits in indoor air in workplaces many orders of magnitude below those previously set by OSHA. This panel will begin with an overview of the proposed rules and then discuss these questions with particular attention to overlaps with RCRA and OSHA requirements.

Organizational Decarbonization in Support of a Systemic Energy Transition

Track: MINI/CLIM/INDU

6/26/2024, 10:10 AM

Room: Glen 201-202

Panel – TCC: CCP/LHC

Chair: Jennifer Routhier, AECOM **N/A**

Organizational level decarbonization planning supports the energy transition. In Canada, there are new and emerging regulations and stakeholder expectations that are accelerating the pace with which organizations are deepening their focus on decarbonization. However, many organizations still struggle with managing current operational demands with the longer-term strategic thinking and capital planning necessary to envision a future operational state, supported by yet-to-be development technologies. Despite real or perceived barriers, organizations are developing long-term, tailored energy plans and business transformation models to support their own decarbonization. Comparing experiences with organizations across various sectors will provide a Canada-centric narrative around the prevalent headwinds and tailwinds for decarbonization. Panelists will explore specific examples of organization decarbonization planning

TECHNICAL SESSIONS – WEDNESDAY

which will be discussed within the context of emergent industry and policy trends to provide an understanding of how competing forces may ultimately be resolved in pursuit of the energy transition.

Panelists:

- Marie-José Croonen, AECOM Canada Ltd. **N/A**
- Monica Curtis, Pembina Institute **N/A**
- William Smith, Terrestrial Energy **N/A**
- Dick Ebersohn, City of Calgary **N/A**
- Kris Frederickson, Keyera **N/A**

Air Pollution Control: VOCs

Track: AQCT

6/26/2024, 10:10 AM

Room: Glen 205

Platform – TCC: AAC

Chair: Masoud Jahandar Lashaki, Florida Atlantic University

Co-Chair: Ryan Thomas, SCS Engineers

10:10 AM

Reaction Kinetics of Commercial Activated Carbon in Variable Pressure Adsorption of High Compound VOCs **N/A**

Paper #1698410

Chiu-Hsuan Lee, Chaoyan University of Technology; Yun-Jie Lu, Kun-Cheng Lin, Qiao-Yin Tsai, Pei-Xuan Li, Chiu-Chuan Chen, Yu-Zhen Chen, N Je-Lueng Shie, National Ilan University; Min-Hao Yuan, China Medical University; Yi-Hung Chen, National Taipei University of Technology; Ching-Yuan Chang, National Taiwan University

10:30 AM

Modeling the Effect of Structural Parameters of Honeycomb Adsorbents on VOC Adsorption **627**

Paper #1698535

Sina Esfandiar Pour, Alireza Haghighat Mamaghani, Zaher Hashisho, University of Alberta; David Crompton, Hilda Arellano, James E. Anderson, Ford Motor Company

10:50 AM

Tailoring Electrical Conductivity of HKUST-1 for Adsorption and Electrothermal Desorption Applications **634**

Paper #1702649

Sina Neshati, Zaher Hashisho, University of Alberta

11:10 AM

Biological Treatment of Benzene Air Emissions from Industrial Facilities – A Case Study **645**

Paper #1711721

Matthew E. Johnson, Louis D. le Roux, BioAir Solutions

Methane Monitoring Technologies

Track: AQMM/CLIM

6/26/2024, 10:10 AM

Room: Glen 209

Platform – TCC: AAM

Chair: Doug Dziubla, ERM, Inc.

Co-Chair: Alexandria Price, Formation Environmental

10:10 AM

From Measurement to Quantification: Past, Present, and Future of Fugitive Methane Emissions Mitigation from Oil & Gas and Landfills **N/A**

Paper #1698960

Ali Lashgari, Project Canary, PBC

10:30 AM

Evaluation of Diffuse Methane Concentrations from Landfills and Wetlands Using Ground-Based, Long-Wave Hyperspectral Imaging **657**

Paper #1698864

Nishant Sriram Narayanan, Paule Lapeyre, Maria Strack, Tonya DelSontro, Laura Hug, Kyle Daun, University of Waterloo

10:50 AM

Hyperspectral Airborne Methane Quantification and Detection Over the Long-Wavelength Infrared (lwir) Spectrum **N/A**

Paper #1702538

Nishant Sriram Narayanan, Paule Lapeyre, Kyle Daun, University of Waterloo; Martin Chamberland, Marc-André Albert, Telops Inc.; Jim Cormack, LSI Inc.

11:10 AM

A MOx Sensor-Based Instrument for Fenceline and Ambient Methane Monitoring **663**

Paper #1696714

Geoff Henshaw, Anna Farquhar, Matt Walbran, Aeroqual

11:30 AM

The Role and Effectiveness of High-Resolution Satellites to Detect and Quantify Methane from Landfill Facilities Worldwide **673**

Paper #2738808

Dan Foley, Krishna Kataria, GHGSat

Particulate Matter and Regional Haze

Track: AQMM

6/26/2024, 10:10 AM

Room: Glen 206

Platform – TCC: APV

Chair: Bret A. Schichtel, National Park Service-Air Resource Division

Co-Chair: Bonne J. Ford, Cooperative Institute for Research in the Atmosphere (CIRA) Colorado State University

10:10 AM

Impact of Dust on Ambient Air Quality in an Arid Environment **N/A**

Paper #1698404

Imran Shahid, Academic, Qatar University

10:30 AM

Influences of Ship Emissions from an Asian Seaport on Ambient PM2.5 of Nearby Metropolitan Area: Field Sampling and Model Simulation **N/A**

Paper #1698000

Yu-Lun Tseng, Chung-Shin Yuan, Kuo-Cheng Lo, Po-Hsuan Yen, National Sun Yat-sen University; Chitsan Lin, Chia-Wei Lee, National Kaohsiung University of Science and Technology

TECHNICAL SESSIONS – WEDNESDAY

10:50 AM

Long-Term Trends in Seasonal Mean Speciated Aerosol Composition in Remote Areas of the United States N/A

Paper #1701810

Jenny L. Hand, Colorado State University; Anthony J. Prenni, Bret A. Schichtel, National Park Service

11:10 AM

Analysis and Updates to the IMPROVE Equations for Estimating Light Extinction N/A

Paper #1701248

Bonne J. Ford, Scott Copeland, Jenny L. Hand, William Malm, Colorado State University; Anthony J. Prenni, Bret A. Schichtel, National Park Service

11:30 AM

Comparing Five Integrating Nephelometers N/A

Paper #1704367

William Malm, Russel Perkins, Amy Sullivan, Colorado State University; Anthony J. Prenni, Bret A. Schichtel, National Park Service; Mark Tigges, Air Resource Specialist

The Winding Road of Environmental Justice in Air Permitting

Track: EJUS/REGU

6/26/2024, 10:10 AM

Room: Glen 203-204

Panel – ITF: EJS

Chair: Sergio Guerra, Colorado Department of Public Health and Environment **N/A**

Co-Chair: George J. Schewe, Trinity Consultants **N/A**

The U.S. Environmental Protection Agency (EPA) has prioritized Environmental Justice (EJ) considerations in air permitting as part of a broader agenda from the Biden administration. The goal is to use the federal civil rights laws and all available authorities to address EJ issues. However, the roll out of these newly found authorities has faced increased scrutiny and legal challenges. Courts have weighed in and decreed that EJ concerns, by themselves, are not enough of a reason to deny an air permit. Recent court cases have also noted that EPA lacks statutory authority to make some of the sweeping changes it had hope to implement. Despite the courts' rebuke of EPA's broad authority to implement EJ in air permitting, many states continue to push forward with the development of their own EJ programs in air permitting through policies and rulemaking. This panel will explore the current status of EJ considerations in air permitting and share examples from regulatory agencies who have taken the lead in this arena.

Panelists:

- Joe Pere, INTERA Incorporated **N/A**
- Sergio Guerra, Colorado Department of Public Health and Environment **N/A**
- George J. Schewe, Trinity Consultants **N/A**
- Adam Driscoll, Barr Engineering Company **681**

Title V Implementation Significant Issues and Challenges

Track: REGU

6/26/2024, 10:10 AM

Room: Macleod E3

Panel – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc. **N/A**

The Title V Program has been in place for over two decades. A Title V (or Part 70) Operating permit incorporates all applicable requirements for a source and establishes requirements for compliance certification. This requirement creates significant obligation on part of the source owners and operators to ensure that they can certify compliance with all the requirements in their Title V permit. In addition, modifications and renewals of Title V permit can create significant issues and opportunity for objection by or petition to the U.S. EPA Administrator. The objection process can create uncertainty regarding historical new source review actions. Recently, EPA has also attempted address environmental justice issues during a Title V Permit development and review process. EPA also issued a new 'applicable requirements' rulemaking to codify the criteria for petition process. A panel of experts will address significant issues and challenges observed in implementation of Title V program.

Panelists:

- Gurinder Saini, RTP Environmental Associates, Inc. **688**
- Tony Schroeder, Trinity Consultants **695**
- Brandon Curtis, Hiser Joy **706**

PFAS Air and Life Cycle Issues

Track: SUST/WAST

6/26/2024, 10:10 AM

Room: Macleod E4

Platform – TCC: SRC/WMR

Chair: Mingming Lu, University of Cincinnati

Co-Chair: Christopher C. Lutes, Jacobs Solutions

10:10 AM

Sustainable Waste Management and Carbon Emission Reductions for PFAS Treatment Systems: A Life Cycle Assessment Approach 715

Paper #1699025

Margarida Goncalves, Elizabeth M. Carson, Mushtaque Ahmad, Alexander Fischer, Jessica Gattenby, Arcadis

10:30 AM

PFAS Emissions from Landfills N/A

Paper #1701853

Stephen Zemba, Sanborn, Head & Associates; Florentino de la Cruz, University of North Florida; Raju Badireddy, University of Vermont

10:50 AM

Controlling PFAS in the Gaseous Phase – Challenges and Lessons Learned 722

Paper #1696479

Mark P. DiPrinzio, Richard Wohaska, ERM, Inc.

TECHNICAL SESSIONS – WEDNESDAY

11:10 AM

Modern Data Science for Emerging Pollutants: Leveraging Unsupervised Machine Learning Methods in Identifying PFAS Signatures 728

Paper #1683213

Kyong Song, Barr Engineering

11:30 AM

Per- and Polyfluoroalkyl Substances – The Importance of Covert Exposures from Air and Dust 735

Paper #1698135

Karen Phillips, Instrinsic

Vehicle Emission Inventories and Measurements

Track: TRAN/AQES

6/26/2024, 10:10 AM

Room: Macleod E2

Platform – TCC: OMS

Chair: Robert C. Mentzer, Jr., HMMH

Co-Chair: Roger L. Wayson, AECOM

10:10 AM

Development of Nonpoint Air and Rail Inventories Using Web-Scraped Activity Data in the District of Columbia N/A

Paper #1699101

Joseph D. Jakuta, Monae Scott, District of Columbia Department of Energy and Environment

10:30 AM

An Investigation of the Impact of Transport Infrastructure and Agriculture on Environmental Degradation, Evidence from Top Five Most Populous Countries N/A

Paper #1692102

Arshad Ali, Northeast Agricultural University

10:50 AM

Applying Real-Time On-Board Emissions Measurements and GIS Data to Evaluate the Applicability of AIS-based Emissions Inventory Estimates of Ocean-Going Vessels N/A

Paper #1698712

Ryan W. Drover, Thomas W. Eckel, Wayne Miller, David R. Cocker, III, University of California, Riverside

11:10 AM

Roadside Optical Vehicle Emissions Reporter III: Measuring Emissions from Alberta's In-use On-road Light- and Heavy-Duty Vehicles 745

Paper #1697661

Niranjan Vescio, Opus Inspection, Inc.; Robert Klausmeier, de la Torre Klausmeier Consulting, Inc.

How Does It Work? Transition to Sustainable Energy

Track: YPRO/SUST/INDU

6/26/2024, 10:10 AM

Room: Macleod E1

Panel – TCC: PWR

Chair: Lindsay Salvador, ALL4 LLC N/A

Co-Chair: Fiona Jiang, Ramboll N/A

This panel will provide a general overview of the methods that various industries are enacting to transition to sustainable energy. This session is proposed to feature speakers who represent different industries to provide perspective and discuss new technologies and challenges associated with sustainable energy. This panel will be geared towards young professionals and will highlight sustainable energy trends across a multitude of local, state, and federal regulations, industries, and best practices. The panel will conclude with open discussions and Q&A which will provide students and YPs to interact with the panel members. 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 sustainable energy trends, technologies, and challenges.

Panelists:

- Ram Ramanan, Impact Edge Inc. N/A
- Sally Cummins, Montrose Environmental Group 759
- Debbie Kovacs, SLR Consulting 772

Circular Economy Actions - Progress and The Way Forward

Track: MINI/SUST

6/26/2024, 1:30 PM

Room: Glen 201-202

Panel – TCC: SRC

Chair: Chih C. Chao, Cantech Environmental 779

Co-Chair: Mingming Lu, University of Cincinnati N/A

Circular economy actions are taken in various countries as an effective measure to sustain economic growth while conserving the environment we live in and the natural resources we depend on to make our life needs meet. This panel will showcase circular economy practices in a variety of industrial and business sectors, including: Li-ion battery recycling, transportation, logistics, materials, chemicals, regulations and standards, life cycle analysis, etc. Illustrations of approaches, progress and outcomes of respective cases will be given by panelists. The way forward will also be addressed by each panelist, to share individual viewpoints with a view of converging the practices into a region- or country-wide program of sustainable development.

Panelists:

- Rebecca Hensley, CSX Transportation, Inc. N/A
- Qingshi Tu, University of British Columbia 790
- Samuel A. Vigil, California Polytechnic State University, San Luis Obispo 804
- Troy Hawkins, Argonne National Laboratory 814

Emissions for Point and Non-Point Sources (Part 1)

Track: AQES

6/26/2024, 1:30 PM

Room: Glen 205

Platform – TCC: AAE

Chair: Ryan W. Drover, University of California, Riverside

Co-Chair: Fernando Millán-Vázquez, Sr., Autonomous Metropolitan University

TECHNICAL SESSIONS – WEDNESDAY

1:30 PM

Case Studies in the Field for Demonstrating Methodologies for Mitigating Wind Blown Dust in an Arid Desert Environment N/A

Paper #1696015

Rob J. Farber, Atmospheric Clarity

1:50 PM

Methodology for Upstream Fermentation HAP Air Emissions Concentrations 828

Paper #1702435

Mahyar Mahdavi Hezaveh, Bruce I. Dvorak, University of Nebraska-Lincoln; Ashraf Aly Hassan, Manisha S. Kothari, United Arab Emirates University

2:10 PM

Development of a UAV-Based Methodology for Flare Combustion Efficiency Measurements 833

Paper #1702481

Simon A. Festa-Bianchet, Milad Mohammadi, Alexis D. Tanner, Matthew R. Johnson, Energy & Emissions Research Lab (EERL) - Carleton University; Brian Crosland, Natural Resources Canada; Gregory A. Kopp, Western University

2:30 PM

In-Situ Measurements of Methane Emissions in Combustion Exhausts at Oil and Gas Facilities N/A

Paper #1702491

Milad Mohammadi, Simon A. Festa-Bianchet, David R. Tyner, Matthew R. Johnson, Energy & Emissions Research Lab (EERL) - Carleton University

2:50 PM

A Control Measures Data Tool to Help Estimate Emissions Reductions and Costs Associated with Control Strategies in Alberta 842

Paper #1702554

Sheila Lucas, Ehimai Ohiozebau, Rebecca Tasko, Government of Alberta; Ron Chapman, Trudi Trask, RWDI AIR Inc.

Case Studies in Air Quality Monitoring

Track: AQMM

6/26/2024, 1:30 PM

Room: Glen 209

Platform – TCC: AAM

Chair: Andres Soux, ERM Consultants Canada Ltd.

Co-Chair: Doug Dziubla, ERM, Inc.

1:30 PM

Planning and Operation of Ambient Monitoring Stations N/A

Paper #1705201

Jodi Lee, Jacobs Engineering

1:50 PM

Air Quality Around Major Construction Projects in Denver: Best Management Practices Validated with Project Specific Air Monitoring N/A

Paper #1703509

Gregg W. Thomas, Denver Department of Public Health and Environment

2:10 PM

Incorporating Novel Measurement Methodology into the Design and Operation of an Ambient Air Quality Network for a Large Industrial Project N/A

Paper #1698971

David Chadder, RWDI AIR Inc.

2:30 PM

A Multidisciplinary Approach to Crystalline Silica Management in the Mining Industry – Case Study N/A

Paper #1697909

David Giard, BBA

2:50 PM

Real-Time On-Road Testing of a New Spectroscopic Nitrogen Dioxide-Nitric Oxide Instrument in Washington, DC N/A

Paper #1701794

Charles Odame-Ankrah, Kelly N. Pickrell; Brian Rosentreter, Matthew Nordstrom, Global Analyzer Systems; Xinrong Ren, Phillip Stratton, NOAA Air Resources Laboratory

Emerging Trends and Equity in Climate Action Planning

Track: CLIM

6/26/2024, 1:30 PM

Room: Macleod E3

Panel – TCC: CCI

Chair: Christopher D. Easter, Bay Area Air Quality Management District N/A

This panel will provide a forum for different perspectives on developing climate action plans (CAPs). While CAPs have been focused primarily on municipalities, there is now a trend towards regional climate planning and partnerships across jurisdictions. Also, as it has become clear that climate impacts (sea-level rise, extreme heat events and other significant impacts) are disproportionately affecting overburdened communities, new programs promote climate planning with an equity lens. Underlying these trends are innovative design and engineering leading to accelerated implementation of climate mitigation strategies and infrastructure. The \$5 Billion US EPA Climate Pollution Reduction Grant program, authorized under the Inflation Reduction Act, has provided the largest source of funding for CAPs and climate projects in history and is creating opportunities for communities and regions to implement sustainable solutions for reducing impacts from a changing climate. Speakers will represent different geographic scopes of climate planning and address a variety of key issues related to comprehensive, equity-focused CAPs.

Panelists:

- Michael Slavick, EnSafe Inc. 853
- Monte DiPalma, Bay Area Air Quality Management District 859
- Brittany D. Tran, City of Calgary N/A

Environmental Justice Assessment - Planning and Health

Track: EJUS/H&EE

6/26/2024, 1:30 PM

Room: Glen 203-204

Platform – ITF: EJS

Chair: Thomas Morahan, egrounpygeology

TECHNICAL SESSIONS – WEDNESDAY

1:30 PM

Community-Driven Clean Air: A Collaborative Blueprint for Emission Reductions Planning in Imperial County N/A

Paper #1712042

Sheetal Madnani, Alek van Houghton, Emily A. Weissinger, Scott Weaver, Ramboll

1:50 PM

Data-Driven Environmental Justice: Preparing the Ground for Derisked Strategies and Improved Community Benefits 866

Paper #1709892

Will Bohlender, Ramboll

2:10 PM

Environmental Justice Impacts of COVID-19 Mitigation Strategies on the Health of Elementary School Students in South Carolina, United States 883

Paper #1702698

Lesley S. Joseph, Shamia Hoque, University of South Carolina

2:30 PM

Examining the Disparities in Landfill Siting in South Carolina, United States: An Environmental Justice Analysis N/A

Paper #1698525

Lesley S. Joseph, University of South Carolina; Sara Kamanmalek, Florida State University

2:50 PM

Hitting a Moving Target from a Shifting Foundation or Following Chicago's EJ Framework as it Evolves Along a Project's Timeline 903

Paper #1712028

Brendan Farnham, Jim Powell, V3; Andrew Dorn, ITW; Garth Daley, EDI

The Clean Air Strategic Alliance: Insights from Using Multi-Stakeholder Collaborative Decision-Making for Air Policy Development in Alberta

Track: CLIM/REGU

6/26/2024, 1:30 PM

Room: Glen 206

Panel – TCC: CCI

Chair: Andre Asselin, Clean Air Strategic Alliance N/A

Since 1994, the Clean Air Strategic Alliance (CASA), a consensus-based multi-stakeholder partnership, has been bringing together people and organizations to address air quality issues in Alberta. A panel with representatives from CASA member organizations will provide an overview of the benefits of this model and how it has been applied to air quality challenges in Alberta, highlighting specific projects and their outcomes while providing insights into the successes and challenges faced. Example projects will include: CASA's development of air management frameworks to provide guidance and structure on air quality issues; improving understanding of and providing recommendations to better manage non-point source emissions; investigating the impact of reduced transportation on air quality due to public health restrictions associated with COVID-19; and measuring actual in-use on-road vehicle emissions and developing recommendations to reduce transportation sector emissions.

Panelists:

- Rob Hoffman, Canadian Fuels Association N/A
- Beverly Yee, Government of Alberta, Retired N/A
- Ruth Yanor, Mewassin Community Council N/A
- Holly Johnson-Rattlesnake, Samson Cree Nation N/A
- Chris Severson-Baker, Pembina Institute N/A

Transportation Greenhouse Gas Emissions Reductions and Strategies

Track: TRAN/CLIM

6/26/2024, 1:30 PM

Room: Macleod E2

Platform – TCC: PLU

Chair: Roger L. Wayson, AECOM

Co-Chair: Robert C. Mentzer, HMMH

1:30 PM

Electric Vehicle 2023-2024 Headlines and Trends 913

Paper #1700202

Merlyn L. Hough, University of Portland

1:50 PM

Reduction of Atmospheric Emissions by 2050 Due to the Use of Electric Cars in the Metropolitan Area of Mexico City 931

Paper #1685057

Rodolfo Sosa-Echeverría, Institute of Atmospheric Sciences and Climate Change; Graciela Velasco Herrera, Pablo Sanchez Alvarez, Elias Granados Hernandez, Gilberto Fuentes Garcia, Rogelio Gonzalez Oropeza, Rogelio Gonzalez Oropeza, William Vicente Rodriguez, Universidad Nacional Autónoma de México

2:10 PM

Lifecycle Analysis of Cost and Greenhouse Gas Emissions of Light-Duty Vehicles via Open-Source Tools and Public Datasets 947

Paper #1692720

Karim Hamza, Kenneth P. Laberteaux, Toyota Motor North America

2:30 PM

Revvig Up Transportation Sustainability: Carbon Emissions Reduction Calculator 962

Paper #1700212

Jacob P. Ward, Allie C. Moss, Megan Schlosser, Melissa Harclerode, CDM Smith

PFAS Treatment and Landfills

Track: WAST

6/26/2024, 1:30 PM

Room: Macleod E4

Platform – TCC: WMR

Chair: Christopher C. Lutes, Jacobs Solutions

Co-Chair: Paul Ruehl, Geocycle North America

1:30 PM

A Preliminary Study of Thermal Mineralization of a Low-Cost Biomass-Based PFAS Absorbent N/A

Paper #1711675

Mingming Lu, Joshua P. Pridemore, University of Cincinnati

TECHNICAL SESSIONS – WEDNESDAY

1:50 PM

PFAS Encapsulation in Soil N/A

Paper #1680833

Paul Ruehl, Geocycle North America

2:10 PM

PFAS Encapsulation in Landfill Leachate/Groundwater N/A

Paper #1680993

Paul Ruehl, Geocycle North America

2:30 PM

PFAS Leachate Treatment and Waste Concentrate Management Strategy N/A

Paper #1702635

Lingke Zeng, Stephen Zemba, Sanborn, Head & Associates

How Does It Work? Carbon Sequestration

Track: YPRO/CLIM

6/26/2024, 1:30 PM

Room: Macleod E1

Panel – TCC: AAC/LHC

Chair: Stephanie Taylor, SCS Engineers **N/A**

This panel will provide a general overview of carbon capture and sequestration from a variety of perspectives. This session is proposed to feature speakers who can explain different methods of carbon capture and sequestration. In addition, panelists will provide an overview of the methods and discuss common air and waste considerations for each type. The panel will be geared toward young professionals and will highlight air, water, and waste topics across a multitude of local, state/provincial, and federal regulations. The panel will conclude with open discussions and Q&A which will provide students and YPs to interact with the panel members. This is a great introductory panel presentation for all attendees but is focused on reaching the student/young professional attendees. The attendees should walk away with a general understanding of the carbon sequestration methods discussed and the environmental challenges each faces.

Panelists:

- *Farbod Sharif, InnoTech Alberta* **974**
- *Kyle Hofstetter, Carbon Corp.* **992**
- *Carrie Ridley, SCS Engineers* **998**
- *Maurice Shevalier, Matrix Solutions, Inc.* **1013**

PFAS: Regulatory Developments and Measurement Methods

Track: MINI/ WAST

6/26/2024, 3:30 PM

Room: Glen 201-201

Platform – TCC: WMR/LHC

Chair: David Lloyd, FREDsense Technologies

Co-Chair: Cecilia Quintana Baez, Barr Engineering Company

3:30 PM

2024 Update - PFAS Multimedia Regulatory Developments in the United States and Canada **1022**

Paper #1696208

Adam Driscoll, Cecilia Quintana Baez, Barr Engineering Company

3:50 PM

PFAS in Canada: A Legal Perspective on the “Forever Chemicals” – Laws, Guidelines, and Practical Considerations **1033**

Paper #1696660

Jacquelyn Stevens, Willms & Shier Environmental Lawyers LLP

4:10 PM

Demonstrating Compliance with Proposed Air Emission Limitations for PFAS: A Case Study Using AERMOD **N/A**

Paper #1712067

Jennifer Beaulieu, Woodard & Curran

4:30 PM

PFAS: Regulatory Advancements and Lessons Learned on Assessment, Delineation and Data Interpretation **1050**

Paper #1697708

Nikki Hilker, SLR Consulting (Canada) Ltd.

4:50 PM

Characterization of PFAS in the Environment Steering Through Different Techniques and Methods **1063**

Paper #1702522

Egemen Aydin, Desiree Hui, AGAT Laboratories

5:10 PM

Rapid and Portable PFAS Screening with Novel Polymer-Based Sensor **N/A**

Paper #1738070

David Lloyd, Julia Gugueniat, Emily Hicks, Robert Mayall, FREDsense Technologies

Air Quality Measurements in Developing Countries

Track: AQMM

6/26/2024, 3:30 PM

Room: Glen 209

Platform – TCC: AAM

Chair: Doug Dziubla, ERM, Inc.

Co-Chair: Alexandria Price, Formation Environmental

3:30 PM

Supporting Indian Cities in Their Efforts to Meet the Air Quality Standards **1077**

Paper #1712182

Prakash Doraiswamy, Sree Kumar Kumaraswamy, Bhavay Sharma, Ritesh Kumar, Sanjar Ali, Vandana Tyagi, Azra Khan, Prayash Giria, Virabh Lad, Harshavardhan Bholte, Prateek Sengupta, WRI India

3:50 PM

Comprehensive Assessment of Ship Emissions, Meteorology and Air Quality Using Random Forest Approach for the Port of Veracruz, Mexico **1094**

Paper #1695681

Rafael Esteban Antonio Duran, Gilberto Fuentes García, Enrique Cesar Valdéz, Mauro Cortez-Huerta, Universidad Nacional Autónoma de México; Rodolfo Sosa-Echeverría, Institute of Atmospheric Sciences and Climate Change

TECHNICAL SESSIONS – WEDNESDAY

4:10 PM

Main Findings and Challenges of Wet Atmospheric Deposition Evaluation in Mexico 1107

Paper #1696514

Rodolfo Sosa-Echeverría, Ana Alarcón-Jiménez, Institute of Atmospheric Sciences and Climate Change; Pablo Sanchez Alvarez, Gilberto Fuentes Garcia, Universidad Nacional Autónoma de México; Monica Jaimes Palomera, Secretaria de Medioambiente de la Ciudad de México; David Gay, National Atmospheric Deposition Program; John Walker, United States Environmental Protection Agency

4:30 PM

Source Apportionment of PM2.5 in Mexico City Using CMB and PMF Receptor Modeling 1119

Paper #1702702

Fernando Millán-Vázquez, Sr., Mirella Gutiérrez Arsaluz, Violeta Mugica-Álvarez, Miguel Torres Rodríguez, Brenda L. Valle Hernández, Autonomous Metropolitan University-Azcapotzalco

4:50 PM

A PM2.5 Comprehensive Research in the Central Megalopolis of Mexico: Preliminary Results 1124

Paper ##1738068

Violeta Mugica-Álvarez, Autonomous Metropolitan University-Azcapotzalco

Photochemical Grid Modeling

Track: AQMO

6/26/2024, 3:30 PM

Room: Glen 206

Platform – TCC: APM

Chair: Ralph E. Morris, Ramboll

Co-Chair: Shannon Capps, Drexel University

3:30 PM

Assessing the Value of Each Instrumented CMAQ Model for Addressing Policy Questions N/A

Paper #1701779

Shannon Capps, Jiachen Liu, Drexel University; Kirk Baker, Benjamin Murphy, Sergey Napelenok, United States Environmental Protection Agency; Amir Hakami, Carleton University; Armistead Russell, Georgia Institute of Technology

3:50 PM

Optimization of Meteorological Modeling for Accurate Prediction of Secondary Pollutants in Complex Terrain: A Case Study in Central Chile 1138

Paper #1711604

Valeria P. Campos, Luis A. Díaz-Robles, Diego Chiffelle, Fidel E. Vallejo, Universidad de Santiago de Chile; Francisco Cereceda-Balic, Maria F. Ruggeri, Ximena Fadic, Universidad Técnica Federico Santa María

4:10 PM

Photochemical Modeling for the Denver 2024 Ozone State Implementation Plan for the 2008 Ozone National Ambient Air Quality Standard 1149

Paper #1711982

Ralph E. Morris, Ramboll

4:30 PM

Prototyping Reduced Form Model Using CMAQ-DDM in Alberta for Efficiently Evaluating Various Policy Scenarios 1160

Paper #1711264

Mujtaba Shareef, Scott Heckbert, Alberta Energy Regulator; Sheila Lucas, Government of Alberta; David A. Lyder, Aaron Petty, Alberta Environment and Protected Areas

4:50 PM

US Spatial Patterns of Ammonia Dry Deposition Velocities derived from CMAQ and CAMx Chemical Transport Models N/A

Paper #1704733

Bret A. Schichtel, Michael Barna, National Park Service; Colleen Baublitz, Gregory M. Beachley, John Walker, United States Environmental Protection Agency; Gustavo Cuchiara, Jenny L. Hand, Colorado State University

5:10 PM

WRF-Chem Modelling of Formation of Sulfate and Nitrate from Coal-based Power Plant as a Function of Downwind Distance N/A

Paper #1698779

Mukesh Sharma, Pavan K. Nagar, Indian Institute of Technology Kanpur

Greenhouse Gas Emissions and Reporting Programs

Track: CLIM

6/26/2024, 3:30 PM

Room: Macleod E3

Sponsored by:

Jacobs

Platform – TCC: CCP

Chair: Christopher D. Easter, Bay Area Air Quality Management District

3:30 PM

Area Fugitive Emission Quantification by Flux Chamber and Alternative Method at the Oil Sands Mining Operation 1171

Paper #1711465

Yan Liu, Shan Pletcher, Maggie Scott, John Storey-Bishoff, Government of Alberta

3:50 PM

Defining Scope 3 Reporting Boundaries in Complex Value Chains 1178

Paper #1699042

Bryan Jang, Jennifer Routhier, Elizabeth L. Logan, AECOM

4:10 PM

Untangling Supply Chain Emissions - LCAs as a Tool N/A

Paper #1702609

Mary Pat Campbell, Carolyn Meisner, Jacobs Solutions Inc.

4:30 PM

A Real-World Comparison of the Effectiveness of Regulated OGI Leak Detection and Repair (LDAR) Surveys and Aerial Measurements 1187

Paper #1702497

Shona E. Wilde, David R. Tyner, Bradley M. Conrad, Matthew R. Johnson, Energy & Emissions Research Lab (EERL) at Carleton University

TECHNICAL SESSIONS – WEDNESDAY

4:50 PM

Near-Real Time, High-Precision Basin- and City-Scale Greenhouse Gas Emissions Monitoring N/A

Paper #1698427

Kenneth J. Davis, Zachary R. Barkley, Natasha L. Miles, Scott J. Richardson, The Pennsylvania State University

5:10 PM

Vertically Integrated Greenhouse Gas Measurement Ecosystem: Best Management Practices N/A

Paper #1701249

Joe P. Etheridge, Encino Environmental Services, LLC

Air Permitting Developments and Case Studies

Track: REGU

6/26/2024, 3:30 PM

Room: Glen 205

Platform – TCC: REG

Chair: Piotr Staniaszek, AECOM

3:30 PM

Start Right - Environmental Compliance Strategies for Start-Ups 1197

Paper #1688498

Tausha Fanslau, Panasonic Energy of North America

3:50 PM

USEPA Sets Sights on Unauthorized VOC Emissions from Metal Shredding Industry 1205

Paper #1696582

Jon W. Greene, Civil & Environmental Consultants, Inc.

4:10 PM

A Case Study on Air Permitting under New York State's CLCPA Regulations: RNG Production at a Dairy Farm 1215

Paper #1696720

Jacob Rattay, Civil & Environmental Consultants, Inc.

4:30 PM

Air Permitting Trends: A Survey of Emissions, Regulations, and Emission Control Technologies for Lithium-Ion Battery Production 1223

Paper #1699130

Ryan J. Watkins, Arcadis U.S., Inc.

4:50 PM

Lithium Ion Battery (LIB) Manufacturing: Air Permitting Challenges N/A

Paper #1697633

John Gibbons, Jim Dill, Christy Richardson, Jeff Twaddle, ERM, Inc.

5:10 PM

Non-Modeler's Guide to EPA Air Dispersion Modeling Updates 1232

Paper #1698868

Tree J. Raine, Geosyntec, Inc.

International Environmental Trade Opportunities and the Way Forward

Track: REGU

6/26/2024, 3:30 PM

Room: Glen 203-204

Panel – TCC: IAC/REG

Chair: Chih C. Chao, Cantech Environmental **1243**

This panel provides a forum for the US and Canada governmental trade officers and trade association representatives to present their respective services and programs that can assist environmental goods and service firms to export their expertise, products, carbon management technologies and other services internationally. It could also provide useful information for foreign companies looking to invest or expand investment in North America. The panelists will talk about their perspectives, approaches and programs and expected goals, to be followed by a fully engaged Q&A period. The open exchanges are expected to encourage enthusiastic dialogues between the panelists and the audience, leading to fruitful networking and/or partnerships.

Panelists:

- *Anna Cron, U.S. Department of Commerce 1253*
- *Nicole Harbauer, Canada Trade Commissioner Service 1261*
- *Sarah Rimbey, Canadian Manufacturers & Exporters N/A*

Sustainability Case Studies and Tools

Track: SUST

6/26/2024, 3:30 PM

Room: Macleod E2

Platform – TCC: SRC

Chair: Mona Hazur, Arcadis

Co-Chair: Ketan V. Shah, SCS Engineers

3:30 PM

Environmental Impacts and Lifecycle Cost Analysis of Hybrid, Electric, and Hydrogen Fuel Cell Cars in Texas 1271

Paper #1696705

Raghava R. Kommalapati, Prairie View A&M University; Hongbo Du, Tarleton State University

3:50 PM

Circular Economy in a Complex Production Supply Chain: Case from the Textile Industry 1281

Paper #1698598

Maeen Md Khairul Akter, Stony Brook University

4:10 PM

Navigating the Transition to Financial-Level Quality ESG Data N/A

Paper #1701238

Elizabeth L. Logan, Bryan Jang, AECOM

4:30 PM

Deploying an Environmental Management Information System: Case Studies of Implementation Successes and Failures 1289

Paper #1683281

Kyong Song, Barr Engineering

TECHNICAL SESSIONS – WEDNESDAY

Waste Management and Resource Recovery

Track: WAST

6/26/2024, 3:30 PM

Room: Macleod E4

Platform – TCC: WMB

Chair: Melanie L. Sattler, University of Texas at Arlington

Co-Chair: David Greene, SCS Engineers

3:30 PM

Closing the Gap between EPA Estimations and Site-Specific

Data: An Assessment of the U.S. Paper Waste Dynamics N/A

Paper #1697999

Sagarika Srivastava, Stony Brook University

3:50 PM

**Settlement Analysis of Calgary Landfill Biocell: An Anaerobic
Landfill Bioreactor Operated in Cold Climates for 15 Years** 1301

Paper #1711588

*Patrick Hettiaratchi, Saranga Munasinghage, Ron Wong, University
of Calgary; Hiroshan Hettiarachchi, University of Guam*

4:10 PM

Intelligent Packaging Films Produced from Fishery Waste

**Chitosan Conjugate Discarded Jaboticaba Extract: Fabrication,
Characterization, and Shelf-Life Extension of Fresh Pork Loins** N/A

Paper #1738069

Ying-Chen Chen, National Chung Hsing University

4:30 PM

**Lemon Peel Byproduct Utilization for Development of Value
Added Sustainable Food Product** N/A

Paper #1698797

*Meenakshi Garg, University of Delhi; Chavi Porwal; Priyanka
Prajapati*

How Does It Work? Hydrogen Uses and Challenges

Track: YPRO/CLIM/INDU

6/26/2024, 3:30 PM

Room: Macleod E1

Panel – TCC: CCP/LHC

Chair: Sina Esfandiar Pour, University of Alberta N/A

Co-Chair: Hafez Balavi, Canadian Natural Resources Limited N/A

This panel will provide a general overview of recent and upcoming hydrogen uses and challenges in Canada and the USA. This session is proposed to feature speakers from government regulating bodies and industry consultants who can explain current regulations and regulatory framework, as well as anticipated changes or areas of interest. The panel will be geared towards young professionals and will include topics across local, provincial/state, and federal regulations. The panel will conclude with open discussions and Q&A which will provide students and YPs to interact with the panel members. 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 each regulatory body discussed and the regulatory challenges each faces.

Panelists:

- *Jordan M. Haywood, Siemens Energy* 1310
- *Amy Lawson, Arcadis US, Inc.* 1318
- *Arijit Pakrasi, EDGE Engineering and Science LLC* N/A
- *Martin Huard, InnoTech Alberta* N/A

TECHNICAL SESSIONS – THURSDAY

Thursday, June 27, 2024				
Time	Title	Track	Session	Room
8:00 am – 10:00 am	A&WMA 54th Critical Review: Atmospheric Reduced Nitrogen		panel	Glen 206
Thursday AM 2				
10:10 am - 11:50 am	Air Permitting Challenges and Solutions	MINI/REGU	panel	Glen 201-202
10:10 am - 11:50 am	Emissions for Point and Non-Point Sources, Part 2	AQES	platform	Macleod E1
10:10 am - 11:50 am	Air Quality Monitoring Data Visualization Tools and COVID-19 Impact Analysis	AQMM	platform	Macleod E3
10:10 am - 11:50 am	Guideline on Air Quality Models Revisions - AERMOD Options	AQMO	panel	Glen 209
10:10 am - 11:50 am	Nurturing Tradition: Environmental Governance for Climate Resilience, Adaptation, and Stewardship on an Indigenous Island	SUST/CLIM	panel	Macleod E2
10:10 am - 11:50 am	Environmental Justice Policy and Education	EJUS/REGU	platform	Glen 203-204
10:10 am - 11:50 am	New and Unique Air Pollution Exposures and Management	H&EE	platform	Macleod E4
10:10 am - 11:50 am	PM2.5 and Ozone Implementation Issues	REGU	panel	Glen 205
12:00 pm – 1:30 pm	A&WMA Honors & Awards Ceremony and Luncheon			Macleod A
Thursday PM1				
1:40 pm - 4:00 pm	Ozone SIP Implementation Strategies	AQES/REGU	platform	Glen 205
1:40 pm - 4:00 pm	Air Quality Monitoring Advancements	AQMM	platform	Glen 209
1:40 pm - 4:00 pm	Urban Air Pollution Exposures and Effects	H&EE	platform	Glen 201-202
1:40 pm - 4:00 pm	Hot Topics in the Chemical and Refining Sector	INDU	platform	Glen 203-204

Air Permitting Challenges and Solutions

Track: MINI/REGU
6/27/2024, 10:10 AM
Room: Glen 201-202

Panel – TCC: REG/LHC

Chair: Daniel R. Guido, ERM, Inc. **1328**

Co-Chair: Andres Soux, ERM Consultants Canada Ltd. **N/A**

This panel will discuss typical air quality permitting challenges relevant to a wide variety of industrial sectors and highlight new challenges particularly related to environmental and social governance (ESG) issues and today's climate of increased scrutiny on environmental impacts. Regulatory authorities are under pressure to consider ESG concepts like Environmental Justice (EJ) in permitting and are often influenced by the public and/or special interest groups during the permitting process. These influences can be new EJ-specific regulations, applicable EJ directives from high levels of government, and from locally organized groups participating in the public comment process who cite EJ/ESG issues in addition to climate change and other environmental concerns. Discussion topics will include EJ, permit risks, emerging contaminants, monitoring, and ongoing compliance management. Panelists will take questions and discuss how to plan for scrutiny on permit applications and develop strategies to minimize uncertainty that additional scrutiny brings to permitting timelines.

Panelists:

- Mark DiPrinzio, ERM, Inc. **N/A**
- Doug Dziubla, ERM, Inc. **N/A**
- John Gibbons, ERM, Inc. **N/A**
- Andres Soux, ERM Consultants Canada Ltd. **N/A**
- Tom Wickstrom, ERM, Inc. **N/A**
- Peter Cormier, McCain Foods **N/A**
- Nathan Chenaux, TC Energy **N/A**

Emissions for Point and Non-Point Sources (Part 2)

Track: AQES
6/27/2024, 10:10 AM
Room: Macleod E1

Platform – TCC: AAE

Chair: Alexis D. Tanner, Energy & Emissions Research Laboratory (EERL) at Carleton University

Co-Chair: Alma A. Neria-Hernández, Autonomous University of the State of Mexico

10:10 AM

Machine-Learning Based Predictive Emission Monitoring System **1347**

Paper #1698395

Ke Du, Minxing Si, University of Calgary; Brett M. Wiens, Cenovus Energy Inc.

10:30 AM

Determination of an Activated Carbon Ozone Adsorbents for an Invisible Visor Powered by Non-Thermal Plasma at Meat and Poultry Processors **1358**

Paper #1698522

Rahul Gandhi, Eric Monsu Lee, Northern Illinois University

10:50 AM

Determination of Fugitive Volatile Organic Compound Equipment Leak Emissions from Pharmaceutical Manufacturing Using EPA's Protocol for Equipment Leak Emission Estimates **1366**

Paper #1699145

Jason R. Krawczyk, Elise Wellman, Eli Lilly and Company

11:10 AM

Understanding Continuous Emissions Monitoring Systems (CEMS) **N/A**

Paper #1702397

Graham Russell, Global Analyzer Systems

TECHNICAL SESSIONS – THURSDAY

11:30

Efficient and Secure Predictive Emissions Monitoring System (ES-PEMS): A New Era of Environmental Stewardship 1378

Paper #1698508

Ling Bai, Tyra Macdonald, Yu Pang, and Fanxing Wang, VL Energy

Air Quality Monitoring Data Visualization Tools and COVID-19 Impact Analysis

Track: AQMM

6/27/2024, 10:10 AM

Room: Macleod E3

Platform – TCC: AAM

Chair: Alexandria Price, Formation Environmental

Co-Chair: Doug Dziubla, ERM, Inc.

10:10 AM

Demo of One-Stop App (Data base, Interactive GIS Mapping, Trending, Analytics and Reporting) of Air/Odor Community-Based Monitoring N/A

Paper #1701771

Khalid Lemzouji, Peter Solymos, Analythium

10:30 AM

Interactive Data Visualization of Monitored Air Quality, and Its Applications in Support of Air Quality Communication and Management Decisions 1387

Paper #1699019

Kevin McCullum, KRM Environmental Consulting Inc.; Long Fu, Madhan Selvaraj, Alberta Environment and Protected Areas

10:50 AM

Impacts of Reduced Transportation on Air Quality in Alberta Associated with COVID-19 1404

Paper #1698144

David Spink, Prairie Acid Rain Coalition; Alec Carrigy, Clean Air Strategic Alliance

11:10 AM

Non-Thermal Plasma Inactivation of Airborne Viruses: Interference Effects of Common Odorous Gases 1418

Paper #1702397

Herek L. Clack, Zhenyu Ma, University of Michigan

Guideline on Air Quality Models Revisions - AERMOD Options

Track: AQMO

6/27/2024, 10:10 AM

Room: Glen 209

Sponsored by: 

Panel – TCC: APM

Chair: Tony Schroeder, Trinity Consultants **N/A**

On October 23, 2023, the United States Environmental Protection Agency (EPA) published notice of a proposed rule that includes revisions to EPA's Guideline on Air Quality Models found at 40 CFR 51 Appendix W. The Guideline contains EPA's requirements and recommendations for regulatory air dispersion modeling, such as for air permitting or State Implementation Plan (SIP) revisions, in the United States. Along with the proposed revisions to the Guideline, EPA released revised versions of the AERMOD Model and the AERMET meteorological data pre-processor that incorporate model options that correspond with some of the proposals in the Guideline. This panel session will include a discussion of the proposed regulatory updates including proposed updates to AERMOD.

Panelists:

- *Qi Zhang, GHD N/A*
- *Roger L. Wayson, AECOM 1425*
- *Jason Reed, Ramboll 1429*

Nurturing Tradition: Environmental Governance for Climate Resilience, Adaptation, and Stewardship on an Indigenous Island

Track: CLIM/SUST

6/27/2024, 10:10 AM

Room: Macleod E2

Panel – TCC: CCP/SUS

Chair: Mona Awi, National Dong Hwa University **N/A**

Embark on a journey to a small indigenous island, where time-honored traditions harmonize with cutting-edge environmental governance. Delve into the intricate tapestry of climate resilience, adaptive strategies, land stewardship, and circular economy initiatives. Witness how this holistic approach not only safeguards the island's future against climate challenges but also preserves its cultural heritage, fostering a sustainable haven where tradition and innovation thrive hand in hand.

Panelists:

- *Mona Awi, National Dong Hwa University 1438*
- *Sibusiso Sisekelo S. Sibandze, National Dong Hwa University N/A*
- *Yu-Chao Huang, National Dong Hwa University N/A*

TECHNICAL SESSIONS – THURSDAY

Environmental Justice Policy and Education

Track: EJUS/REGU
6/27/2024, 10:10 AM
Room: Glen 203-204

Platform – ITF: EJS

Chair: Arijit Pakrasi, EDGE Engineering and Science LLC

10:10 AM

Approaches to Cumulative Impact Analysis in Air Permitting to Address Environmental Justice Issues 1453

Paper #1712154

Jessica Ross, Arijit Pakrasi, EDGE Engineering and Science LLC

10:30 AM

Environmental Justice Activities In Louisiana 1466

Paper #1702391

John B. King, Breazeale, Sachse & Wilson, LLP

10:50 AM

Selecting Candidate Locations for Online Air Quality Courses N/A

Paper #1674031

George J. Schewe, Trinity Consultants; Elizabeth Spike, Clean Air Partners

11:10 AM

Empowering Communities Overburdened by Air Pollution Through the Air Ambassador Program N/A

Paper #1702082

Hannah Ashenafi, Joseph D. Jakuta, Amanda Lahan, District of Columbia Department of Energy and Environment

New and Unique Air Pollution Exposures and Management

Track: H&EE
6/27/2024, 10:10 AM
Room: Macleod E4

Platform – TCC: HEE

Chair: James Morrow, J.W. Morrow Consulting

Co-Chair: David McCready, EnviroCalc Consulting

10:10 AM

Occupational Health and Safety in the Aviation Industry Associated with the Increasing Use of Sustainable Aviation Fuels N/A

Paper #1711624

Yevgen Nazarenko, Onyinye A. Ezeifeka, University of Cincinnati

10:30 AM

Nanoparticles: Human Health Impact N/A

Paper #1711422

Roya Mortazavi, Concordia University

10:50 AM

Why Environmental Noise Should Be Treated as a Pollutant 1476

Paper #1697875

Ian Bonsma, Corey Kinart, Nick McCabe, Howe Gastmeier Chapnik Limited

11:10 AM

Assessing Microplastics in the Air: An Overview of Methods for Sampling and Analysis 1488

Paper #1682187

Inkyu Han, Chanmi Lee, Kirsten E. Wiens, Temple University College of Public Health

PM2.5 and Ozone Implementation Issues

Track: REGU
6/27/2024, 10:10 AM
Room: Glen 205

Panel – TCC: REG

Chair: Gurinder Saini, RTP Environmental Associates, Inc. 1498

Significant challenges remain regarding best available control technology (BACT) and air quality modeling for a Prevention of Significant Deterioration (PSD) permit for PM2.5 emissions. Over the years, U.S. Environmental Protection Agency (EPA) and State agencies have issued several BACT determinations for both PM2.5 and precursors. PM2.5 air quality modeling for PM2.5 direct emissions is complex. In addition, EPA has further lowered the PM2.5 annual NAAQS. Impacts from wildfires and exceptional events continue to create challenges for PM2.5 annual modeling. This panel will provide an overview of the recent PM2.5 and ozone precursors BACT developments and modeling challenges especially when dealing with wild fires and exceptional events.

Panelists:

- Ralph E. Morris, Ramboll 1505
- Charles Knauss, Hunton Andrew Kurth LLP 1516
- Brandon Curtis, Hiser Joy 1522

Ozone SIP Implementation Strategies

Track: AQES/REGU
6/27/2024, 1:40 PM
Room: Glen 205

Platform – TCC: AAE

Chair: Rodolfo Sosa-Echeverría, Institute of Atmospheric Sciences and Climate Change

Co-Chair: Violeta Mugica-Álvarez, Autonomous Metropolitan University-Azcapotzalco

1:40 PM

Measuring Enhanced Ozone Production Due to Wildfires Using Novel VOC Instrumentation N/A

Paper #1671069

Yousaf Hameed, Clark County Department of Environment and Sustainability; Crystal D. McClure, Sonoma Technology

2:00 PM

Evaluation of 2026 Ozone Precursor Emission Source Sectors in Denver using the Weighted Emissions Potential Approach 1532

Paper #1697754

Fiona Jiang, Ross L. Beardsley, Ralph E. Morris, Ramboll; Tom Moore, Denver Metro/North Front Range - Regional Air Quality Council

TECHNICAL SESSIONS – THURSDAY

2:20 PM

Data Quality Investigation Using Artificial Neural Network in Support of Policy Achievement Assessment in Alberta N/A

Paper #1698609

Long Fu, Thompson Nunifu, Alberta Environment and Protected Areas

2:40 PM

Integrated Machine Learning Model for Ozone Prediction Using Environmental Data N/A

Paper #1702843

Ji Hoon Seo, SungWoo Cho, Jong Ryeul Sohn, Korea University

3:00 PM

Source Apportionment of VOC in North Texas: Integrating Dispersion Normalized PMF and Ozone Formation Potentials 1544

Paper #1712174

Jithin Kanayankottupoyil, Kuruvilla John, University of North Texas, Denton

Air Quality Monitoring Advancements

Track: AQMM

6/27/2024, 1:40 PM

Room: Glen 209

Platform – TCC: AAM

Chair: Doug Dziubla, ERM, Inc.

Co-Chair: Alexandria Price, Formation Environmental

1:40 PM

Optical Gas Imaging System for Site Level Continuous Emission Monitoring 1558

Paper #1692369

Ram Hashmonay, Opgal

2:00 PM

Using a Ground Mobile System for Monitoring Emissions Using Infrared Spectroscopy and Quantitative Optical Gas Imaging 1568

Paper #1702498

Ángel E. Esparza, Encino Environmental Services

2:20 PM

Detecting and Managing Fugitive Emissions Using Intelligent Emissions Monitoring 1575

Paper #1702610

Michelle Liu, Dennis Prince, Colin Jensen, Airdar Inc.

2:40 PM

Redefining Flux Chambers: Novel Statistical-Based Approach for Enhanced Landfill Surface Emissions Monitoring 1592

Paper #1701791

Pooya Shariaty, Peter Tkalec, GHD Limited

3:00 PM

Enhancing Carbon Footprint Quantification: A Comparative Analysis of Flux Chambers and Eddy Covariance Methods N/A

Paper #1702395

Pooya Shariaty, Samineh Kamravaei, GHD Limited; Zaher Hashisho, University of Alberta

3:20 PM

Cost Savings by Method Optimization: An Innovative Approach to Dioxins and Furans N/A

Paper #1702516

Desiree Hui, AGAT Laboratories

3:40 PM

Historical Operations of Optical Monitoring and its Bright Future 1597

Paper #1702500

Gary Cacciatore, CEMTEK KVB-Enertec

Urban Air Pollution Exposures and Effects

Track: H&EE

6/27/2024, 1:40 PM

Room: Glen 201-202

Platform – TCC: HEE

Chair: James Morrow, J.W. Morrow Consulting

Co-Chair: David McCready, EnviroCalc Consulting

1:40 PM

Air Pollutant Exposure Measurements from Daily Commute in a Midwest City Using Portable Devices N/A

Paper #1711666

Mingming Lu, Alyssa Coriell, Alyssa Yerkeson, Reshmasri Deevi, University of Cincinnati

2:00 PM

The Impact of Peri-Urban Agriculture Activities on Air Quality and Health in the Mexican City with the Highest PM2.5 Concentrations 1610

Paper #1702739

Alma A. Neria-Hernández, Araceli A. Amaya-Chávez, Arturo A. Colín-Cruz, Juan C. Sánchez-Meza, Autonomous University of the State of Mexico; Violeta Mugica-Álvarez, Fernando Millán-Vázquez, Sr., Autonomous Metropolitan University-Azcapotzalco

2:20 PM

Identification of Emission Sources from Elemental and Ionic Speciation of PM2.5 from the Most Polluted City in Mexico 1616

Paper #1712119

Alma A. Neria-Hernández, Autonomous University of the State of Mexico; Ana Alarcón-Jiménez, Rodolfo Sosa-Echeverría, Institute of Atmospheric Sciences and Climate Change; Fernando Millán-Vázquez, Sr., Violeta Mugica-Álvarez, Autonomous Metropolitan University-Azcapotzalco

2:40 PM

Oxidative Stress Induction by PM2.5 Organic Extract Exposure in Human Lung Epithelial Cell Lines A549 and BEAS-2B 1622

Paper #1702719

Fernando Millán-Vázquez, Sr., Violeta Mugica-Álvarez, José de Jesús Figueroa Lara, Autonomous Metropolitan University-Azcapotzalco; Margarita I. Palacios Arreola, Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas

TECHNICAL SESSIONS – THURSDAY

Hot Topics in the Chemical and Refining Sector

Track: INDU

6/27/2024, 1:40 PM

Room: Glen 203-204

Platform – TCC: PIM

Chair: Karen Brignac, Deltech Monomers OpCo, LLC

1:40 PM

Measurements of Methane, Soot, and NOx from Flares

Subjected to Crosswind N/A

Paper #1698977

Alexis D. Tanner, Milad Mohammadi, Matthew R. Johnson, Energy & Emissions Research Laboratory (EERL) at Carleton University; Brian Crosland, Natural Resources Canada; Gregory A. Kopp, Western University

2:00 PM

What is Generally Available Control Technology (GACT) and Why Should I Care? N/A

Paper #1712058

Karen Brignac, Deltech Monomers OpCo, LLC

2:20 PM

There's Been a Spill...Now What? Legal Requirements for Responding to a Spill 1628

Paper #1696798

Jacquelyn Stevens, Willms & Shier Environmental Lawyers LLP

2:40 PM

Automated and Real-Time Noise Monitoring and Assessment Using Machine Learning 1643

Paper #1734271

Carlos Yoong, Chris Bibby, Wood PLC



Founded in 1907, the Air & Waste Management Association (A&WMA) is a nonprofit, nonpartisan professional organization that enhances knowledge and expertise by providing a neutral forum for information exchange, professional development, networking opportunities, public education, and outreach to more than 5,000 environmental professionals in 65 countries. A&WMA also promotes global environmental responsibility and increases the effectiveness of organizations to make critical decisions that benefit society.