NADP 2020 Technical Meeting and Scientific Symposium Agenda

Science Committee Meetings

Monday, October 26, 2020

Total Deposition (TDEP) I, II
11:00 - 1:00, Break, 2:00 - 4:00

Mercury in the Environment and Links to Deposition (MELD) I, II
1:00 - 3:00, Break, 4:00 - 6:00

Aeroallergen Monitoring Science Committee (AMSC)
4:00 - 6:00

Tuesday, October 27, 2020

Critical Loads of Atmospheric Deposition (CLAD) I, II
12:00 - 1:30, Break, 2:00 - 3:30, Social hour 3:30 - 4:30

Scientific Symposium

Wednesday, October 28, 2020

Logistics: Greg Wetherbee, NADP Vice Chair
Welcome: David Schmeltz, NADP Chair
Opening Remarks: Dr. James Schauer, NADP Principal Investigator
Annual State of the NADP Report: Dr. David Gay, NADP Coordinator

Keynote Speaker: Dr. LaToya Myles (NOAA)

BREAK

9:00 - 9:05
9:05 - 9:15
9:15 – 9:20
9:20 - 9:40
9:40 - 10:15
10:15 - 10:30
10:30 - 10:50
10:50 - 11:10
11:10 - 11:30
11:30 - 12:00
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<thead>
<tr>
<th>Session 2: Advances in Atmospheric Deposition Monitoring</th>
<th>Chair: Chris Rodgers, Wood.</th>
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<tr>
<td>Northeastern mountain ponds as sentinels of change: current and emerging research and monitoring in the context of shifting atmospheric deposition and climate interactions</td>
<td>Sarah J. Nelson, Rachel A. Hovel, Julia Daly, Amanda Gavin, Stephanie Dykema and William H. McDowell</td>
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<tr>
<td>Session 2: Advances in Atmospheric Deposition Monitoring</td>
<td>12:40 - 1:00</td>
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<td>Exploring the regional-scale atmospheric fate and transport of per- and polyfluoroalkyl substances (PFAS)</td>
<td>Emma D’Ambro, Havala Pye, Chris Allen, Kevin Talgo, Lara Reynolds, Kathy Brehme, Robert Gilliam, Jesse Bash and Ben Murphy</td>
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<td>Global Importance of Hydroxymethanesulfonate in Ambient Particulate Matter: Implications for Air Quality</td>
<td>Jonathan Moch, Eleni Dovrou, Loretta Mickley, Frank Keutsch, Zirui Liu, Yuesi Wang, Tracy Dombek, Mikinori Kuwata, Stefano Decesari, Marco Paglione and Daniel Jacob</td>
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<tr>
<td>A Method to Measure and Speciate Amines in Ambient Aerosol Samples</td>
<td>Amy Sullivan, Katherine B. Benedict, Christian M. Carrico, Manvendra K. Dubey, Bret A. Schichtel and Jeffrey L. Collett, Jr.</td>
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<td>Atmospheric NO₂ and d¹⁵N in moss in a protected wilderness area impacted through vehicle emissions in Alberta, Canada</td>
<td>Mikayla Donovan, Mary Reid and Ann-Lise Norman</td>
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<td>Advances in the evaluation of reactive nitrogen in Mexico City</td>
<td>Rodolfo Sosa Echeverría, David Gay, John Walker, Gregory Wetherbee, Ana Luisa Alarcón Jimenez, Monica Jaimes Palomera, Pablo Sanchez Alvarez and Elizabeth Vega</td>
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<td>Monitoring springwater nitrate as an indicator of atmospheric deposition in a regional conservation plan</td>
<td>Stuart Weiss</td>
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<td>Break</td>
<td>2:40 - 3:00</td>
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Session 3: Atmospheric Deposition Effects in Aquatic and Terrestrial Ecosystems

Chair: Dr. John Walker, U.S. Environmental Protection Agency

Throughfall Deposition Chemistry in the Great Smoky Mountains National Park: Long-term Trends and Effects of Stream Water Quality - John Schwartz, Matt Kulp, Jim Renfro, Andrew Veeneman and Adrian Gonzalez

3:00 - 3:20

Atmospheric nitrogen deposition drives declines in native plant richness across the Santa Monica Mountains, California - Justin Valliere, Gary M. Bucciarelli, Andrzej Bytnerowicz, Mark E. Fenn, Irina C. Irvine, Robert F. Johnson and Edith B. Allen

3:20 - 3:40

Total deposition of inorganic nitrogen to Norway spruce forests – applying a surrogate surface method across a deposition gradient in Sweden – Per Erik Karlsson, G. Pihl Karlsson, S. Hellsten, C. Akselsson, M. Ferm and H. Hultberg

3:40 - 4:00

Is weathering sufficient to keep forest harvest from exceeding acidification critical loads in Sweden: Conclusions from QWARTS – Quantifying Weathering Rates for Sustainable Forest Management – Kevin Bishop, Cecilia Akselsson, Salim Belyazid and Stefan Lofgren

4:00 - 4:20

Water resources in a changing world: Long-term hydrologic monitoring provides insight into changes in precipitation and stream-water quality at Robinson Forest in eastern Kentucky, Appalachia, USA – Tanja Williamson, Kenton Sena and Chris Barton

4:20 - 4:40

Mercury in Fish from Streams and Rivers in New York State: Spatial Patterns and Environmental Drivers – Karen Riva-Murray, Wayne Richter, N. Roxanna Razavi, Douglas Burns, Lisa Cleckner, Mark Burton and Scott George

4:40 - 5:00

Thursday, October 29, 2020

Session 4: Global Atmospheric Mercury Assessment

Chair: David Schmeltz, U.S. Environmental Protection Agency

A National Survey of Total Gaseous Mercury Stable Isotope Composition and Concentration across the US – David Krabbenhoft, Michael Tate, Sarah Janssen, John DeWild, Jacob Ogorek and Ryan Lepak

9:00 - 9:20
Atmospheric Mercury Monitoring in Japan by using Gold Amalgamation Trap Method - Methodology and Data over 15 Years – Tatsuya Hattori

Eight-year atmospheric mercury deposition to a tropical high mountain background site downwind of the East Asian continent – Guey-Rong Sheu, Ly Sy Phu Nguyen, Leiming Zhang, Da-Wei Lin and Neng-Huei Lin

Mercury Emission to the Atmosphere Dominates Annual Mass Balance of a Boreal Peatland and highlights the need for eddy-covariance based measurements of surface-atmosphere Hg exchange – Kevin Bishop, Stefan Osterwalder, Wei Zhu, Chuxian Li and Mats B Nilsson

Net ecosystem exchange of atmospheric gaseous elemental mercury (GEM) over a temperate forest: seasonality and diel patterns of exchange and annual mass balance of deposition – Daniel Obrist, Eric Roy, Christ Romero, Jun Zhou, J. William Munger, Roisin Commane and John Budney

Mercury in Soils Across the Conterminous United States: Changes in Pools and Patterns – Connor Olson, Benjamin M. Geyman, Colin P. Thackray, David P. Krabbenhoft, Michael T. Tate, Elsie M. Sunderland and Charles T. Driscoll

BREAK

Session 5: Advances in Mercury Monitoring and Research Chair: Kristi Morris, National Park Service

Passive air sampling for mercury, a newer approach to monitoring – Alexandra Steffen, Geoff Stupple, Frank Wania, Eric Prestbo, Nicola Pirrone, Carl Mitchell and Attilio Naccarato

Active and passive systems for measurement of gaseous oxidized, particulate bound, and reactive mercury – Mae Gustin, Sarrah Dunham-Cheatham, Seth Lyman, Stefan Osterwalder, Jiaoyan Huang and Lei Zhang

Atmospheric Hg Concentration Dynamics Over a Temperate Deciduous Broadleaf Forest – Christ Romero, Daniel Obrist, J. William Munger, Roisin Commane, Jun Zhou and Eric Roy
Surface-air mercury fluxes and a watershed mass balance in forested and harvested catchments – Chris Eckley, Collin Eagles-Smith, Mike Tate and Dave Krabbenhoft

Comparison of pre-MATS (Mercury and Air Toxics Standards) rule and post-MATS rule GOM dry deposition measurements in the Four Corners Area – Mark Sather, Shaibal Mukerjee and Luther Smith

Tracing the depositional history of mercury to two coastal National Parks in the Northeast United States – Vivien Taylor and Joshua D. Landis

BREAK

Concurrent Session 6: Advances in Measurement Model Fusion

Chair: Donna Schwede, U.S. Environmental Protection Agency

On model-data fusion approaches for wet deposition in North America – Alain Robichaud, Amanda S. Cole, Mike D. Moran, A. Lupu, M. Beauchemin and V. Fortin

An Updated Global Model for Terrestrial-Atmospheric Hg Exchange and Storage in Soils – Benjamin Geyman, Colin Thackray, Elizabeth Corbitt, Connor Olson, Charley Driscoll, Dave Krabbenhoft, Michael Tate and Elsie Sunderland

TDep Measurement Model Fusion (MMF) method to fuse modeled and measured air quality data to estimate total deposition with Python geoprocessing – Shih Ying Chang, Nathan Pavlovic, Gregory Beachley, Melissa Puchalski and Christopher Rogers

Estimation of ammonia and nitrous oxide emissions from turfgrass systems using a dynamic chamber method and a biogeochemical modeling framework – Alberth Nahas, John T Walker, Limei Ran, Fred Yelverton and Viney Aneja

An application of machine learning to determine critical loads of nitrogen and sulfur in forest ecosystems in the U.S. – Nathan R. Pavlovic, Charles T. Driscoll, Kenneth Craig, Jiaoyan Huang, Shih Ying Chang and Christopher M. Clark

Modeled Exceedances of Critical Loads for Total Nitrogen and Sulfur Deposition – Krish Vijayaraghavan, Ross Beardsley, Tejas Shah and John Grant
Concurrent Session 7: Critical Loads of Atmospheric Deposition

Chair: Dr. Linda Geiser, U.S. Forest Service


Interpreting terrestrial sulfur critical loads to protect national parks – Emmi Felker-Quinn, Michael D. Bell and Nicholas A. Russell

Exceedances of Critical Loads for Herbaceous Species in National Parks: Species at Risk, Local Responses, and Regional Trends – Nicholas Russell, Michael D. Bell and Emmi Felker-Quinn

A Case Study: Critical Load Assessment in Areas above 1000 m in the Great Smoky Mountains National Park – Jason Lynch and Selma Isil

Assessing nitrogen critical loads at North Cascades National Park Service Complex – Meaghan Petix, Michael D. Bell, Tonnie Cummings, Alida Melse and R. Dave Evans

Incorporating Air Quality into the Resources Planning Act Assessment with Critical Loads and Deposition – Sarah Anderson, Claire O’Dea and Jennifer Costanza

Friday, October 30, 2020

Session 8: Atmospheric Deposition and a Changing Society

Chair: Dr. Pamela Templer, Boston University

Effect of atmospheric deposition on built heritage – Luis Miguel Urbina Leonor, Rodolfo Sosa Echeverría, Rogelio Soto Ayala, Ana L. Alarcón Jiménez, Pablo Sánchez Álvarez and Gilberto Fuentes García


Bioaerosol occurrence in working places – Francesca Buiarelli, Giulia Simonetti, Elisa Sonego, Carmela Riccardi, Patrizia Di Filippo and Donatella Pomata
Air Quality in Rocky Mountain National Park during the 2020 COVID19 Shutdown – Lillian Naimie, Katherine Benedict, Amy Sullivan, Bret Schichtel and Jeff Collett

CASTNET Ozone Response to COVID-19 Related Impacts – Timothy Sharac, Gregory Beachley, Melissa Puchalski, Barkley Sive and Ryan McCammon

BREAKE

Poster Session

Co-Chairs: Melissa Puchalski (U.S. Environmental Protection Agency) and Gregory Wetherbee (U.S. Geological Survey)

CASTNET Ozone Response to COVID-19 Related Impacts – Timothy Sharac, Gregory Beachley, Melissa Puchalski, Barkley Sive and Ryan McCammon

10:20 - 10:40

Break

10:40 - 11:15

Session Logistics – Co-chairs

11:15 - 11:20

Sub-session I – Emerging Contaminants and Issues

Biomonitoring of atmospheric deposition of heavy metals in Slovakia – Jana Borovská, Blanka Maňkovská† and Matej Florek

11:20 - 11:25

Comparison of Aerosol Optical Depth from Satellite based observation over Surat region – Ranjtkumar Solanki and Dr.K.N.Pathak

11:25 - 11:30

Particulate Matter Deposition to Urban Rock Pigeon (Columba livia) Feathers – Jennifer Ellis, Dr. Alexandra Ponette-González, Dr. Jeff Johnson and Dr. Matthew Fry

11:30 - 11:35

Initiation of Measurement of PFAS in Wet Deposition at four NADP sites in the Eastern United States – John Offenberg, John Walker, Melissa Puchalski, Douglas A Burns, Andrew Johnson and Martin Shafer

11:35 - 11:40

Questions and Answers for Sub-session I Presenters

11:40 – 11:50

Sub-session II – Atmospheric Nitrogen and Mercury Assessments

Varied Host-Specific Mycorrhizal Response to Long-Term Nitrogen Fertilization in Bear Brook Watershed in Maine, USA – Sibi Kizhakkepurakkal, Ivan J Fernandez and Seanna L Annis

11:50 - 11:55

Isotopic Composition of Nitrate and Ammonium in Sao Paulo, Brazil Wet Deposition – Adrianna Chapa, J. David Felix and M Lucia A M Campos

11:55 - 12:00
Influence of meteorological conditions on the wet atmospheric deposition in the Metropolitan Area of Mexico City – Daimy Avila, Rodolfo Sosa Echeverría, Ana Luisa Alarcón Jiménez, Gilberto Fuentes García and Pablo Sánchez Álvarez

Water-atmosphere flux of ammonia in subtropical semi-arid estuary systems – Warren Dunegan and J. David Felix

Quantification and Transformation of Water Soluble Organic Nitrogen in a Coastal Urban Airshed – Scilyn Apacible and Dr. Joseph David Felix

National view of temporal atmospheric mercury deposition across Canada using lake sediment cores – Sarah Roberts, Jane Kirk, Derek Muir, Johan Wiklund, Marlene Evans, Amber Gleason, Paul Drevnick, Ashu Dastoor, Andrei Rvjkov, Benjamin Barst0 and Colin Cooke

Lower Eastern Shore Ambient Air Quality Monitoring Project – Deborah Sauder, Bernice Bediako, Moses Kairo and Ryan Auvil

Questions and Answers for Sub-session II Presenters

Sub-session III – Atmospheric Deposition Modeling


EQUATES: EPA’s Air QUALity Time Series Project – Kristen Foley, George Pouliot, Jesse Bash and Donna Schwede

Modeling the Source Sectors Contribution to Nitrogen Deposition in United States – Sharmin Akter, Michael Crowl and Kristina Wagstrom

Questions and Answers for Sub-session III Presenters
Sub-session IV – Atmospheric Deposition and Extreme Conditions


Assessing multiple soil resource limitations on dryland soil microbial communities: inferences from a short-term C, N and P addition laboratory incubation experiment – Jennifer Holguin and Dr. Jennie R. McLaren

Hurricane/tropical storm rainwater chemistry in the US (2008 to 2019) – Yixi Qiu, Yixi Qiu and Joseph David Felix

Questions and Answers for Sub-session IV Presenters

End of Symposium