

## American Association for Aerosol Research - Abstract Submission



**AAAR 37th Annual Conference**  
**October 14 - October 18, 2019**  
**Oregon Convention Center**  
**Portland, Oregon, USA**

### Tuesday

#### **Tuesday 8:00 AM - 9:15 AM** **Plenary I**

8:00 **Welcoming Remarks** Nga Lee "Sally" Ng, *Georgia Institute of Technology*

8:05 **Friedlander Lecture: Airborne Ultrafine Particles and Nanomaterials: Adverse Effects on the Respiratory System and Beyond** Flemming Cassee, *Dutch National Institute for Public Health and the Environment*

**Moderator** Anthony Wexler, *University of California, Davis*

9:00 **Friedlander Award Presentation** Shelly Miller, *University of Colorado Boulder*

**Announcement of AAAR 2019 Fellows** Pratim Biswas, *Washington University in St. Louis*

#### **Tuesday 9:00 AM - 4:00 PM** **Exhibits Open**

#### **Tuesday 9:15 AM - 9:45 AM** **Coffee Break**

#### **Tuesday 9:45 AM - 11:30 AM** **Session 1: Platform**

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1AC AEROSOL CHEMISTRY I: SOA FORMATION (GAS-PHASE REACTION)

OREGON BALLROOM

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**Andrew Berke and Christopher Kenseth, chairs**

**1AC.1 Autoxidation of Peroxy Radicals Formed from OH Radical-initiated Reactions of Trimethylbenzenes.** Yuwei Wang, Archit Mehra, Jordan Krechmer, Andrew Lambe, Francesca Majluf, Douglas Worsnop, Manjula Canagaratna, Hugh Coe, LIN WANG, *Fudan University*

**1AC.2 Chlorine-Initiated Photo-Oxidation of  $\alpha$ -Pinene Under High NO<sub>x</sub> Conditions: Oxidation Pathways, Product Distribution and Partitioning Behavior.** CATHERINE MASOUD, Lea Hildebrandt Ruiz, *University of Texas at Austin*

- 1AC.3 Atmospheric Chemistry of Volatile Chemical Products.** REINA BUENCONSEJO, Sophia Charan, Christopher Kenseth, Paul Wennberg, John Seinfeld, *California Institute of Technology*  
10:15
- 1AC.4 The Effect of OH Scavengers on the Particle Phase Composition of  $\alpha$ -Pinene Secondary Organic Aerosol.** DAVID BELL, Veronika Pospisilova, Amelie Bertrand, Dongyu S. Wang, Chuan Ping Lee, Felipe Lopez-Hilfiker, Claudia Mohr, Wei Huang, Imad El Haddad, Jay G. Slowik, Andre S.H. Prévôt, Josef Dommen, Urs Baltensperger, *Paul Scherrer Institute*  
10:30
- 1AC.5 Secondary Organic Aerosol Formation from Healthy and Aphid-Stressed Scots Pine Emissions.** CELIA FAIOLA, Iida Pullinen, Angela Buchholz, Fatemeh Khalaj, Arttu Ylisirniö, Eetu Kari, Pasi Miettinen, Jarmo Holopainen, Minna Kivimäenpää, Siegfried Schobesberger, Taina Yli-Juuti, Annele Virtanen, *University of California, Irvine*  
10:45
- 1AC.6 Estimating Vapor Wall-Loss to Improve Organic Aerosol Volatility Distributions.** KERRIGAN CAIN, Eleni Karnezi, Spyros Pandis, *Carnegie Mellon University*  
11:00
- 1AC.7 Detailed Comparison of Chamber Measurements and Mechanistic Predictions to Improve Understanding of SOA Formation Mechanisms.** JOSHUA MOSS, Abigail Koss, Kevin Nihill, Martin Breitenlechner, Alexander Zaytsev, Richard Valorso, Marie Camredon, Bernard Aumont, Frank Keutsch, Jesse Kroll, *MIT*  
11:15

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1AD SYMPOSIUM: FROM AEROSOL DOSIMETRY AND TOXICOLOGY TO HEALTH I

ROOM A 106

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**Flemming Cassee and Arthur Chan, chairs**

- 1AD.1 Analysis of Nanoparticle Toxicity at the Air-Liquid Interface of Lung Cells.** TREVOR TILLY, Ryan Ward, Alyssa Morea, Sarah Robinson, Arantazu Eiguren Fernandez, Tara Sabo-Attwood, John Lednický, Chang Yu Wu, *University of Florida*  
9:45
- 1AD.2 Synergistic and Antagonistic Interactions Among the Particulate Matter (PM) Components for Cellular ROS activity and Cytotoxicity.** YIXIANG WANG, Joseph V Puthussery, Haoran Yu, Vishal Verma, *University of Illinois Urbana-Champaign*  
10:00
- 1AD.3 CYCLEX: Cyclone Collection of Particulate Matter Followed by Exposure Experiments.** TOMOAKI OKUDA, Takaaki Goto, Hirohisa Takano, Akiko Honda, Toshinori Onishi, Michitaka Tanaka, Shuichi Hasegawa, Takayuki Kameda, Susumu Tohno, Chiharu Nishita-Hara, Keiichiro Hara, Masahiko Hayashi, Kozo Inoue, *Keio University*  
10:15
- 1AD.4 How Realistic Are In-Vitro Doses Used for Particle Toxicity Studies: Is There Something "Wrong" with Our In-Vitro Assays?** OTMAR SCHMID, *Helmholtz Zentrum München*  
10:30
- 1AD.5 Assessing Exposures and Health Effects of Ambient Particle Radioactivity: An Emerging Field for Investigation by Aerosol Researchers.** PETROS KOUTRAKIS, *Harvard T.H. Chan School of Public Health*. INVITED.  
10:45
- 1AD.6 A Historical Perspective on Evaluation of Health Hazards of Airborne Plutonium.** ROGER MCCLELLAN, *Private Consultant*  
11:15

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1BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH I: LABORATORY AND FIELD EVALUATIONS OF RESIDENTIAL COOKSTOVES AND BIOMASS BURNING

ROOM B 113-114

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**Shelly Miller and Anna Hodshire, chairs**

- 1BC.1 Particulate Matter and Black Carbon from an LPG Stove Intervention in Rural Households in Puno, Peru: Preliminary Results.** MAGDALENA FANDIÑO-DEL-RIO, Josiah Kephart, William Checkley, Kirsten Koehler, *Johns Hopkins Bloomberg School of Public Health*  
9:45
- 1BC.2 Pellet-fed Gasifier Stoves Approach Gas-stove Like Performance during In-home Use in Rwanda.** WYATT CHAMPION, Ky Tanner, Andrew Grieshop, *North Carolina State University*  
10:00
- 1BC.3 Coupling Laboratory and Field Measurements to Estimate Air Pollutant Emissions from Cookstoves.** KELSEY BILSBACK, Rose Eilenberg, Lauren Hoskovec, Michael Johnson, Jack Kodros, Eric Lipsky, Christian L'Orange, Jessica Tryner, Ander Wilson, Allen Robinson, Jeffrey R. Pierce, John Volckens, *Colorado State University*  
10:15

- 1BC.4 Development of Volatility Distributions of Biomass Burning Organic Emissions.** ADITYA SINHA, Ingrid George, 10:30 Amara Holder, Michael Hays, Andrew Grieshop, *North Carolina State University*
- 1BC.5 Chemical Characterization of Biomass Burning Sources Using Targeted and Untargeted Approaches.** CAMILLE 10:45 NOBLET, François Lestremau, Marie Lemire, Jean-Luc Besombes, Jean-Luc Jaffrezo, Olivier Favez, Serge Collet, Alexandre Albinet, *INERIS, France*
- 1BC.6 Constituents of Health Concern from Biomethane Cooking Stove Combustion Exhaust.** CHAO WAN, Yin Li, Chris 11:00 Alaimo, Jian Xue, Minji Kim, Norman Kado, Peter Green, Thomas Young, Ruihong Zhang, Michael Kleeman, *University of California, Davis*
- 1BC.7 Carbonaceous Semivolatile Organic Matter Emitted from a Pellet-fired Biomass Boiler.** MICHAEL HAYS, John 11:15 Kinsey, Ingrid George, William Preston, Carl Singer, Bakul Patel, *U.S. EPA*
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## 1CC AEROSOLS, CLOUDS, AND CLIMATE I

ROOM B 110-112

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### Shunsuke Nakao and Kevin Sanchez, chairs

- 1CC.1 Deriving CCN from High-Spectral Resolution Lidar Measurements of Aerosol Extinction and Backscatter.** 9:45 RICHARD MOORE, Kyle Dawson, Sharon P. Burton, Snorre Stamnes, Richard Ferrare, Chris Hostetler, Luke Ziemba, Ewan Crosbie, Edward Winstead, Yohei Shinozuka, Kenneth Thornhill, Bruce Anderson, *NASA Langley Research Center*
- 1CC.2 Cold Fronts Promote New Particle Formation over Mid-latitude Remote Oceans.** GUANGJIE ZHENG, Yang Wang, 10:00 Michel Jensen, Chongai Kuang, Isabel McCoy, Rob Wood, Alyssa Matthews, Fan Mei, Jason Tomlinson, Ewan Crosbie, Luke Ziemba, Richard Moore, Jian Wang, *Washington University in St. Louis*
- 1CC.3 Geoengineering for Climate Change: Nature Has Already Demonstrated the Process and Effects.** RUSSELL 10:15 SCHNELL, *National Oceanic and Atmospheric Administration*
- 1CC.4 Size-Dependent Nanoparticle Growth Profile from CLOUD Experiments.** WEIMENG KONG, Stavros Amanatidis, 10:30 Dongyu S. Wang, Loïc Gonzalez Carracedo, Birte Rörup, Dominik Stolzenburg, Jasper Kirkby, John Seinfeld, Richard Flagan, *California Institute of Technology*
- 1CC.5 Wintertime New Particle Formation and Its Contribution to Cloud Condensation Nuclei in the Northeastern United States.** FANGQUN YU, Gan Luo, Yanda Zhang, James Schwab, Joseph P. Marto, Lauriana C. Gaudet, Kara Sulia, 10:45 *The State University of New York at Albany*
- 1CC.6 Understanding and Modeling Sources of Ice Nucleating Particles in Earth System Models.** SUSANNAH 11:00 BURROWS, Christina McCluskey, Xiaohong Liu, Paul DeMott, *Pacific Northwest National Laboratory*
- 1CC.7 Morphology and Optical Properties of Soot.** Georgios Kelesidis, SOTIRIS E. PRATSINIS, *ETH Zurich* 11:15
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## 1IM INSTRUMENTATION AND METHODS I: OPTICAL AND PHYSICAL MEASUREMENTS

ROOM B 115-116

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### Markus Petters and Gavin McMeeking, chairs

- 1IM.1 Studying Coarse-Mode Aerosol Particles with Digital Holography from a UAV.** MATTHEW BERG, Osku 9:45 Kemppinen, Jesse Laning, Ryan Mersmann, *Kansas State University*
- 1IM.2 Measuring Humidification Effects on Aerosol Optical Properties with a Novel Humidity Controlled Albedometer: Instrument Validation and Soot Experiments.** TYLER CAPEK, Jared Lam, Christian Carrico, Claudio 10:00 Mazzoleni, Allison Aiken, Timothy Onasch, Andrew Freedman, Manvendra Dubey, *Michigan Technological University*
- 1IM.3 Design, Characterization, and Application of a New Field-Portable Dual-Cell Multiwavelength Photoacoustic Spectrometer with Integrated Nephelometers.** BENJAMIN SUMLIN, Rajan K. Chakrabarty, *Washington University in 10:15 St. Louis*

- 1IM.4 A Three-Angle Light Scattering Technique for Measuring the Single-Cycle Exhaust Soot from the Internal Combustion Engines.** Pooyan Kheirkhah, Patrick Kirchen, STEVEN ROGAK, *University of British Columbia*  
10:30
- 1IM.5 Investigation of Carbon Nanotube Concentrations as Elemental Carbon.** PATRICK O'SHAUGHNESSY, Ralph Altmaier, Craig Holder, *University of Iowa*  
10:45
- 1IM.6 Evaluating the Consistency of Submicron Aerosol Mass during the Atmospheric Tomography Mission (ATom): A Focus on the Aerosol Mass Spectrometer Quantification.** HONGYU GUO, Pedro Campuzano-Jost, Benjamin A. Nault, Douglas Day, Christina Williamson, Agnieszka Kupc, Charles Brock, Gregory Schill, Karl D. Froyd, Daniel Murphy, Eric Scheuer, Jack Dibb, Joseph Katich, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*  
11:00
- 1IM.7 Excitation Emission Matrix Spectroscopy for Analysis of Chemical Composition of Combustion Generated Particulate Matter.** Gaurav Mahamuni, Jay Rutherford, Justin Davis, Jonathan Posner, Gregory Korshin, IGOR NOVOSSELOV, *University of Washington*  
11:15

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1UA URBAN AEROSOLS I: IN SITU STUDIES OF AEROSOL PROCESSES

ROOM B 117-119

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**Ali Akherati and Rawad Saleh, chairs**

- 1UA.1 Measurement of Formation Rate of Secondary Aerosols in the Urban Atmosphere Using a Dual Chamber System.** SPIRO JORGA, Christos Kaltsonoudis, Aikaterini Liangou, Spyros Pandis, *Carnegie Mellon University*  
9:45
- 1UA.2 SOA Potential of Urban Volatile Chemical Product (VCP) Emissions Explored Using In-Situ Oxidation Flow Reactor.** RISHABH SHAH, Matthew Coggon, Georgios Gkatzelis, Brian McDonald, Antonios Tasoglou, Carsten Warneke, Jessica Gilman, Heinz Huber, Allen Robinson, Albert A. Presto, *Carnegie Mellon University*  
10:00
- 1UA.3 Volatility-Based Measurements of Aerosol Mixing State at an Urban Background Site in the Western United States.** CHIRANJIVI BHATTARAI, Andrey Khlystov, *Desert Research Institute*  
10:15
- 1UA.4 On-Road Measurement of Auto Brake and Tire Wear Emissions.** FARZAN OROUMIYEH, Yifang Zhu, *University of California, Los Angeles*  
10:30
- 1UA.5 Lab-in-the-Field Perturbation Experiments: SOA Formation in an Ambient Matrix.** JEAN RIVERA-RIOS, Adam Wright, Nga Lee Ng, *Georgia Institute of Technology*  
10:45
- 1UA.6 Measuring Dry and Wet Deposition of Atmospheric Aerosols to Surfaces in Syracuse, NY.** ALEXANDER JOHNSON, Cliff Davidson, *Syracuse University*  
11:00
- 1UA.7 Particle Size Distribution in a Polluted Megacity: The Delhi Aerosol Supersite Study.** SHAHZAD GANI, Sahil Bhandari, Kanan Patel, Sarah Seraj, Prashant Soni, Zainab Arub, Gazala Habib, Lea Hildebrandt Ruiz, Joshua Apte, *University of Texas at Austin*  
11:15

**Tuesday 11:45 AM - 12:45 PM**  
**Meet the Aerosol Pioneers**

**Tuesday 1:00 PM - 3:00 PM**  
**Session 2: Poster**

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2AC AEROSOL CHEMISTRY II: POSTERS

EXHIBIT HALL A

- 2AC.1 Chemical Composition and Evaporation Rates of Secondary Organic Aerosol from Cooking Oils.** MANPREET TAKHAR, Craig A. Stroud, Arthur W. H. Chan, *University of Toronto*
- 2AC.2 Secondary Organic Aerosol Yields of Volatile Chemical Products.** SOPHIA CHARAN, Reina Buenconsejo, Yuanlong Huang, John Seinfeld, *California Institute of Technology*

- 2AC.3 Estimation of Biogenic VOC Emissions and the Corresponding Impact on Ozone and Secondary Organic Aerosol Formation in China.** KAI WU, *Chengdu University of Information Technology*
- 2AC.4 Investigating the Atmospheric Age Distribution of Primary and Secondary PM during a Severe Wintertime Pollution Episode.** QI YING, Hongliang Zhang, Jianlin Hu, *Texas A&M University*
- 2AC.5 Heterogeneous Oxidation of SO<sub>2</sub> in Sulfate Production During Nitrate Photolysis at 300 nm: Effect of pH, Relative Humidity, Irradiation Intensity, and the Presence of Organic Compounds.** Masao Gen, Ruifeng Zhang, Dan Dan Huang, Yong Jie Li, CHAK K. CHAN, *City University of Hong Kong*
- 2AC.6 Impacts of Water Partitioning and Polarity of Organic Compounds on Secondary Organic Aerosols over Eastern China.** JINGYI LI, Qi Ying, Jianlin Hu, Jianjun Chen, Haowen Zhang, *Nanjing University of Information Science & Technology*
- 2AC.7 Assessment of Model-Simulated Global Atmospheric Ammonia with Satellite Remote Sensing Measurements.** ARSHAD NAIR, Fangqun Yu, Gan Luo, *The State University of New York at Albany*
- 2AC.8 Acid-base Reactive Uptake of Dimethylamine and Nitric Acid onto Nanoparticles: Cluster Simulations and Nanoparticle Composition Measurements.** SABRINA CHEE, Nanna Myllys, Kelley Barsanti, Bryan Wong, James Smith, *University of California, Irvine*
- 2AC.10 Viscosity of SOA Formed from Stressed and Healthy Pine Tree Emissions under Varying Oxidation Levels.** NATALIE SMITH, Jesse Crescenzo, Anusha P.S. Hettiyadura, Ying Li, Celia Faiola, Alexander Laskin, Allan Bertram, Manabu Shiraiwa, Sergey Nizkorodov, *University of California, Irvine*
- 2AC.11 Investigating Brown Carbon Formation in Ambient Aerosols Undergoing Drying.** VIKRAM PRATAP, Michael Battaglia Jr., Annmarie Carlton, Christopher Hennigan, *University of Maryland, Baltimore County*
- 2AC.12 Effect of Relative Humidity on Secondary Brown Carbon Formation in Evaporating Droplets.** NETHMI KASTHURIARACHCHI, Laura-Helena Rivellini, Xi Chen, Yongjie Li, Alex Lee, *National University of Singapore*
- 2AC.13 Size-resolved Chemical Composition of Sub-40 nm Particles during New Particle Formation and Growth Events in Beijing.** XIAOXIAO LI, Yuyang Li, Chao Yan, Sabrina Chee, Jiming Hao, James Smith, Jingkun Jiang, *Tsinghua University*
- 2AC.17 The Effect of Particle Physicochemical Properties on the Uptake of Semi-volatile and Intermediate-volatility Organic Molecules.** YIMING QIN, Junfeng Wang, Yali Lei, Jianhuai Ye, Scot T. Martin, *Harvard University*
- 2AC.18 Temporal Distribution of Short-Lived Climate Forcers, Atmospheric Processes, and Sources at IGP-CARE Site in India for Two Years in-situ Measurements.** RAVI KANT PATHAK, Harsh Raj Mishra, Bhilok Chand, Jai Prakash, Mattias Hallquist, Gazala Habib, Johan Boman, Håkan Pleijel, *University of Gothenburg, Sweden*
- 2AC.19 Temperature Effects on Sulfuric Acid Aerosol Nucleation and Growth: Initial Results from the TANGENT Study.** LEE TISZENKEL, Chris Stangl, Justin Krasnomowitz, Qi Ouyang, Michael J. Apsokardu, Murray Johnston, Shanhu Lee, *University of Alabama Huntsville*
- 2AC.20 Laboratory Studies of the Photolysis of Particulate Nitrate.** QING YE, Qianwen Shi, Jennifer G. Murphy, Jesse Kroll, *Massachusetts Institute of Technology*
- 2AC.21 Terpene Emissions and Their Oxidation Products in Forest Areas: Insight from Vocus PTR-TOF Measurements.** HAIYAN LI, Pekka Rantala, Kaspar Daellenbach, Jordan Krechmer, Douglas Worsnop, Markku Kulmala, Matthieu Riva, Mikael Ehn, Federico Bianchi, *University of Helsinki*

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2AD SYMPOSIUM: FROM AEROSOL DOSIMETRY AND TOXICOLOGY TO HEALTH II: POSTERS

EXHIBIT HALL A

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- 2AD.1 An Alternative Model for Testing of Acute Respiratory Local Toxic and Physiological Effects Based on in Vitro and Isolated Perfused Lung Technologies.** DETLEF RITTER, Jan Knebel, Sabrina Wilde, Tanja Hansen, Katharina Schwarz, *Fraunhofer ITEM, Germany*
- 2AD.2 Mimicking the Human Respiratory System: Online In Vitro Cell Exposure and Toxicity Assessment of Welding Fume Aerosol.** RYAN WARD, Trevor Tilly, Sarah Robinson, Arantzazu Eiguren Fernandez, Jun Wang, Tara Sabo-Attwood, Chang-Yu Wu, *University of Florida*

- 2AD.3 Applications of the Multi-angle Imager for Aerosols (MAIA) for Air Quality and Health: Connecting Particle Mixtures to Human Health.** ABIGAIL NASTAN, Sina Hasheminassab, Kristal Verhulst, David Diner, Feng Xu, Olga Kalashnikova, Michael Garay, Bart Ostro, *Jet Propulsion Laboratory*
- 2AD.4 A Comprehensive Assessment of the Spatiotemporal Variability of Oxidative Potential of Ambient PM<sub>2.5</sub> in Midwest U.S. using a Semi-Automated Multi-Endpoint ROS-Activity Analyzer (SAMERA).** HAORAN YU, Joseph Puthussery, Yixiang Wang, Vishal Verma, *University of Illinois Urbana-Champaign*
- 2AD.5 New Approach for Source Apportionment of Toxicity by Atmospheric Organic Aerosols.** AKIHIRO FUSHIMI, Daisuke Nakajima, Akiko Furuyama, Go Suzuki, Tomohiro Ito, Kei Sato, Yuji Fujitani, Yoshinori Kondo, Akinori Takami, *National Institute for Environmental Studies, Japan*
- 2AD.6 Using a Quartz Crystal Microbalance to Measure the Mass Concentration of Combustion Particle Suspensions.** KAMALJEET KAUR, Isabel C. Jaramillo, Hamid Ghandehari, Chris Reilly, Robert Paine, Kerry Kelly, *University of Utah*
- 2AD.7 Characterization of Air-Liquid-Interface (ALI) in vitro Exposure Systems for E-vapor Aerosol Applications.** JINGJIE ZHANG, Michael Oldham, Russell Wolz, Pavel Kosachevsky, Utkarsh Doshi, I. Gene Gilman, Kyeonghee Lee, *Altria Client Services LLC*
- 2AD.8 Exposure to Portable Gasoline Generator Emissions and Its Effects on Renal Function and Lung Histology using Rat Model.** GODSON ANA, Emmanuel Obansa, *University of Ibadan*
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## 2AE AEROSOL EXPOSURE I: POSTERS

### EXHIBIT HALL A

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- 2AE.1 Applying Mass Spectral Techniques to Identify the Chemical Composition of e-Cigarette Smoke and Its Surrogates: Implications for Source Apportionment.** YUE ZHANG, Sarah Suda Petters, Manjula Canagaratna, Jonathan Thornburg, Jason Surratt, *University of North Carolina at Chapel Hill*
- 2AE.3 Exposure to Particulate Matter at an Outdoor Marijuana Consuming Event.** TONGKE ZHAO, Kai-Chung Cheng, Wayne Ott, Lance Wallace, Lynn M. Hildemann, *Stanford University*
- 2AE.4 Spatiotemporal Estimates of Surface PM<sub>2.5</sub> Concentrations in the Western U.S. Using NASA MODIS Aerosol Retrievals and Data Assimilation Techniques.** S. MARCELA LORÍA-SALAZAR, Cesunica E. Ivey, Howard H. Chang, Jens Redemann, Heather Holmes, *University of Oklahoma*
- 2AE.5 Evaluation of PM<sub>2.5</sub> Exposures for an Environmental Justice Community Using a Low-Cost PM Sensor.** Seung-Hyun Cho, Lisa Cicutto, Nalyn Siripanichgon, Michelle McCombs, Molly McCullough, Krysten Crews, Cindy Chang, Ryan Chartier, JONATHAN THORNBURG, Gregory Harshfield, Gregg Thomas, Michael Ogletree, Bradley Rink, *RTI International*
- 2AE.6 Evaluation of the Size Distribution and Morphology of Submicrometer Particles Generated from Electrosurgical Tools.** YUECHEN QIAO, Austin Andrews, Chase Christen, Brian MacLachlan, Samir Khariwala, Bernard Olson, Christopher Hogan Jr., *University of Minnesota*
- 2AE.7 Changes in Emissions Rates and Exposure of PM<sub>2.5</sub>, eBC, and UFP Attributable to the Renewal of a Bus Rapid Transit System Fleet.** DANIELA MENDEZ, Sebastian Espitia, Andres Felipe Rosero, Boris Galvis, Ricardo Morales Betancourt, *Universidad de los Andes*
- 2AE.8 Exposure to Inhalable Aerosols from Different Potential Factors in Building and Associated with Trace Elements.** HYEON-JU OH, Jong-Ryeul Sohn, Jongbok Kim, *Rutgers, The State University of New Jersey*
- 2AE.9 Inhalation Exposure Characterization for Spray Products.** KATHARINA SCHWARZ, Wolfgang Koch, *Fraunhofer ITEM, Germany*
- 2AE.10 Stability Testing of Large-Scale Whole-Body Inhalation Exposure Systems for Smoking Study.** ZUOCHENG WANG, Amit Gupta, Steve Behringer, Zack Novak, Jan Satola, Ed Psurny, Sam Harbo, *Battelle*
- 2AE.11 Indoor and Outdoor PM<sub>4</sub> Continuous Monitoring in a Low Income Community of Highveld Priority Area of South Africa.** Joseph Adesina, Stuart Piketh, Marvin Qhekwana, Roelof Burger, Brigitte Language, Gabi Mkhathswa, *North-West University, South Africa*

**2AE.12 Organic Extracts of PM2.5 in Seoul Mediates Neutrophilic Inflammation and Aging in Lung Epithelial Cells.** JIEUN PARK, Kyoung-Hee Lee, Jongbae Heo, Chang-Hoon Lee, Seung-Muk Yi, Chul-Gyu Yoo, *Seoul National University, Seoul, Korea*

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2BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH II: POSTERS  
EXHIBIT HALL A

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- 2BC.1 Effects of Fuel Moisture Content on Biomass Emissions from a Rocket-Elbow Cookstove.** Lizette Van Zyl, Jessica Tryner, Kelsey Bilsback, Nicholas Good, Arsineh Hecobian, Amy P. Sullivan, Yong Zhou, Jennifer Peel, JOHN VOLCKENS, *Colorado State University*
- 2BC.2 Increasing Global Lung-Cancer Risk Due to Biomass Combustion in the 21st Century.** Sijia Lou, MANISHKUMAR SHRIVASTAVA, Richard Easter, Jerome Fast, Philip Rasch, Huizhong Shen, Staci L. Simonich, Shu Tao, Alla Zelenyuk, Steven Smith, *Pacific Northwest National Laboratory*
- 2BC.3 The Impact of Biomass Fuel Emissions on Women's Health in Rural Punjab.** NABEELA FARAH, *University of Agriculture, Department of Rural Sociology*
- 2BC.4 Quantifying the Impact of Biomass Burning on Aerosol Concentrations in Bogota, Colombia: Detection of Biomass Burning Tracers and Model Simulations.** Maria Alejandra Rincón, Amy P. Sullivan, Juan Manuel Rincón, Juan Felipe Mendez, Karen Ballesteros, RICARDO MORALES BETANCOURT, *Universidad de los Andes*
- 2BC.5 Measurements to Determine Mixing State of Black Carbon Emitted from the 2017/2018 California Wildfires and Urban Los Angeles.** JOSEPH KO, Trevor Krasowsky, George Ban-Weiss, *University of Southern California*
- 2BC.6 Prediction of Organic Aerosol Precursor Emission from Wood Pyrolysis.** MARIAM FAWAZ, Tami Bond, *University of Illinois at Urbana Champaign*
- 2BC.10 Observations of Strong Secondary Aerosol and Ozone Formation in Biomass Burning Plumes in Southern Africa.** VILLE VAKKARI, Johan Paul Beukes, Miroslav Josipovic, Pieter G. van Zyl, *Finnish Meteorological Institute, Helsinki, Finland*
- 2BC.11 Seasonality and Inter-site Variability in Cookstove Emissions Measured in a Multi-year Cookstove Intervention Trial in Rural India.** MOHAMMAD MAKSIMUL ISLAM, Roshan Wathore, Grishma Jain, Karthik Sethuraman, Hisham Zerriffi, Julian Marshall, Rob Bailis, Andrew Grieshop, *North Carolina State University*
- 2BC.12 Identifying Functional Groups and Predicting OC-EC in Cookstove Source Emissions.** EMILY LI, Michael Hays, James Jetter, Guofeng Shen, Satoshi Takahama, Ann Dillner, *U.S. EPA*
- 2BC.13 Black Carbon Emissions from Residential Wood Combustion and Drivers for Further Research.** REBECCA TROJANOWSKI, Arthur J. Sedlacek, Ernie R. Lewis, Vasilis Fthenakis, Thomas Butcher, *Brookhaven National Laboratory*
- 2BC.14 Measuring Particle Number Concentration from Woodburning Stoves.** NICOLE VITILLO, Patricia Fritz, Jake Lindberg, Thomas Wainman, Nathan Walz, Todd Crawford, Rebecca Trojanowski, Thomas Butcher, *New York State Dept. of Health*
- 2BC.15 In-Stack Aethalometry Measurements of Woodburning Stoves.** JAKE LINDBERG, Patricia Fritz, Nicole Vitillo, Rebecca Trojanowski, Thomas Butcher, Thomas Wainman, Nathan Walz, Todd Crawford, *New York State Dept. of Health*
- 2BC.16 Source Apportionment and Mass Measurement of Fine Particulate Matter Arising from Massive Southern Oregon and Northern California Fires during the Summer of 2018.** DAVID GOBELI, Jennifer Brown, George Allen, *Met One Instruments, Incorporated*
- 2BC.17 Smoke Aerosol Radiocarbon Measurements from Indonesian Fires Provide Evidence for Burning of Millennia-aged Peat.** ELIZABETH WIGGINS, Claudia Czimczik, Guaciara dos Santos, Xiaomei Xu, Yang Chen, Jim Randerson, Charles Harvey, Fuu Ming Kai, Liya Yu, *NASA*
- 2BC.19 Networks of Multi-wavelength MicroAeth Monitors Provide Tracer of Ground Level Air Pollution Impacts of Long Range Transport of Wildfire Plumes in NYC.** STEVEN CHILLRUD, Qiang Yang, Beizhan Yan, Mark Arend, Fred Moshary, Jeff Blair, Yonghua Wu, Tanja Dobovicnik, Michele Markowitz, Wade McGillis, *LDEO of Columbia University*
- 2BC.20 Impact of Long-Range Transport of Central America Biomass Burning Emissions on Air Quality in Texas.** QIANJIN ZHENG, David Ramirez, Min Zhong, *Texas A&M University-Kingsville*

- 2BC.21 Single Particle Mass Spectrometry Observations of Long Range Transported Biomass Burning Aerosols in Michigan.** JAMY LEE, Brady Anderson, Peter-Philip Booth, Jun Liu, Peng Xian, Kerri Pratt, *University of Michigan*
- 2BC.22 Emission and Evolution of Submicron Aerosol Composition in Wildfire Smoke in the Western United States.** LAUREN GAROFALO, Ezra Levin, Matson A. Pothier, Sonia Kreidenweis, Delphine K. Farmer, *Colorado State University*
- 2BC.23 Characterization of Biomass Burning Aerosols Produced in the Laboratory with a Light-Scattering Aerosol Mass Spectrometer and Ultraviolet/Visible Absorption Spectroscopy of Water-Soluble Organic Carbon.** ANN M. MIDDLEBROOK, Rebecca Washenfelder, Alessandro Franchin, Gabriela Adler, Matthew Coggon, Kara D. Lamb, Katherine M. Manfred, Joshua P. Schwarz, Vanessa Selimovic, Nick Wagner, Caroline Womack, Robert J. Yokelson, *NOAA ESRL*
- 2BC.24 Characterizing Aerosol Emissions from Wildfires in the Western US.** EZRA LEVIN, Kevin Barry, Kathryn Moore, John Ortega, Lauren Garofalo, Matson A. Pothier, Darin Toohey, Mike Reeves, Jakob Lindaas, Ethan Emerson, Delphine K. Farmer, Sonia Kreidenweis, Paul DeMott, Emily Fischer, *Colorado State University*
- 2BC.25 Estimating the Contribution of Significant Volatile Organic Compounds to Secondary Organic Aerosol from Biomass Cookstove Emissions.** ADITYA SINHA, Ingrid George, Michael Hays, Andrew Grieshop, *North Carolina State University*
- 2BC.26 Chemical Composition and Morphological Analysis of Internally Mixed Mineral Dust and Biomass Burning Aerosols.** JAY TOMLIN, Johannes Weis, Swarup China, Daniel Veghte, Matthew Fraund, Naama Reicher, Quanfu He, Chunlin Li, Yinon Rudich, Ryan Moffet, Mary Gilles, Alexander Laskin, *Purdue University*
- 2BC.27 Optical Characterization of Fresh and Photochemically-Aged Aerosols Emitted from Laboratory Siberian Peat Burning.** Michealene Iaukea-Lum, Chiranjivi Bhattarai, Deep Sengupta, Vera Samburova, Andrey Khlystov, Adam Watts, W. Patrick Arnott, HANS MOOSMULLER, *Desert Research Institute*
- 2BC.28 Polar Fraction of Semi-volatile Organic Compounds in Biomass Burning Emissions and Their Chemical Transformations during Aging with Oxidation Flow Reactor.** DEEP SENGUPTA, Chiranjivi Bhattarai, Vera Samburova, Adam Watts, Hans Moosmuller, Andrey Khlystov, *Desert Research Institute*
- 2BC.29 Physical, Chemical and Optical Properties of Wildfire Aerosols.** SWARUP CHINA, Matthew Brege, Simeon Schum, Daniel Veghte, Kaitlyn J. Suski, Gourihar Kulkarni, ManishKumar Shrivastava, Lynn Mazzoleni, Alla Zelenyuk, *Pacific Northwest National Laboratory*
- 2BC.30 Extreme Molecular Complexity Resulting in a Continuum of Carbonaceous Species in Biomass Burning Tar Balls.** MATTHEW BREGE, Swarup China, Alla Zelenyuk, Simeon Schum, Lynn Mazzoleni, *Michigan Technological University*
- 2BC.31 Brown Carbon Formation from Nighttime Chemistry of Unsaturated Heterocyclic Volatile Organic Compounds.** Huanhuan Jiang, Alexander Frie, Avi Lavi, Jin Chen, Haofei Zhang, Roya Bahreini, YING-HSUAN LIN, *University of California, Riverside*
- 2BC.32 Development of Furan Oxidation Mechanism from OH and NO<sub>3</sub> Oxidation within Biomass-Burning Regimes via Chamber Experiments.** BENJAMIN BROWN-STEINER, Matthew Alvarado, Nga Lee Ng, Taekyu Joo, *AER*
- 2BC.33 Secondary Organic Aerosol Formation from Reaction of 3-Methylfuran with Nitrate Radicals.** TAEKYU JOO, Jean Rivera-Rios, Masayuki Takeuchi, Matthew Alvarado, Nga Lee Ng, *Georgia Institute of Technology*
- 2BC.34 Emissions, Transport, and Chemistry of Smoke from Western U.S. Wildfires.** MEGAN BELA, Natalie Kille, Stuart McKeen, Ravan Ahmadov, Gabriel Pereira, Chris Schmidt, R. Bradley Pierce, Susan O'Neill, Xiaoyang Zhang, Shobha Kondragunta, Christine Wiedinmyer, Rainer Volkamer, *CU CIRES and NOAA ESRL*
- 2BC.35 Impacts of Brown Carbon on Surface Shortwave Radiation in the California Sacramento Valley in Summer 2018.** CHELSEA CORR, Maosi Chen, Zhibin Sun, Yan'an Liu, George Janson, Becky Olson, Scott Simpson, Amy P. Sullivan, Emily Fischer, Wei Gao, *Colorado State University*
- 2BC.36 Functional Group Analysis of Wildfire-Influenced Free Tropospheric Organic Aerosol using Ultrahigh Resolution Tandem Mass Spectrometry.** SIMEON SCHUM, Claudio Mazzoleni, Bo Zhang, Paulo Fialho, Lynn Mazzoleni, *Michigan Technological University*
- 2BC.37 On the Role of NO<sub>x</sub> in Biomass Burning Plumes: A Box Model Perspective.** QIAOYUN PENG, Brett Palm, Sam Hall, Eric Apel, Rebecca Hornbrook, Alex Jarnot, Nicola Blake, Frank Flocke, Emily Fischer, Joel A. Thornton, *University of Washington, Seattle, WA*



- 2BC.38 Chemical Composition of Biomass Burning Particles Measured with a Soot Particle Aerosol Mass Spectrometer Downwind during the BBOP Study.** TIMOTHY ONASCH, John Shilling, Arthur J. Sedlacek, Edward Fortner, Mikhail Pekour, Shan Zhou, Sonya Collier, Qi Zhang, Andrew Freedman, Leah Williams, Lawrence Kleinman, *Aerodyne Research, Inc.*
- 2BC.39 TD-DFT Investigation of the UV-Vis Spectra of Organonitrogen Chromophores in Brown Carbon.** JIN CHEN, Emmy Rodriguez, Huanhuan Jiang, Alexander Frie, Haofei Zhang, Roya Bahreini, Ying-Hsuan Lin, *University of California, Riverside*
- 2BC.40 Assessing the Impact of Biomass Burning on Ambient Air Toxics and Ozone Concentration in the Pacific Northwest.** ODELLE HADLEY, Anthony Cutler, Ruth Schumaker, Jenna Nelson, Robin Bond, *Olympic Region Clean Air Agency*
- 2BC.41 The Cytotoxicity of Brown Carbon and its Dependence on Combustion Conditions and Light Absorption Properties.** KHAIRALLAH ATWI, Arnab Mondal, Jitendra Pant, Zezhen Cheng, Omar El Hajj, Hitesh Handa, Rawad Saleh, *University of Georgia*
- 2BC.42 Chamber Studies Investigating Secondary Organic Aerosol Formation and Properties from Daytime and Nighttime Oxidation of Oxygenated Aromatics Emitted by Wildfires.** CARLEY D. FREDRICKSON, Brett Palm, Amy P. Sullivan, Yingjie Shen, Shane Murphy, Ben H. Lee, Xuan Zhang, Joel A. Thornton, *University of Washington*
- 2BC.43 Comparison of Cookstove Emissions and Performance Results Using the Water Boiling Test v4 and the ISO 19867-1 Testing Protocols.** WYATT CHAMPION, Craig Williams, Larry Virtaranta, Mark Barnes, James Jetter, *ORISE, U.S. EPA*

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2CC AEROSOLS, CLOUDS, AND CLIMATE II: POSTERS

EXHIBIT HALL A

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- 2CC.1 Aerosol Measurements Using Unmanned Aerosystems.** FAN MEI, Darielle Dexheimer, Jason Tomlinson, Mikhail Pekour, Matt Newburn, Albert Mendoza, Casey Longbottom, Lexie Goldberger, Beat Schmid, *Pacific Northwest National Laboratory*
- 2CC.2 Deriving CCN from High-Spectral Resolution Lidar Measurements of Aerosol Extinction and Backscatter.** RICHARD MOORE, Kyle Dawson, Sharon P. Burton, Snorre Stamnes, Richard Ferrare, Chris Hostetler, Luke Ziemba, Ewan Crosbie, Edward Winstead, Yohei Shinozuka, Kenneth Thornhill, Bruce Anderson, *NASA Langley Research Center*
- 2CC.3 Improving Estimates of Ground-Level PM<sub>2.5</sub> by Application of High Spectral Resolution Lidar.** XINYI LING, Nicholas Meskhidze, Kyle Dawson, Matthew Johnson, Barron Henderson, Sharon P. Burton, Chris Hostetler, Richard Ferrare, *NC State*
- 2CC.4 Small Amounts of Alcohol Modify Insoluble Cloud Condensation Nuclei.** Farima Barati, QI YAO, Akua Asa-Awuku, *University of Maryland, College Park*
- 2CC.5 Measurements of Removal Rate of Interstitial Aerosols in a Cloudy, Turbulent Environment.** ABU SAYEED MD SHAWON, Gregory Kinney, Prasanth Prabhakaran, Jesse C. Anderson, Raymond Shaw, Will Cantrell, *Michigan Technological University*
- 2CC.6 Investigating Different Salt Ions Impact on Cloud Condensation Nucleus (CCN) Activity of Black Carbon Aerosol.** QI YAO, Howard Fairbrother, Alexa Wallace, Akua Asa-Awuku, *University of Maryland*
- 2CC.7 Air Mass Characterization for the Megacity Delhi: Impacts on Aerosol Hygroscopicity and CCN Prediction.** ZAINAB ARUB, Sahil Bhandari, Shahzad Gani, Prashant Soni, Joshua Apte, Lea Hildebrandt Ruiz, Gazala Habib, *Indian Institute of Technology Delhi*
- 2CC.8 Characterization of Rural Aerosol Hygroscopicity and Chemical Composition Influenced by Fog and Anthropogenic Emissions in Central Taiwan.** CHIA-LI CHEN, Ting-Yu Chen, Hui-Ming Hung, Ping-Wen Tsai, Charles C.K. Chou, Wei-Nai Chen, *National Taiwan University*
- 2CC.9 Simulation of Air Pollution and Its Meteorological Feedbacks in Africa.** PENGFEI WANG, Hao Guo, Yuan Wang, Peng Wang, Qi Ying, Hongliang Zhang, *Louisiana State University*
- 2CC.10 Contribution of Particulate Matter Components to Hydroxyl Radical Formation by Aerosols in Simulated Cloud Water and High Activity Associated with Biomass Burning Aerosol.** Xiaobi M. Kuang, David Gonzalez, J. Adlin Scott, Kennedy Vu, Tiffany Charbouillot, Alam Hasson, Lelia Hawkins, SUZANNE E. PAULSON, *UCLA*

**2CC.15 Predicting the Phase State of Secondary Organic Aerosol and Understanding its Influences on the Heterogeneous Ice Nucleation.** YUE ZHANG, Martin Wolf, Shachi Katira, Jason Injae Jung, Abigail Koss, Peyton Spencer, Xiaoli Shen, Andrew Lee, Andrew Lambe, Wen Xu, Leonid Nichman, Yuzhi Chen, Manjula Canagaratna, Zhenfa Zhang, Avram Gold, John Jayne, Douglas Worsnop, Paul Davidovits, David Chandler, Timothy Onasch, Charles Kolb, Jesse Kroll, Jason Surratt, Daniel Cziczo, *Univ. of North Carolina, Chapel Hill/Aerodyne Research, Inc.*

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2HA HEALTH-RELATED AEROSOLS I: POSTERS

EXHIBIT HALL A

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- 2HA.1 Oxidative Potential and Cytotoxicity of Ambient Fine Particulate Matter During Winter at Beijing, China and Gwangju, Korea.** Ma. Cristine Faye Denna, Lucille Joanna Borlaza, Hangyul Song, Enrique Cosep, ILHWA SEO, Hyunok Maeng, Minhan Park, Min-Suk Bae, Kihong Park, *Gwangju Institute of Science and Technology*
- 2HA.2 Particle Size and Concentration of Aerosols Produced by Electronic Nicotine Delivery Systems.** SHERRIE ELZEY, Andrea Tiwari, Jon Ebbert, Slobodan Macura, *TSI Incorporated*
- 2HA.3 Field and Laboratory Measurements of Aerosolized Blue-Green Algal Toxins in South Florida.** MICHAEL SHERIDAN, Haley Plaas, Haley Royer, Lilly Blume, Chuyan Wan, Dhruv Mitroo, Kimberly Popendorf, Larry Brand, Cassandra Gaston, *University of Miami*
- 2HA.6 The Influence of Temperature on Microcystin Concentration in Bubble-Generated Lake Spray Aerosols.** HALEY PLAAS, Kimberly Popendorf, Cassandra Gaston, Larry Brand, *University of Miami*
- 2HA.7 The Characterization of Emissions from Sawing and Sanding Corian®, a Solid-Surface Composite Material.** Seungkoo Kang, CHAOLONG QI, *NIOSH*
- 2HA.8 Quantification of OH Radicals Generated by Secondary Organic Aerosols with Fluorometric Assay and Electron Paramagnetic Resonance Spectrometry.** JINLAI WEI, Ting Fang, Manabu Shiraiwa, *University of California, Irvine*
- 2HA.9 Impacts of Adding Dispersant on Aerosolization of Fine and Ultrafine Particulate Matter after an Oil Spill.** NIMA AFSHAR-MOHAJER, Lakshmana Dora, Andres Lam, Ana Rule, Joseph Katz, Kirsten Koehler, *Johns Hopkins School of Public Health*
- 2HA.10 Aerosol Size Distribution and Aldehyde Concentration Measurements of the Sub-ohm Electronic Nicotine Delivery Systems.** VLADIMIR MIKHEEV, Stephanie S. Buehler, Alexander Ivanov, *Battelle Memorial Institute*
- 2HA.12 Real-Time Chemical Puff Profiling of Vapor Product Aerosol with Proton Transfer Mass Spectrometry.** Adam M. Ozvald, Devon C. O'Regan, Alessandra L. Paul, NADJA HEINE, *Juul Labs, Inc.*
- 2HA.14 Understanding the Glottis Motion Effect on Aerosol Transport and Deposition in a Subject-Specific Human Upper Airway Configuration.** JIANAN ZHAO, Yu Feng, *Oklahoma State University*
- 2HA.17 Characterization and Performance Evaluation of a Nose-only Inhalation (NOI) Exposure System for a 90-Day Repeated-Dose NNK Inhalation Toxicity Study.** Shu-Chieh Hu, Yunan Tang, Seonggi Min, Hyun-Ki Kang, Dong-Jin Yang, Mallikarjuna Basavarajappa, Estatira Sepehr, Raul Trbojevich, Matthew Bryant, JINGHAI YI, Susan Chemerynski, Steven Yee, Hans Rosenfeldt, R. Philip Yeager, Paul Howard, *NCTR-FDA*
- 2HA.20 Development and Comparison of Complementary Methods to Study Skin and Inhalational Exposure to Simulant Pathogens During Personal Protective Equipment Doffing.** JENNIFER THERKORN, David Drewry, Jennifer Andonian, Lauren Benishek, Carrie Billman, Ellen Forsyth, Brian Garibaldi, Elaine Nowakowski, Kaitlin Rainwater-Lovett, Lauren Sauer, Maggie Schifffhauer, Lisa Maragakis, *Johns Hopkins University Applied Physics Laboratory*
- 2HA.21 PM2.5 Generated during Rapid Failure of Fiber-reinforced Concrete Induces TNF-alpha Response in Macrophages.** LUPITA MONTOYA, Harish Gadde, Wyatt Champion, Ning Li, Mija Hubler, *University of Colorado Boulder*
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2IM INSTRUMENTATION AND METHODS II: POSTERS

EXHIBIT HALL A

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- 2IM.1 Traffic Related Aerosols Measurement with HR-ELPI+ Using Sintered Collection Plates.** ANSSI ARFFMAN, Peter Lambaerts, Markus Nikka, Erkki Lamminen, *Dekati Ltd.*

- 2IM.2 Instrument Artifacts Lead to Uncertainties in Parameterizations of Cloud Condensation Nucleation.** JESSICA MIRRIELEES, Sarah Brooks, *Texas A&M University*
- 2IM.3 Improved Coincidence Correction in Condensational Particle Counters.** STEVEN SPIELMAN, Gregory Lewis, Susanne Hering, *Aerosol Dynamics Inc.*
- 2IM.5 The Caltech nano-Scanning Electrical Mobility Spectrometer (nSEMS): Design, Modeling, and Characterization for Size Distribution Measurements in the Low Nanometer Regime.** STAVROS AMANATIDIS, Weimeng Kong, Huajun Mai, Yuanlong Huang, Richard Flagan, *The CLOUD Collaboration, California Institute of Technology*
- 2IM.6 Development of a Respirable Virtual-Cyclone Sampler.** HONG-YANG CHEN, Chih-Wei Lin, Ting-Ju Chen, Sheng-Hsiu Huang, Yu-Mei Kuo, Chih-Chieh Chen, *National Taiwan University*
- 2IM.8 A New Aerosol Dynamics Scanning WCPC.** GREGORY LEWIS, Arantazu Eiguren Fernandez, Steven Spielman, Susanne Hering, *Aerosol Dynamics Inc.*
- 2IM.9 Laboratory Evaluation of an Engine Exhaust Particle Sizer (EEPS) Spectrometer for Fast Measurements of Particle Number Size Distributions in Aircraft Exhaust Plumes.** YOSHIKO MURASHIMA, Hiromu Sakurai, Yuji Fujitani, Nobuyuki Takegawa, *AIST*
- 2IM.11 Development of an Aerosol Concentrator/Diffusion Battery Tandem for Evaluating the Toxicological Properties of Concentrated Ambient Accumulation Mode Particles in Controlled Inhalation (In-vivo) Exposure Studies.** MILAD PIRHADI, Amirhosein Mousavi, Sina Taghvaei, Mohammad Sowlat, Constantinos Sioutas, *University of Southern California*
- 2IM.12 Light Absorption by Ammonium Sulfate with Carbon Black Inclusions: Experiments, Mie Theory and Effective Medium Approximations.** JAMES RADNEY, Christopher Zangmeister, *National Institute of Standards and Technology*
- 2IM.13 Assessing Respirator Protection Factor with Novel Personal Devices.** MARGARET SIETSEMA, Thomas Peters, Allison Persing, K.R. Farmer, *University of Iowa*
- 2IM.14 Development of an Innovative Aerosol Generation Setup for In-vivo Exposure Studies.** SINA TAGHVAEE, Amirhosein Mousavi, Mohammad Sowlat, Constantinos Sioutas, *University of Southern California*
- 2IM.15 Development of an EHD Induced Wind Driven Personal Exposure Monitor and In-situ Analysis for Characterization of Exposure.** RAVI SANKAR VADDI, Gaurav Mahamuni, Igor Novosselov, *University of Washington*
- 2IM.16 Retrieval of High Time Resolution Growth Factor Probability Density Function from a Humidity-controlled Fast Integrated Mobility Spectrometer.** YANG WANG, Guangjie Zheng, Steven Spielman, Tamara Pinterich, Susanne Hering, Jian Wang, *Washington University in St. Louis*
- 2IM.17 Thermal Decomposition Characterization of Filter Inlet for Gases and AEROSOLS (FIGAERO) Coupled with Chemical Ionization Time-of-Flight Mass Spectrometer (ToF-CIMS).** LAURA YANG, Masayuki Takeuchi, Nga Lee Ng, *Georgia Institute of Technology*
- 2IM.18 Effects of Fluorescence Removal on the Raman Spectra of Single Atmospheric Aerosol Particles.** DAVID DOUGHTY, Steven Hill, *CCDC Army Research Laboratory*
- 2IM.19 Measurement of Aircraft Engine Soot Emissions using the ESCOM – the Engine Soot Compliance Monitor.** ANDREW FREEDMAN, Zhenhong Yu, Richard Miake-Lye, Timothy Onasch, *Aerodyne Research, Inc.*
- 2IM.20 Theoretical and Experimental Analysis of the Core Sampling Method: Reducing Diffusional Losses in Aerosol Sampling Line.** Yueyun Fu, Mo Xue, Runlong Cai, Juha Kangasluoma, JINGKUN JIANG, *Tsinghua University*
- 2IM.22 The Transfer Function of a Drift Tube Ion Mobility Spectrometer-Condensation Particle Counter Combination.** JIHYEON LEE, David Buckley, Jikku Thomas, Christopher Hogan Jr., *University of Minnesota*
- 2IM.23 Comparison between Dimethyl phthalate and Diethylene glycol as a Working Fluid of a Laminar Flow Particle Size Magnifier.** KENJIRO IIDA, Hiromu Sakurai, Tetsuji Koyama, Tsuyoshi Taishi, *AIST*
- 2IM.24 PM<sub>2.5</sub> Concentration Prediction Using Convolutional Long Short-Term Neural Network.** KAZUSHI INOUE, Ayumi Iwata, Tomoaki Okuda, *Keio University*

- 2IM.25 Accelerated Size Distribution Measurements using a Scanning Aerodynamic Aerosol Classifier.** TYLER J. JOHNSON, Jonathan Symonds, Jason S. Olfert, Adam M Boies, *University of Cambridge*
- 2IM.26 Improvement of Cyclone Sampler and Its Performance for Chemical Composition and Toxicity Measurement.** TAKUYA KATORI, Ayumi Iwata, Daiki Shishido, Yoshihiro Terui, Tomoaki Okuda, *Keio University*
- 2IM.27 Comprehensive Detection of All Analytes in a Large Chromatographic Dataset of Complex Environmental Samples.** SUNGWOO KIM, Gabriel Isaacman-VanWertz, *Virginia Polytechnic Institute and State University*
- 2IM.28 An Aerosol Particle Monitor for Use in Micro-Gravity Cabin Exposure Studies.** NATHAN KREISBERG, Steven Spielman, Gregory Lewis, Susanne Hering, Tim Gordon, Gavin McMeeking, *Aerosol Dynamics Inc*
- 2IM.29 Elucidation of Electrostatic Charging Characteristics of Radioactive Cs-Bearing Particles by Kelvin Probe Force Microscopy.** KEIICHI KUROSAWA, Ayumi Iwata, Yukihiko Satou, Yoshinari Abe, Yasuhito Igarashi, Tomoaki Okuda, *Keio University*
- 2IM.30 Recent Developments and Improvements to a Continuous Flow Diffusion Chamber for Measuring Ice Nucleating Particles.** GAVIN MCMEEKING, Ezra Levin, Tim Gordon, Kai Bi, Russell Perkins, Ping Chen, Paul DeMott, *Handix Scientific*
- 2IM.31 A Variable Residence Hygroscopicity Tandem Differential Mobility Analyzer (VRHTDMA).** DEANNA MYERS, James Smith, Jonathan Abbott, *University of California, Irvine*
- 2IM.32 Suggested Calibrations for Aerodyne Aerosol Mass Spectrometry to Reduce Uncertainty and to Improve Quantification.** BENJAMIN A. NAULT, Hongyu Guo, Pedro Campuzano-Jost, Douglas Day, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*
- 2IM.33 Investigating Submicron Inorganic Salts Biases Collected on Filters Collected in Airborne Campaigns.** BENJAMIN A. NAULT, Pedro Campuzano-Jost, Douglas Day, Jack Dibb, Karl D. Froyd, Eric Scheuer, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*
- 2IM.34 MFAssignR: Software Tools for Molecular Formula Assignment of Organic Aerosol.** SIMEON SCHUM, Lynn Mazzoleni, Laura Brown, *Michigan Technological University*
- 2IM.35 Measurement of Sub 3 nm Flame-generated Particles Using Boosted Butanol CPC 3776 and DEG CPC.** GIRISH SHARMA, Mengda Wang, Michel Attoui, Pratim Biswas, *Washington University in St Louis*
- 2IM.37 Analysis of Organic Composition on PM<sub>2.5</sub> Aerosols by Two-Dimensional Gas Chromatography Mass Spectrometry (GCxGC-MS).** JIA-LIN CHARLIE WANG, Neng-Huei Lin, *National Central University, Taiwan*
- 2IM.38 The Comprehensive Thermal Desorption Aerosol Gas Chromatograph (cTAG) for Consistent Quantification of VOCs, IVOCs and SVOCs.** REBECCA WERNIS, Nathan Kreisberg, Robert Weber, Susanne Hering, Allen Goldstein, *University of California, Berkeley*
- 2IM.39 A Quadrupole Electrodynamic Trap Coupled to Single Droplet Mass Spectrometry: A Tool to Study Aerosol Heterogeneous Reactivity.** MEGAN WILLIS, Grazia Rovelli, Kevin Wilson, *Lawrence Berkeley National Laboratory*
- 2IM.40 Ambient Measurements of Emissions from Biomass Combustion Using a Portable Measurement Backpack.** MARILYN WURTH, Brian P. Frank, Jake Lindberg, Nicole Vitillo, Patricia Fritz, Shida Tang, Gil H. LaDuke, David Guerrieri, *New York State Dept. of Environmental Conservation*
- 2IM.41 Application of Synchrotron Radiation for the Morphology and Internal Structure of Individual Aerosols.** Chao-Wei Lai, Yu-Han Chen, Wan-Yi Chen, Chun-Chieh Wang, Yao-Tung Lin, LI-HAO YOUNG, *China Medical University, Taiwan*
- 2IM.42 Ultrafine Particles – Effects of Aerosol Material on Different Nanoparticle Counters.** AXEL ZERRATH, Andrea Tiwari, Patrick Roth, *TSI Incorporated*
- 2IM.43 Imaging Aqueous Submicron Particles through the Development of a Flash Freeze Technique.** THERESA KUCINSKI, Miriam Freedman, *The Pennsylvania State University*
- 2IM.44 Transmission of Charged Nanoparticles through an Adverse Axial Electric Field and Its Improvement.** RUNLONG CAI, Jingkun Jiang, *Tsinghua University, China*
- 2IM.45 Lab-based Test of Palm-sized Aethalometer for Indoor Aerosol Measurement.** JEONGHOON LEE, *KOREATECH*

- 2IM.46 Real-Time Measurement of Airborne Carbon Nanotubes.** Lina Zheng, PRAMOD KULKARNI, *Centers for Disease Control and Prevention, NIOSH*
- 2IM.47 An Exhaled Breath Aerosol (EBA) Collector for High Collection Efficiency of Particles Down To 10nm.** ARANTZAZU EIGUREN FERNANDEZ, Gregory Lewis, Susanne Hering, Somayeh Youssefi, Donald Milton, *Aerosol Dynamics Inc*
- 2IM.48 Orthographic Imaging of Free-Flowing Aerosol Particles.** JESSE LANING, Matthew Berg, *Kansas State University*
- 2IM.49 Development of a New Dilution System for Continuous Measurement of Particle Concentration in the Exhaust from a Coal-fired Power Plant.** Dongho Shin, Kee-Jung Hong, Hak-Joon Kim, Bangwoo Han, YONG-JIN KIM, *Korea Institute of Machinery & Materials*
- 2IM.50 Development of a Novel Particle Mass Spectrometer for Online Measurements of Refractory Sulfate Aerosols.** YUYA KOBAYASHI, Yu Ide, Nobuyuki Takegawa, *Tokyo Metropolitan University*
- 2IM.51 A Test and Evaluation (T and E) Capability for Aerosolised Hazardous Materials.** SARAH MARCHANT, Peter Jones, Will Sellors, Maurice Walker, Andy Martin, Buckley Margaret, *Dstl, Porton Down, Salisbury, Wiltshire, SP4 0JQ, UK*
- 2IM.52 A Comprehensive Isomeric Identification of Particle-Phase Organic Nitrates by Gas Chromatography and Time-Of-Flight Mass Spectrometry Coupled with Electron Capture Ionization.** XIAODI SHI, Xinghua Qiu, *Peking University*
- 2IM.53 Development of a Direct-Reading Inhalable Particle Sizer with Elemental Composition Analysis.** JAMES SIPICH, John Volckens, Christian L'Orange, Azer Yalin, Kimberly Anderson, Christopher Limbach, *Colorado State University*
- 2IM.54 Assessment of Acrolein in Air Samples Using Pentafluorophenylhydrazine (PFPH) and Gas Chromatography-Mass Spectroscopy (GC-MS).** Anthony Cutler, TOKALA CHRISTENSEN, Jenna Nelson, Hansina Hill, Odelle Hadley, Robin Bond, *The Evergreen State College*
- 2IM.55 Experimental Studies of the Dynamics of Organic Iodide Species Adsorbed on the Surfaces of Environmentally-relevant Particles.** ALLA ZELENYUK, Robert VanGundy, Katarzyna Grubel, Thomas Autrey, Youngsoo Shin, *Pacific Northwest National Laboratory*
- 2IM.56 Quantifying Exposure to Second Hand Tobacco Smoke in the Presence of Black Carbon via DualSpot Corrections to MicroAeth Data: Results from Chamber Experiments.** ABDERAHIM SALHI, James Ross, Beizhan Yan, Qiang Yang, Jeanine D'Armiento, Jarrod Sonnett, Matthew Perzanowski, Steven Chillrud, *Hudson County Community College; LDEO of Columbia University*

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2RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOL I: POSTERS

EXHIBIT HALL A

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- 2RA.1 Integrating Aerosol Size Distribution Measurements with a 3D Chemical Transport Model.** DANA MCGUFFIN, Peter Adams, Erik B. Ydstie, *Carnegie Mellon University*
- 2RA.2 Polarimetric Measurement Sensitivities for Atmospherically Processed Brown Carbon Aerosol.** CHENCHONG ZHANG, William Heinson, Benjamin Sumlin, Michael Garay, Olga Kalashnikova, Rajan K. Chakrabarty, *Washington University in St. Louis*
- 2RA.4 Concentrations of Biogenic Volatile Organic Compound in an East Coast Forest, and Their Relative Importance for Ozone Chemical Loss.** DEBORAH MCGLYNN, Chenyang Bi, Graham Frazier, Sally Pusede, Gabriel Isaacman-VanWertz, *Virginia Tech*
- 2RA.5 Biogenic Oxidation Products in a Mixed Forest: Their Concentrations, Reactivity, and Fates.** GRAHAM FRAZIER, Chenyang Bi, Deborah McGlynn, Sally Pusede, Gabriel Isaacman-VanWertz, *Virginia Tech*
- 2RA.6 Ultrafine Particle Composition and Growth in the Amazon Basin: Observations from Two Surface Sites.** HAYLEY GLICKER, Sarah Batalha, Julio Tota, Alex Guenther, James Smith, *University of California, Irvine*
- 2RA.8 Comparison of Antarctic and Arctic Seasonal Cycles of Aerosol Chemical Components.** LYNN RUSSELL, Amanda Frossard, Patricia Quinn, Sangeeta Sharma, Richard Leaitch, Dan Lubin, *Scripps Institution of Oceanography*

- 2RA.9** **Boundary Layer Characteristics and PM<sub>2.5</sub> Concentration Diurnal Variation on Cloudless Days in Beijing Based on UHF Wind-profiler and Related Meteorological and Air Quality Observations.** YUFANG TIAN, Daren Lyu, *Institute of Atmospheric Physics, Chinese Academy of Sciences*
- 2RA.10** **Chemical and Microphysical Properties of Wind-blown Dust Near an Actively Retreating Glacier in Yukon, Canada.** PATRICK HAYES, Jill Bachelder, Malo Bernhard, Carolyn Liu-Kang, Perrine Lambert, Alexane Filoche, Juliana Galhardi, Madjid Hadioui, Marie Cadieux, Amélie Chaput, Marie-Pierre Bastien-Thibault, Kevin Wilkinson, James King, *Université de Montréal*
- 2RA.11** **Aerosol Vertical Distribution Climatology Over India: Dust, Smoke and Polluted Dust.** Padmavati Kulkarni, SREEKANTH VAKACHERLA, *CSTEP, India*
- 2RA.12** **Characterizing Primary Ultrafine Particle Sources in the United States with CMAQ-UF.** BENJAMIN MURPHY, Francis Binkowski, Ekborderin Winijkul, Matthew Alvarado, *United States Environmental Protection Agency*
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2SA SOURCE APPORTIONMENT I: POSTERS

EXHIBIT HALL A

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- 2SA.1** **Impacts of Household Sources on Air Pollution at Village and Regional Scales in India.** BRIGITTE ROONEY, Ran Zhao, Yuan Wang, Kelvin Bates, Ajay Pillarisetti, Sumit Sharma, Seema Kundu, Tami Bond, Nicholas Lam, Bora Ozaltun, Li Xu, Varun Goel, Lauren Fleming, Robert Weltman, Simone Meinardi, Donald Blake, Sergey Nizkorodov, Rufus Edwards, Ankit Yadav, Narendra Arora, Kirk Smith, John Seinfeld, *California Institute of Technology*
- 2SA.2** **Source Attribution Using Fourier Transform Infrared Spectroscopy in the Interagency Monitoring of Protected Visual Environments (IMPROVE) Network.** ANDREW WEAKLEY, Alexandra Boris, Bruno Debus, Satoshi Takahama, Ann Dillner, *University of California, Davis*
- 2SA.3** **Elucidating Sources and Human Health Risk of Inhalation Exposure to VOCs and PM<sub>2.5</sub> at Albany, New York.** MD. AYNUL BARI, Sanchita Paul, *University at Albany, SUNY*
- 2SA.4** **Using Highly Time-resolved Data to Improve the Lake Michigan Ozone Study: Particle Size Distributions and VOCs at a Coastal Site.** MEGAN CHRISTIANSEN, Austin Doak, Dagen Hughes, Charles Stanier, Elizabeth Stone, Dylan Millet, Hariprasad Alwe, *University of Iowa*
- 2SA.5** **Source Apportionment and Temporal Trends of Coarse Particulate Matter (PM): A Case Study in Central Tehran, Iran.** EHSAN SOLEIMANIAN, Sina Taghvaei, Amirhosein Mousavi, Mohammad Sowlat, Mohammad Sadegh Hassanvand, Masud Yunesian, Kazem Naddafi, Constantinos Sioutas, *University of Southern California*
- 2SA.6** **Application of Advanced Factorization Techniques for Deconvolution of Cooking and Biomass Burning Source Contributions in a Polluted Megacity.** SAHIL BHANDARI, Kanan Patel, Shahzad Gani, Gazala Habib, Joshua Apte, Lea Hildebrandt Ruiz, *University of Texas at Austin*
- 2SA.7** **Spatial Variation of Wintertime Aerosol Composition and Source Contribution across the Kathmandu Valley, Nepal.** BENJAMIN WERDEN, Michael Giordano, Khadak Mahata, Siva Praveen Puppala, Arnico Panday, Robert J. Yokelson, Elizabeth Stone, Peter DeCarlo, *Drexel University*
- 2SA.8** **Source Apportionment of Multiple Metals in PM<sub>2.5</sub> in Beijing, China.** MEI ZHENG, Xi Yang, Junyi Liu, *Peking University*
- 2SA.9** **Insights into PM<sub>2.5</sub> Chemical Composition and Sources in Beijing Using an Extractive Electrospray Ionisation Long-Time-Of-Flight Mass Spectrometer (EESI-LTOF).** YANDONG TONG, Veronika Pospisilova, Lu Qi, Giulia Stefanelli, Varun Kumar, Urs Baltensperger, Junji Cao, Rujin Huang, Andre S.H. Prévôt, Jay G. Slowik, *Paul Scherrer Institute*
- 2SA.10** **Source Apportionment of Submicron Aerosol Particles in a Mediterranean Harbour by Using a Rolling Window Approach.** BENJAMIN CHAZEAU, Grégory Gille, Boualem Mesbah, Brice Temime-Roussel, Francesco Canonaco, Andre S.H. Prévôt, Barbara D'Anna, Henri Wortham, Nicolas Marchand, *Aix-Marseille Université, CNRS, LCE FRE 3416*
- 2SA.11** **High Time Resolution Observation and Its Source Apportionment of Brown Carbon during Winter and Summer in Urban Xi'an, Northwestern China.** YALI LEI, Zhenxing Shen, Tian Zhang, Di Lu, Yaling Zeng, Qian Zhang, Hongmei Xu, Jianhui Ye, Yiming Qin, Xin Wang, Junji Cao, *Xi'an Jiaotong University*

**2SA.12 High Time-Resolution Measurements of Ambient Metals and Elements in Los Angeles: Source Apportionment and Temporal Variations.** SINA HASHEMINASSAB, Payam Pakbin, Andrea Polidori, Aaron Katzenstein, Jason Low, *South Coast Air Quality Management District*

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2UA URBAN AEROSOLS II: POSTERS

EXHIBIT HALL A

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- 2UA.1 Integration of Ground-Based Particulate Matter Measurements with Satellite Observations in the Multi-Angle Imager for Aerosols (MAIA) Investigation.** SINA HASHEMINASSAB, Kristal Verhulst, Michael Garay, Abigail Nastan, Randall V. Martin, Yang Liu, David Diner, *Jet Propulsion Laboratory*
- 2UA.2 Detecting Biomass Burning Using Intensive Aerosol Optical Properties in El Paso, Texas - (BC)2 El Paso Field Campaign.** SUJAN SHRESTHA, Meghan C. Guagenti, James Flynn, Sergio Alvarez, Sascha Usenko, Rebecca J. Sheesley, *Baylor University*
- 2UA.3 Identification of the Major Sources of the Particulate Nitrosamines and Nitramines in the Ambient Atmosphere at Seoul, South Korea.** NA RAE CHOI, Yun Gyong Ahn, Ji Yi Lee, Yong Pyo Kim, *Ewha Womans University*
- 2UA.4 Effects of Climate and Emission Changes on Air Pollution in India.** HAO GUO, Kaiyu Chen, Sri Kota, Hongliang Zhang, *Louisiana State University*
- 2UA.5 Investigation of the Driving Forces for the Recent Trends in Surface Fine Particulate Matter Concentrations in Nanjing, China.** JIANLIN HU, Zhihao Shi, Jingyi Li, Hongliang Zhang, Qi Ying, *Nanjing University of Information Science & Technology*
- 2UA.6 Simulation of Heterogeneous Chemistry of SO<sub>2</sub> and NO<sub>x</sub> on Mineral Dust Particles in Ambient Environments Using CAMx.** ZECHEN YU, Myoseon Jang, *University of Florida*
- 2UA.7 Simulation of Evolving Gas- and Aerosol-Phase Air Quality over Los Angeles.** ELYSE PENNINGTON, Melissa Venecek, Yuan Wang, John Seinfeld, *California Institute of Technology*
- 2UA.8 Local and Cross-Regional Contributions of Air Quality Policy in Central Taiwan.** MIN-CHUAN HSIAO, Hsin-Chih Lai, Wen-Yinn Lin, Joshua S. Fu, Lei-Wei Lai, *National Taipei University of Technology*
- 2UA.9 Comparison of Chemical Characteristics of PM<sub>2.5</sub> during Winter Haze Events in Beijing, China and Gwangju, Korea.** MINHAN PARK, Jihyo Chong, Haebum Lee, Nohhyeon Kwak, Hyunok Maeng, Kyungjoo Kim, Eunbi Lee, Enrique Cosep, A. Young Choi, Hangyul Song, Ma. Cristine Faye Denna, Dahye Oh, Min-Suk Bae, Kyoung-Soon Jang, Min Hu, Xiaoyang Yang, Kihong Park, *Gwangju Institute of Science and Technology*
- 2UA.10 Characterization of Submicron Aerosols in a High Polluted City Nearby the Gorge of the Yellow River in Central China.** QINGQING WANG, Yele Sun, Jie Li, Yong Chen, Yanyu Li, *Institute of Atmospheric Physics Chinese Academy of Sciences*
- 2UA.11 Micro-environmental Impact of a Proposed "Tri-gen" Facility in a Large Food Distribution Center.** BO YANG, Murari Iyengar, Jeffrey Sward, K. Max Zhang, *Cornell University*
- 2UA.12 Mobile Measurements to Identify Spatial and Temporal Variability of Aerosol Composition during the NAMaSTE Campaign.** Benjamin Werden, Erin Katz, Michael Giordano, Siva Praveen Puppala, Elizabeth Stone, Robert J. Yokelson, Donald Blake, Arnico Panday, PETER DECARLO, *Drexel University*
- 2UA.13 Characterization of Particulate Bound Polycyclic Aromatic Compounds (PACs) and Their Oxidations in Heavy Polluted Atmosphere: A Case Study in Urban Beijing, China during Haze Events.** LIJUAN LI, Steven Sai Hang Ho, Junji Cao, *Chinese Academy of Sciences*
- 2UA.14 High Resolution Chemical Transport Modeling of Ultrafine Particles over Pittsburgh.** SHAYAK SENGUPTA, Pablo Garcia, David Patoulias, Provat Saha, Wei Ma, Christopher Tessum, Iannis Kioutsoukakis, Sean Qian, Spyros Pandis, Inês Azevedo, Peter Adams, *Carnegie Mellon University*
- 2UA.15 Elevated Number and Mass Concentrations of Fine Particles during Winter in 2018 and 2019 in Urban Gwangju, Korea.** JIHO JANG, Haebum Lee, Nohhyeon Kwak, Minhan Park, Jihyo Chong, Ma. Cristine Faye Denna, Kihong Park, *Gwangju Institute of Science and Technology*

- 2UA.17 Spatial Variation of Air Pollutants Using Machine Learning Models.** JIAJUN GU, Gaurav Bang, Abhijeet Guha Roy, Michael Brauer, Benjamin Barratt, Martha Lee, K. Max Zhang, *Cornell University*
- 2UA.19 Ambient Air Quality in Urban Areas of Indonesia.** Muhayatun Santoso, Diah Lestiani, Syukria Kurniawati, ENDAH DAMASTUTI, Djoko Prakoso, Indah Kusmartini, Rita Mukhtar, Philip K. Hopke, *Center for Applied Nuclear Science and Technology, BATAN*
- 2UA.20 Chemical Composition, Sources and Formation Process of Submicron Aerosols in Seoul Metropolitan Area during Summer: Comparison to Winter.** HWAJIN KIM, Qi Zhang, *Korea Institute of Science and Technology*
- 2UA.21 Comprehensive Mobile Measurements of Aerosols from Residential Heating in Small Settlements for Temporal/Spatial Variability and Hot-Spots Identification: Cross-Border Study.** JAN BENDL, Jan Hovorka, Jürgen Schnelle-Kreis, Gert Jakobi, Mohamed Khedr, Xiansheng Liu, *Charles University*
- 2UA.22 Efficacy of an Engineered Vegetative Buffer on Near-Road Air Quality.** PRADEEP S. PRATHIBHA, Ray Yeager, Aruni Bhatnagar, Daniel Fleischer, Brent Bucknum, Eben Cross, Jay R. Turner, *Washington University in St. Louis*
- 2UA.24 A Topic Model Approach and Its Implication on Particulate Matter Related Research: A Case for South Korea.** KAYOUNG KIM, *KISTEP*
- 2UA.25 Can Nucleation in the Residual Layer Explain “Class-B” New Particle Formation Events?** NICHOLAS MESKHIDZE, Juan Jaimes-Correa, Markus Petters, Taylor Royalty, Brittany Phillips, Alyssa Zimmerman, Robert Reed, *NC State*
- 2UA.26 Exploring the Spatiotemporal Variability of the Ground Level Ultrafine Particle Number Concentration in the Raleigh Area.** Nicholas Meskhidze, Juan Jaimes-Correa, Markus Petters, Taylor Royalty, Brittany Phillips, ALYSSA ZIMMERMAN, Robert Reed, *North Carolina State University*
- 2UA.27 Comparison of Organic Compounds in PM<sub>2.5</sub> High-Concentration Events from Seoul and Beijing.** HYEWON KIM, Soyoung Jung, Jieun Park, Youngkwon Kim, Seung-Muk Yi, Kwang-Jo Moon, Kwon Ho Jeon, *Seoul National University, Seoul, Korea*
- 2UA.28 Air Quality and Health Co-benefits of Different Deep Decarbonization Pathways in California.** BIN ZHAO, Tianyang Wang, Zhe Jiang, Yu Gu, Kuo-Nan Liou, Yifang Zhu, *University of California Los Angeles*
- 2UA.29 Validating the Intervention Model for Air Pollution for Environmental Health and Justice Analysis in Canada.** RIVKAH GARDNER-FROLICK, Christopher Tessum, Julian Marshall, Amanda Giang, *University of British Columbia*
- 2UA.30 Spatiotemporal Profiles of Ultrafine Particles Differ from Other Traffic-Related Air Pollutants: Lessons from Long-Term Measurements at Fixed Sites and Mobile Monitoring.** SHAHZAD GANI, Sarah Chambliss, Kyle Messier, Melissa M. Lunden, Joshua Apte, *University of Texas at Austin*
- 2UA.31 Ten-year Trends (2008–2017) in Ambient Fine Particulate Matter and Its Chemical Components in the Capital Region of New York State.** SANCHITA PAUL, Md. Aynul Bari, *University at Albany, SUNY*
- 2UA.32 Onshore Measurements of Emissions from In-Use Tugboats in Southern California.** HANNAH SCHLAERTH, Joseph Ko, Rebecca Sugrue, Chelsea V. Preble, Thomas W. Kirchstetter, George Ban-Weiss, *University of Southern California*

**Tuesday 3:00 PM - 3:30 PM**  
**Coffee Break**

**Tuesday 3:30 PM - 5:00 PM**  
**Session 3: Platform**

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3AC AEROSOL CHEMISTRY III: MODEL DEVELOPMENT  
OREGON BALLROOM

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**Benjamin Nault and Kerrigan Cain, chairs**



- 3AC.1 Application of a Reactive Uptake Parameterization Considering Non-Ideal Effects and Phase State in Simulating Secondary Organic Aerosols from Isoprene Epoxydiols Under Controlled Laboratory Measurements.** YUZH CHEN, Yue Zhang, Matthieu Riva, Theran P. Riedel, Havala Pye, Nicole Olson, Ziyang Lei, Zhenfa Zhang, Avram Gold, Barbara Turpin, Andrew Ault, Jason Surratt, *University of North Carolina at Chapel Hill*  
3:30
- 3AC.2 Modeling the Effects of an Updated Isoprene Oxidation Mechanism on Organic Aerosol, Reactive Nitrogen, and Sulfate Budgets.** KELVIN BATES, Eleni Dovrou, Vasquez Krystal, Frank Keutsch, Paul Wennberg, Daniel Jacob, *Harvard University*  
3:45
- 3AC.3 Predicting the Phase State of Atmospherically Relevant Aerosols and Its Impact on Multiphase Chemistry in a Regional-scale Atmospheric Model.** QUAZI RASOOL, Ryan Schmedding, Yue Zhang, Havala Pye, Haofei Zhang, Yuzhi Chen, Jason Surratt, William Vizuete, *University of North Carolina at Chapel Hill*  
4:00
- 3AC.4 The Dependence of SOA Formation on NO<sub>x</sub> Conditions: Effects of Branching Ratio of RO<sub>2</sub> + NO Pathway.** WEIHAN PENG, William Porter, David R. Cocker III, *University of California, Riverside*  
4:15
- 3AC.5 Translating Environmental Chamber Data for Secondary Organic Aerosol for Use in Atmospheric Models.** CHARLES HE, Ali Akherati, Christopher Cappa, Jeffrey R. Pierce, ManishKumar Shrivastava, Benjamin Murphy, Shantanu Jathar, *Colorado State University*  
4:30
- 3AC.6 Constraining the Impact of Microorganisms on Atmospheric Aerosol and Cloud Chemistry.** ALISON FANKHAUSER, Dexter D. Antonio, Asher M. Krell, Simone J. Alston, Scott Banta, V. Faye McNeill, *Columbia University*  
4:45

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3AD SYMPOSIUM: FROM AEROSOL DOSIMETRY AND TOXICOLOGY TO HEALTH III

ROOM A 106

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Otmar Schmid and Huanhuan Jiang, chairs

- 3AD.1 Computational Modeling of Multispecies Evolving Aerosol Delivery in the Human Respiratory Tract.** FRANCESCO LUCCI, Mahdi Asgari, Edo Frederix, Arkadiusz Kuczaj, *Philip Morris International R&D*  
3:30
- 3AD.2 Profiling Sources and Chemical Aging Effects on the Oxidative Potential of Organic Aerosol.** SHUNYAO WANG, Karl Demmans, Jianjun Han, Manpreet Takhar, Zeng Rui, Peng Hui, Arthur W. H. Chan, *University of Toronto*  
3:45
- 3AD.3 Oxidative Potential of PM<sub>2.5</sub> Semi-volatile Species in an Urban Atmosphere.** MILAD PIRHADI, Amirhosein Mousavi, Sina Taghvaei, Mohammad Sowlat, Constantinos Sioutas, *University of Southern California*  
4:00
- 3AD.4 The Impact of Cooking Aerosol on Human Brain and Heart.** MEHDI AMOUEI TORKMAHALLEH, Motahareh Naser, Zhibek Bekezhanqyzy, Aidana Gimnkhan, Nurzhan Sholpan, Raikhangul Gabdrashova, Milad Malekipirbazari, Mojtaba Jozizade, Mahsa Tabesh, Hamta Farrokhi, Reza Khanbabaie, Hossein Mehri-Dehnavi, *Chemical and Aerosol Research Team, Nazarbayev University*  
4:15
- 3AD.5 Chronic Exposure to Real-time Traffic Related Air Pollution Increases Neuroinflammation and Exacerbates Plaque Burden in TgF344-AD Rats.** Kelley Patten, Anthony Valenzuela, Ameer Taha, Keith Bein, ANTHONY S. WEXLER, Pamela Lein, *University of California, Davis*  
4:30
- 3AD.6 Temporal Changes in the Per Unit Mass Toxicity of Ambient PM<sub>2.5</sub> in New York State.** PHILIP K. HOPKE, Daniel Croft, Wangjian Zhang, Shao Lin, Mauro Masiol, Stefania Squizzato, Sally Thurston, Edwin van Wijngaaten, Mark Utell, David Q. Rich, *University of Rochester Medical Center*  
4:45

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3BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH III: TOWARDS UNDERSTANDING THE HEALTH-RELATED IMPACTS OF BIOMASS BURNING

ROOM B 113-114

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Amara Holder and Aditya Sinha, chairs

- 3BC.1 Pregnant Women's Exposure to Household Air Pollution during a LPG Cookstove Intervention in Rural Bangladesh: The Value of Real-Time Data.** Maggie Abbott, JONATHAN THORNBURG, Sajia Islam, Masum Billah, Fariha Tasnim, Seung-Hyun Cho, Ashraful Alam, Camille Raynes-Greenow, *RTI International*  
3:30

- 3BC.2 Linking Cookstove Emissions to Indoor Air Quality: Outcome of a Multi-year Cookstove Intervention Trial in Rural India.** MOHAMMAD MAKSIMUL ISLAM, Roshan Wathore, Grishma Jain, Karthik Sethuraman, Hisham Zerriffi, Julian Marshall, Rob Bailis, Andrew Grieshop, *North Carolina State University*  
3:45
- 3BC.3 Initial Evaluation of a Heating Stove Changeout Program in the Navajo Nation Featuring a Culturally-Appropriate Wood/Coal Stove.** Naomi Chang, Tennille Denetdeel, Jeri Garfield, Sky Izzo, Michael King, Chris Yazzie, Mark Bauer, Paul Solomon, Kathleen Stewart, LUPITA MONTOYA, *University of Colorado Boulder*  
4:00
- 3BC.4 Improving Smoke Exposure Assessment for Surveillance and Epidemiology in British Columbia, Canada.** SARAH HENDERSON, *British Columbia Centre for Disease Control*. INVITED.  
4:15
- 3BC.5 Implications of Photochemical Ageing for Toxicity and Source Apportionment of Wood Combustion Aerosols: A Combined Biological and Chemical Study.** Hendryk Czech, Toni Miersch, Anni Hartikainen, Mika Ihalainen, Sebastiano di Bucchianico, Jürgen Orasche, Sebastian Oeder, Jarkko Tissari, Thorsten Streibel, Jürgen Schnelle-Kreis, Pasi Javala, Maija-Riitta Hirvonen, Olli Sippula, Jorma Jokiniemi, RALF ZIMMERMANN, HICE Consortium, *University of Rostock and Helmholtz Zentrum Munich, Germany*  
4:45

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### 3CC AEROSOLS, CLOUDS, AND CLIMATE III

ROOM B 110-112

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#### Richard Moore and Weimeng (Stephanie) Kong , chairs

- 3CC.1 Measuring and Modeling the Water-Solubility Distribution of Organic Aerosol.** SHUNSUKE NAKAO, Vikram Pratap, Aditya Kiran Srikakulapu, *Clarkson University*  
3:30
- 3CC.2 Impact of Improved Representation of Aerosol Mixing State on Air-Quality-Weather Interactions.** ROBIN STEVENS, Ashu Dastoor, *Environment and Climate Change Canada*  
3:45
- 3CC.3 Evaluating the Impacts of In-Cloud Chemistry on Resuspended Aerosol Particles after Cloud Evaporation using a Particle Resolved Model.** YU YAO, Nicole Riemer, Matt Dawson, *University of Illinois at Urbana-Champaign*  
4:00
- 3CC.4 Effects of GHG Mitigation Strategies in Future Climate over California.** ANIKENDER KUMAR, Michael Kleeman, Christina Zapata, *University of California, Davis*  
4:15
- 3CC.5 Stratocumulus Cloud-top Inhomogeneous Entrainment Parcel Model Parameterization.** KEVIN SANCHEZ, Greg Roberts, Minghui Diao, Lynn Russell, *Scripps Institution of Oceanography*  
4:30
- 3CC.6 Surface Aerosol Bimodality Due to Continental Cloud Processing and Photochemical Particle Production.** JAMES HUDSON, Stephen Noble, *Desert Research Institute*  
4:45

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### 3IM INSTRUMENTATION AND METHODS III: SINGLE PARTICLES AND DROPLETS

ROOM B 115-116

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#### Cari Dutcher and Sarah Suda Petters, chairs

- 3IM.1 Temperature Dependent Phase Study of Aerosols Using Droplet Microfluidics.** PRIYATANU ROY, Cari Dutcher, *University of Minnesota*  
3:30
- 3IM.2 A New Approach for in Situ Picolitre Sampling of Aerosol Using Optically Trapped Droplets.** MALCOLM KITTLE, Rachael E.H. Miles, Jason Murrell, Rebecca Hopkins, Jonathan P. Reid, *University of Bristol*  
3:45
- 3IM.3 Laser-induced Incandescence: Need to Revisit.** IGOR ALTMAN, Fengshan Liu, *Naval Air Warfare Center Weapons Division, USA*  
4:00
- 3IM.4 Aerosol Mass Spectrometer for On-Line Detection of Polycyclic Hydrocarbons as Well as Inorganic Cations and Anions from Single Particles.** RALF ZIMMERMANN, Julian Schade, Robert Irsig, Martin Sklorz, Johannes Passig, *Helmholtz Zentrum München and University of Rostock*  
4:15
- 3IM.5 Chemical Reactions on Optically Trapped Single Particles.** CHUJI WANG, Zhiyong Gong, Gorden Videen, Yong-Le Pan, *Mississippi State University*  
4:30

**3IM.6 A Single Particle Approach for Exploring Aerosol Photochemistry and Optical Properties.** JAMES F. DAVIES,  
4:45 Chelsea Price, Alison Bain, Thomas Preston, *University of California, Riverside*

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3UA URBAN AEROSOLS III: CHEMICAL CHARACTERIZATION OF URBAN AEROSOLS AROUND THE GLOBE

ROOM B 117-119

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**Sahil Bhandari and Alex Johnson, chairs**

- 3UA.1 An Enhanced Submicron Aerosol Event over Long Island and the NYC Metro Area during LISTOS 2018: Influence of a Heat Wave and Marine Air Masses.** Jie Zhang, John Mak, Ziran Wei, JAMES SCHWAB, *University at Albany, SUNY*  
3:30
- 3UA.2 Submicron Aerosol during Autumn 2018 in the Most Polluted Megacity: The Delhi Aerosol Supersite Study (DAS).** KANAN PATEL, Sahil Bhandari, Shahzad Gani, Purushottam Kumar, Gazala Habib, Joshua Apte, Lea Hildebrandt Ruiz, *University of Texas at Austin*  
3:45
- 3UA.3 Spatial and Seasonal Trends in Polycyclic Aromatic Hydrocarbon Particulate Measurements in Ulaanbaatar, Mongolia.** Skyler Simon, AUDREY DANG, Jay R. Turner, Rufus Edwards, Brent Williams, *Washington University in St. Louis*  
4:00
- 3UA.4 Possible Heterogeneous Chemistry of Hydroxymethanesulfonate (HMS) in Northern China Winter Haze.** SHAOJIE SONG, *Harvard University*  
4:15
- 3UA.5 Assessment of Airborne Toxic Metals at an Environmental Justice Community in Wilmington, Delaware.** Olivia Ryder, Jennifer DeWinter, STEVEN G. BROWN, Elizabeth Frey, Keith Hoffman, *Sonoma Technology, Inc*  
4:30
- 3UA.6 Characterization of Particulate Matter in Summer Using High-Resolution Aerosol Mass Spectrometry in San Antonio.** FANGZHOU GUO, Alexander Bui, Edward Fortner, Benjamin Schulze, Sujan Shrestha, Subin Yoon, Rebecca J. Sheesley, Sascha Usenko, Tara Yacovitch, James Flynn, Robert Griffin, *Rice University*  
4:45

**Tuesday 5:00 PM - 6:00 PM**

**Working Group Meetings 1: Aerosol Chemistry, Combustion and Materials Synthesis, Health Related Aerosols, History of Aerosol Science, Instrumentation and Methods**

**Tuesday 6:00 PM - 8:00 PM**

**Welcome Reception**

**Tuesday 6:00 PM - 8:00 PM**

**Session 4: Meet the Job Seekers Poster Session**

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4JS MEET THE JOB SEEKERS: POSTERS

EXHIBIT HALL A

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- 4JS.1 Sahil Bhandari, Ph.D. Candidate in ChemE (UT Austin), Looking for Post-Doc Positions (Agency/National Labs/Industry), Prefer California and Massachusetts.** SAHIL BHANDARI, *University of Texas at Austin*
- 4JS.2 Meet the job seeker: Shahzad Gani.** SHAHZAD GANI, *University of Texas at Austin*
- 4JS.3 Kaisen Lin, PhD Student at Virginia Tech Looking for Post-doc Positions.** KAISEN LIN, *Virginia Tech*
- 4JS.4 Raj M. Lal, Graduate Student Georgia Tech/PhD, Post-Doc/Air Quality, Sustainability.** RAJ LAL, *Georgia Institute of Technology*
- 4JS.5 Nirmala Thomas, Ph.D. Candidate, Postdoc.** NIRMALA THOMAS, *Rutgers University, New Brunswick, New Jersey*

- 4JS.6 Dana McGuffin, Current PhD Candidate seeking Postdoc in Atmospheric Inverse Modelling.** DANA MCGUFFIN, *Carnegie Mellon University*
- 4JS.8 Job Seeker Abstract for Jessica Mirrielees.** JESSICA MIRRIELEES, *Texas A&M University*
- 4JS.9 Anna Hodshire, PhD candidate, Postdoctoral Position.** ANNA HODSHIRE, *Colorado State University*
- 4JS.10 Jenna Ditto, PhD Student, Postdoctoral Fellowship.** JENNA DITTO, *Yale University*
- 4JS.11 I'm Looking for a Post Doc Position.** GREGOR KOTALCZYK, *University Duisburg-Essen*
- 4JS.12 Zezhen, Ph.D. of Engineering, Postdoc or Research Scientist Position.** ZEZHEN CHENG, *University of Georgia*
- 4JS.13 Yunle Chen, Ph.D. Student Seeking Postdoc Positions in Academia or Industry.** YUNLE CHEN, *Georgia Institute of Technology*
- 4JS.14 Fangzhou Guo, PhD Candidate at Rice University (Current), Looking for Postdoc Position in Aerosol Chemistry (AMS Related).** FANGZHOU GUO, *Rice University*
- 4JS.15 Nisar Ali Baig, Research Associate, MS Thesis.** NISAR ALI BAIG, *IIT-DELHI*
- 4JS.16 AAAR job seeking: Zechen Yu is Looking for PostDoc Position in Air Quality Modeling.** ZECHEN YU, *University of Florida*
- 4JS.17 Julia Bakker-Arkema, Ph.D. Candidate in Analytical, Environmental, and Atmospheric Chemistry, Seeking Government or Academic Postdoctoral Position.** JULIA BAKKER-ARKEMA, *University of Colorado*
- 4JS.19 Tianren Wu, Ph.D. Student, Seeking Postdoctoral Position.** TIANREN WU, *Purdue University*
- 4JS.20 Seeking a Faculty Position in Environmental Science and Engineering.** YUANLONG HUANG, *California Institute of Technology*
- 4JS.21 Meet the Job Seekers: Danielle C. Draper.** DANIELLE C. DRAPER, *University of California, Irvine*
- 4JS.22 Jai Prakash; Visiting Research Scientist, PhD, Faculty Position/Research Scientist.** JAI PRAKASH, *Washington University in St. Louis*
- 4JS.23 Matthew Brege, PhD Candidate, Postdoc and Faculty, United States.** MATTHEW BREGE, *Michigan Technological University*
- 4JS.25 Yue Zhang, NSF/NIH Postdoc at the University of North Carolina, Chapel Hill/Ph.D., Looking for a Faculty or Scientist Position.** YUE ZHANG, *Univ. of North Carolina, Chapel Hill/Aerodyne Research, Inc.*
- 4JS.26 Lucy Nandy, Visiting Postdoctoral Scholar, Assistant Professor in Chemical/Mechanical/Civil and Environmental Engineering, and Atmospheric Sciences.** LUCY NANDY, *University of Illinois at Urbana-Champaign*
- 4JS.27 Guangjie Zheng, Postdoc, Faculty Position.** GUANGJIE ZHENG, *Washington University in St. Louis*
- 4JS.28 Sarah Petters, Postdoctoral Fellow: Seeking Tenure Track Position.** SARAH SUDA PETERS, *University of North Carolina at Chapel Hill*
- 4JS.29 Alexander J. Johnson, PhD Graduate Research Assistant, and Seeking Positions in Academia or Government.** ALEXANDER JOHNSON, *Syracuse University*
- 4JS.30 Quazi Ziaur Rasool, Postdoctoral Research Associate at University of North Carolina at Chapel Hill, PhD in Environmental Engineering from Rice University, Houston, TX.** QUAZI RASOOL, *University of North Carolina at Chapel Hill*
- 4JS.31 Dr. Kelsey Bilsback: Seeking a Faculty or National Lab Position in Air Pollution Research in the US or Europe.** KELSEY BILSBACK, *Colorado State University*
- 4JS.32 Theresa M. Kucinski, PhD Candidate, Postdoctoral/Government.** THERESA KUCINSKI, *The Pennsylvania State University*
- 4JS.33 Qi Yao, Post-doctoral Researcher, Academia/Government.** QI YAO, *University of Maryland*

- 4JS.34 Julia Montoya-Aguilera, PhD Graduate Student, Government - Formation and Properties of Nitrogen-Containing Organic Compounds in Secondary Organic Aerosol (SOA).** JULIA MONTOYA-AGUILERA, *University of California, Irvine*
- 4JS.37 Hema Ravindran, Post-doc, Desired Position – Government and Industry.** HEMA RAVINDRAN, *Clarkson University*
- 4JS.38 Ali Akherati, Graduate Research Assistant, Mechanical Eng. Dept., Colorado State University, Air Quality Modeling/Measurements/Consultant/Policy-related Positions.** ALI AKHERATI, *Colorado State University*
- 4JS.39 Shawna Vreeke, Candidate for PhD. in Chemistry, Desired Position in Industry or Government.** SHAWNA VREEKE, *Portland State University*
- 4JS.40 Aditya Sinha, Graduate Student Researcher, Industry.** ADITYA SINHA, *North Carolina State University*
- 4JS.41 Bo Yang, Ph. D. Candidate, Academia/Industry opportunities in Environmental/Mechanical Engineering.** BO YANG, *Cornell University*
- 4JS.42 Alison Fankhauser, Ph.D. Student and Desired Post Doc or Industry Research Position.** ALISON FANKHAUSER, *Columbia University*
- 4JS.43 Huang Zhang, Postdoctoral Scholar(Ph.D), Faculty & Industry, CA & OR & WA.** HUANG ZHANG, *Washington University in St Louis*
- 4JS.44 Yangyang Zou, PhD candidate in the Ohio State University / Civil Engineering (Environmental Engineering) / Industry, Postdoc and Faculty Position.** YANGYANG ZOU, *The Ohio State University*
- 4JS.45 Mara Otero-Fernández, PhD Student, Bio Science Area.** MARA OTERO-FERNANDEZ, *University of Bristol*
- 4JS.46 Maksim Islam, 3rd Year PhD student at NC State University, Research & Development (R & D).** MOHAMMAD MAKSIMUL ISLAM, *North Carolina State University*
- 4JS.47 Tofigh Sayahi, Chemical Engineering PhD Student, Chemical Engineering.** TOFIGH SAYAHI, *University of Utah*
- 4JS.48 Meet Hanyang Li, Ph.D. Candidate Who is Seeking a Research Job in Atmospheric Science.** HANYANG LI, *The Ohio State University*
- 4JS.49 Jiayu Li, PhD/Postdoc/Low-cost Sensor and Aerosol Engineering.** JIAYU LI, *Washington University in St Louis*
- 4JS.50 Collisional Growth, Charging and Measurement of Molecular Clusters to Sub-10 nm Particles in High Temperature Flame Environment.** GIRISH SHARMA, Rajan K. Chakrabarty, Pratim Biswas, *Washington University in St Louis*
- 4JS.51 Meet the Job Seekers Poster Session - Qing Ye.** QING YE, *Massachusetts Institute of Technology*
- 4JS.52 Meet the Job Seeker: Vikram Pratap.** VIKRAM PRATAP, *University of Maryland, Baltimore County*
- 4JS.53 Patricio Piedra, Postdoctoral Physicist Seeking Permanent or Permanent-prospective Job as Researcher/Data-Analyst.** PATRICIO PIEDRA, *U.S Army Research Laboratory*
- 4JS.54 Use of Breath-Borne Biomarkers for in Vivo Monitoring Air Toxicity.** HAOXUAN CHEN, Xinyue Li, Maosheng Yao, *Peking University*
- 4JS.55 Chih-Hsiang Chien, PhD, PostDoc/Faculty/Engineer, Academic/National Lab/Industry.** CHIH-HSIANG CHIEN, *University of Florida*
- 4JS.56 Time-resolved Spread of Antibiotic Resistance Genes in Highly Polluted Air.** TING ZHANG, Maosheng Yao, *Peking University*
- 4JS.57 Dishant Khatri, Final Year PhD Student, Combustion and Aerosols, Looking for Industry Job.** DISHANT KHATRI, *Washington University in St. Louis*
- 4JS.58 Mehdi A. Torkmahalleh, Assistant Professor at Nazarbayev University, Seeking a Faculty Position at the Rank of Assistant/Associate Professor.** MEHDI AMOUEI TORKMAHALLEH, *Chemical and Aerosol Research Team, Nazarbayev University*

- 4JS.60 Nethmi Kasthuriarachchi, PhD candidate, Postdoctoral Researcher, Europe.** NETHMI KASTHURIARACHCHI, *National University of Singapore*
- 4JS.62 William G. Tsui, Ph.D. Candidate and Desired Area: Government or Industry.** WILLIAM TSUI, *Columbia University*
- 4JS.63 Sukrant Dhawan, Graduate Student Researcher, Seeking Internship Position in Industry.** SUKRANT DHAWAN, *Washington University in St Louis*
- 4JS.64 Weihan Peng, Ph.D. Candidate in Chemical and Environmental Engineering at University of California, Riverside, Seeking for Industry/ Consulting/ Government Opportunities in Air Quality Field.** WEIHAN PENG, *University of California, Riverside*
- 4JS.65 Amirhosein Mousavi, 4th-Year PhD Candidate, Post Doc/Industry Research Position.** AMIRHOSEIN MOUSAVI, *University of Southern California*

**Tuesday 8:30 PM - 10:30 PM**  
**Celebrating Diversity and Inclusivity within AAAR**

**Wednesday**

**Wednesday 8:00 AM - 9:15 AM**  
**Plenary II**

8:00 **What to do about the Toll Biomass Burning is taking on our Health, Indoor Environments, and Climate** Shelly Miller, *University of Colorado Boulder*

**Moderator** Andrea Ferro, *Clarkson University*

9:00 **Whitby Award Presentation, Liu Award Presentation** Timothy Raymond, *Bucknell University*

**AS&T Outstanding Paper Award Presentation and Outstanding Reviewer Awards Presentation** Warren Finlay, *University of Alberta*

**Wednesday 9:00 AM - 5:00 PM**  
**Exhibits Open**

**Wednesday 9:15 AM - 9:45 AM**  
**Coffee Break**

**Wednesday 9:45 AM - 11:30 AM**  
**Session 5: Platform**

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5AC AEROSOL CHEMISTRY IV: MULTIPHASE REACTIONS  
OREGON BALLROOM

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**Thomas Berkemeier and Kelvin Bates, chairs**

**5AC.1 Hydroxyl Radicals from Isoprene Hydroxy Hydroperoxide (ISOPOOH) Decomposition Induced by Irons in Water.** TING FANG, Pascale Lakey, Jean Rivera-Rios, Frank Keutsch, Manabu Shiraiwa, *University of California, Irvine*  
9:45

- 5AC.2 Unambiguous Elucidation of the Structure and Formation Mechanism of Dimer Esters in Monoterpene Secondary Organic Aerosol.** CHRISTOPHER KENSETH, Yuanlong Huang, Nicholas Hafeman, Nathan Dalleska, Brian Stoltz, John Seinfeld, *California Institute of Technology*  
10:00
- 5AC.3 Kinetics and Equilibria for the Multiphase Formation of Hemiacetals and Peroxyhemiacetals.** JULIA BAKKER-  
10:15 ARKEMA, Megan Clafin, Paul Ziemann, *University of Colorado*
- 5AC.4 The Effects of Aerosol-Phase State and Chemical Composition on Multiphase Chemistry Leading to Isoprene-Derived Secondary Organic Aerosol Formation.** YUE ZHANG, Yuzhi Chen, Andrew Lambe, Nicole Olson, Ziyang Lei, Manjula Canagaratna, Jordan Krechmer, Rebecca Craig, Zhenfa Zhang, Avram Gold, John Jayne, Douglas Worsnop, Timothy Onasch, Cassandra Gaston, Joel A. Thornton, William Vizuete, Andrew Ault, Jason Surratt, *Univ. of North Carolina, Chapel Hill/Aerodyne Research, Inc.*  
10:30
- 5AC.5 Modification of Aerosol Phase, Acidity, and Structure by Heterogeneous and Multiphase Chemistry.** ANDREW  
10:45 AULT, Ziyang Lei, Nicole Olson, Yuzhi Chen, Yue Zhang, Andrew Lambe, Jason Surratt, *University of Michigan*
- 5AC.6 Kinetics and Products of Multiphase Ozonolysis of Unsaturated Lipids.** ZILIN ZHOU, Shouming Zhou, Jonathan  
11:00 Abbatt, *University of Toronto, Canada*
- 5AC.7 Laboratory Studies of CINO<sub>2</sub> Production from N<sub>2</sub>O<sub>5</sub> Uptake on Saline Playa Dusts.** CASSANDRA GASTON, Dhruv  
11:15 Mitroo, Thomas Gill, Savannah Haas, Kerri Pratt, Haley Royer, *University of Miami*

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5AE AEROSOL EXPOSURE II

ROOM A 106

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**Jeffrey Siegel and Fobang Liu, chairs**

- 5AE.1 Modeling Ambient Air Quality at Exposure Relevant Scales using the Community Earth System Model.**  
9:45 FORREST LACEY, Rebecca Schwantes, Simone Tilmes, Colin Zarzycki, Louisa Emmons, Marsh Daniel, Walters Stacy, Francis Vitt, Gabriele Pfister, Peter Lauritzen, Alma Hodzic, *National Center for Atmospheric Research*
- 5AE.2 Improving Daily Surface Particulate Matter Estimates during Extreme Fire Events using a Novel NASA Satellite Plume Injection Height Algorithm.** S. MARCELA LORÍA-SALAZAR, Jingting Huang, Jaehwa Lee, Andrew Sayer, Neil Lareau, Heather Holmes, Jens Redemann, *University of Oklahoma*  
10:00
- 5AE.3 Environmental Justice and Fine Particulate Matter Exposure in California.** SARAH CHAMBLISS, David Paoella,  
10:15 Christopher Tessum, Joshua Apte, Julian Marshall, *University of Texas at Austin*
- 5AE.4 Near-Source Spatial Extents and Socio-Economic Disparity in Urban Air Pollution Exposure.** RISHABH SHAH,  
10:30 Ellis Shipley Robinson, Peishi Gu, Joshua Apte, Allen Robinson, Albert A. Presto, *Carnegie Mellon University*
- 5AE.5 Spatial Correlation of Ultrafine Particle Number and PM<sub>2.5</sub> Mass Concentrations: Implications for Health Assessment.** PROVAT SAHA, Shayak Sengupta, Joshua Apte, Peter Adams, Allen Robinson, Albert Presto, *Carnegie Mellon University*  
10:45
- 5AE.6 Land Use Regression Models of Traffic-Related Semi-Volatile Organic Pollutants in an Urban Area with Elevated Prevalence of Pediatric Asthma.** Sarah Esenther, Elizabeth Lin, Laura Minet, Marianne Hatzopoulou,  
11:00 KRYSTAL GODRI POLLITT, *Yale University*
- 5AE.7 Children's Particulate Matter Exposures Characterization as Part of the New Hampshire Birth Cohort Study.**  
11:15 Michelle McCombs, JONATHAN THORNBURG, Seung-Hyun Cho, Nalyn Siripanichgon, Erin Butler, Margaret Karagas, *RTI International*

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5BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH IV: AIR QUALITY IMPACTS OF SMOKE AT THE URBAN-WILDLAND INTERFACE

ROOM B 113-114

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**Andy May and Amy Sullivan, chairs**

- 5BC.1 New Insights into the Health and Climate Impacts of Boreal Wildfires.** SARAH STYLER, Ming Lyu, Iris Chan,  
9:45 Nianci Zhang, Matthew S Ross, Cora J. Young, Daniel K Thompson, *University of Alberta*

- 5BC.2 Regional Transport of Biomass Burning Aerosols in Northern South America and its Contribution to POA and SOA in Colombian Cities.** KAREN BALLESTEROS, Maria Alejandra Rincón, Juan Manuel Rincón, Amy P. Sullivan, Ricardo Morales Betancourt, *Universidad de los Andes*  
10:00
- 5BC.3 Airborne Characterization of Wildfire Influence on Local Air Quality in California.** Nilima Sarwar, Walt Williams, Armin Sorooshian, Hafliði Jonsson, Richard Flagan, John Seinfeld, ANDREW METCALF, *Clemson University*  
10:15
- 5BC.4 Chemical and Physical Properties of Smoke Plumes in the Western and Southeastern US Using Hazard Mapping System (HMS) and AERONET/IMPROVE Data.** QIJING BIAN, Bonne Ford, Jeffrey R. Pierce, Sonia Kreidenweis, *Colorado State University*  
10:30
- 5BC.5 Smoke Forecasting for Wildfires – Interdisciplinary Tools and Operational Applications.** SUSAN O'NEILL, Narasimhan Larkin, Yufei Zou, Sean Raffuse, Peter Lahm, Mark Fitch, *USDA Forest Service*. INVITED.  
10:45
- 5BC.6 Next Generation Wildfires: Firestorms at the Urban-Wildland Interface.** KEITH BEIN, Irva Hertz-Picciotto, Anthony S. Wexler, *University of California, Davis*  
11:15
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#### 5IA INDOOR AEROSOLS I

ROOM B 110-112

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#### Marina Vance and Brandon Boor, chairs

- 5IA.1 Response of Eight Low-Cost Particle Sensors and Consumer Device to Typical Indoor Emission Events.** YANGYANG ZOU, Matthew Young, Andrew May, Jordan Clark, *The Ohio State University*  
9:45
- 5IA.2 Ultrafine Particle Dynamics in a Net-Zero Energy House: Application of a Building Energy Management System for Evaluating Source and Loss Processes.** JINGLIN JIANG, Brandon E. Boor, *Purdue University*  
10:00
- 5IA.3 Measurements of Fine and Ultrafine Particles Emitted by Marijuana Sources Indoors in a Residence.** Wayne Ott, Kai-Chung Cheng, TONGKE ZHAO, Lance Wallace, Lynn M. Hildemann, *Stanford University*  
10:15
- 5IA.4 Criegee Intermediate Driven Autooxidation of Lipid Aerosol Surfaces.** MEIRONG ZENG, Nadja Heine, Kevin Wilson, *Lawrence Berkeley National Laboratory*  
10:30
- 5IA.5 Indoor Black and Brown Carbon from Cooking Activities and Outdoor Penetration.** SUMIT SANKHYAN, Sameer Patel, Delphine K. Farmer, Marina Vance, *University of Colorado Boulder*  
10:45
- 5IA.6 Impacts of Rooftop Vegetation on HVAC Filter Loadings and Indoor Air Quality.** PRADEEP RAMASUBRAMANIAN, Irvan Luhung, Elliott Gall, *Portland State University*  
11:00
- 5IA.7 Database for Aerosols on the International Space Station.** MARIT MEYER, Meytar Sorek-Hamer, *NASA Glenn Research Center*  
11:15
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#### 5IM INSTRUMENTATION AND METHODS IV: IONIZATION AND CHEMICAL METHODS

ROOM B 115-116

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#### Ann Middlebrook and Lynn Mazzoleni, chairs

- 5IM.1 Intercomparison of an EESI-TOF with VOCUS-PTR for Quantitative Aerosol Analysis.** DONGYU S. WANG, Chuan Ping Lee, Jordan Krechmer, Manjula Canagaratna, Francesca Majluf, Yandong Tong, Josef Dommen, Andre S.H. Prévôt, Imad El Haddad, David Bell, Jay G. Slowik, Urs Baltensperger, *Paul Scherrer Institute*  
9:45
- 5IM.2 Laboratory Evaluation of Organic Aerosol Chemical Composition and Partitioning Measurements Obtained from High-Resolution Mass Spectrometers with Different Soft Ionization Schemes.** MANJULA CANAGARATNA, Jordan Krechmer, Melissa Morris, Andrew Lambe, Francesca Majluf, Harald Stark, Kaspar Daellenbach, Megan Clafin, Archit Mehra, Chenyang Bi, Brian Lerner, Felipe Lopez-Hilfiker, Gabriel Isaacman-VanWertz, John Jayne, Douglas Worsnop, *Aerodyne Research, Inc.*  
10:00
- 5IM.3 Ionization Efficiency of Evolved Gas Molecules from Aerosol Particles in a Thermal Desorption Aerosol Mass Spectrometer.** YU IDE, Kento Uchida, Nobuyuki Takegawa, *Tokyo Metropolitan University*  
10:15



- 5IM.4 Online Molecular Analysis of Secondary Organic Aerosol Using Droplet Assisted Ionization.** DEVAN E. KEREKMAN, Michael J. Apsokardu, Yao Zhang, Murray Johnston, *University of Delaware*  
10:30
- 5IM.5 Mechanism of Ion Formation by Droplet Assisted Ionization.** MICHAEL J. APSOKARDU, Justin Krasnomowitz, Devan E. Kerecman, Yao Zhang, Shuai Jiang, Murray Johnston, *University of Delaware*  
10:45
- 5IM.6 Comprehensive Two-Dimensional Gas Chromatography Mass Spectrometry with Solid-state Thermal Modulator for In-situ Speciated Measurement of Organic Aerosols.** ZHAOJIN AN, Haixia Ren, Mo Xue, Xiaosheng Guan, Jingkun Jiang, *Tsinghua University, China*  
11:00
- 5IM.7 Isomer-resolved Chemical Characterization of the Particle-phase Oxidation Products of Indoor Emissions Using Gas Chromatography-Chemical Ionization Mass Spectrometry.** CHENYANG BI, Graham Frazier, Jordan Krechmer, Wen Xu, Andrew Lambe, Megan Clafin, Brian Lerner, Manjula Canagaratna, John Jayne, Douglas Worsnop, Gabriel Isaacman-VanWertz, *Virginia Tech*  
11:15

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5UA URBAN AEROSOLS IV: WHAT HAVE WE LEARNED? TRENDS IN AIR MONITORING NETWORKS, EFFECTS OF POLICY CHANGES, AND SYNTHESIS OF INTENSIVE FIELD CAMPAIGNS

ROOM B 117-119

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**Scott Epstein and Qing Ye, chairs**

- 5UA.1 Variable Urban SOA Production Explained by Emissions and Photochemistry to Quantify its Impact on Mortality.** BENJAMIN A. NAULT, Duseong Jo, Pedro Campuzano-Jost, Douglas Day, Weiwei Hu, Jason Schroder, James Allan, Manjula Canagaratna, Hugh Coe, Peter DeCarlo, Jessica Gilman, Patrick Hayes, Daven Henze, B. Thomas Jobson, Bill Kuster, Bernhard Rappenglueck, James Roberts, Jochen Stutz, Ezra Wood, Dominique Young, Bin Yuan, Brian McDonald, Joost de Gouw, Jose-Luis Jimenez, et al., *CIRES, University of Colorado, Boulder*  
9:45
- 5UA.2 Impact of Fireworks, Residential Wood Burning, and Wildfire on PM<sub>2.5</sub> Concentrations in Southern California.** XIANG LI, Melissa Sheffer, Mark Bassett, Scott A. Epstein, *South Coast Air Quality Management District*  
10:00
- 5UA.3 Rethinking Near-road PM<sub>2.5</sub> in US Cities.** RAJ LAL, Anu Ramaswami, Armistead G. Russell, *Georgia Institute of Technology*  
10:15
- 5UA.4 Urban Atmospheric Aerosol Size Distributions: A Global Perspective.** Tianren Wu, BRANDON E. BOOR, *Purdue University*  
10:30
- 5UA.5 Air Quality in Canadian Port Cities: Regulation of Large Vessels to Low-Sulfur Marine Fuel in the North American Emissions Control Area (NA ECA).** Angelos Anastasopoulos, Uwayemi Sofowote, PHILIP K. HOPKE, Mathieu Rouleau, Tim Shin, Ryan Kulka, Paul-Michael Farrah, Mark Gibson, *Health Canada*  
10:45
- 5UA.6 Trends in PM<sub>2.5</sub> Transition Metals in Urban Areas across the United States.** CHRISTOPHER HENNIGAN, Aidan Mucci, Brian Reed, *University of Maryland, Baltimore County*  
11:00
- 5UA.7 Air Quality Management in Chile: Effectiveness and Environmental Justice Issues.** HECTOR JORQUERA, Yasna Llanos, Ana Villalobos, Javier Ustariz, *Pontificia Universidad Catolica de Chile*  
11:15

**Wednesday 11:30 AM - 1:00 PM**  
**Early Career Event**

**Wednesday 1:00 PM - 3:00 PM**  
**Session 6: Platform**

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6AC AEROSOL CHEMISTRY V: AEROSOL PHYSICAL PROPERTIES  
OREGON BALLROOM

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**Roya Bahreini and Manishkumar Shrivastava, chairs**

- 6AC.1 Raoult was Right: A Fresh Old Look at Solution Thermodynamics.** ANTHONY S. WEXLER, Ahmad Ikram, Simon Clegg, Devis Di Tommaso, Xiangwen Wang, *University of California, Davis*  
1:00
- 6AC.2 Exploring Gelation in Model Marine Aerosol Particles: Micro-Rheological Observations of Ternary Water-Monosaccharide-Calcium Ion Microdroplets.** RYAN DAVIS, David Richards, Kristin Trobaugh, *Trinity University*  
1:15
- 6AC.3 The Effect of Molecular Weight on the Phase Separation of Polymer-Polymer Aerosol Particles.** EMILY-JEAN OTT, Miriam Freedman, *The Pennsylvania State University*  
1:30
- 6AC.4 Spreading Ratio and Morphology of Size-dependent Secondary Organic Aerosols.** ZIYING LEI, Nicole Olson, Yue Zhang, Yuzhi Chen, Andrew Lambe, Natalie White, Joanna Atkin, Jason Surratt, Andrew Ault, *University of Michigan*  
1:45
- 6AC.5 Dynamic Nature of the Particle Phase for SOA Derived from Select Green Leaf Volatiles.** KEVIN FISCHER, Giuseppe Petrucci, *University of Vermont*  
2:00
- 6AC.6 Effects of Water-soluble Organic Carbon on Aerosol pH.** MICHAEL BATTAGLIA JR., Rodney J. Weber, Athanasios Nenes, Christopher Hennigan, *University of Maryland, Baltimore County*  
2:15
- 6AC.7 Using Nitric Acid- Nitrate Partitioning and Aerosol Composition Data to Constrain Gas-phase Ammonia Levels and Aerosol pH.** IFAYOYINSOLA IBIKUNLE, Rodney J. Weber, Athanasios Nenes, *Georgia Institute of Technology*  
2:30
- 6AC.8 Global Observations of Ammonium Balance and pH Indicate More Liquid Aerosol and Acidic Conditions than Current Models Predict.** BENJAMIN A. NAULT, Pedro Campuzano-Jost, Douglas Day, Jason Schroder, Roya Bahreini, Huisheng Bian, Mian Chin, Simon Clegg, Peter Colarco, John Crouse, Jack Dibb, Michelle Kim, Jack Kodros, Felipe Lopez-Hilfiker, Eloise Marais, Ann M. Middlebrook, J. Andrew Neuman, John Nowak, Jeffrey R. Pierce, Eric Scheuer, Joel A. Thornton, Kostas Tsigaridis, Patrick Veres, Paul Wennberg, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*  
2:45

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6BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH V:  
CHARACTERIZING EMISSIONS AND TRANSPORT FROM OPEN BIOMASS BURNING  
ROOM B 113-114

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**Vera Samburova and Hanyang Li, chairs**

- 6BC.1 A Meta-Analysis of Black Carbon Emissions from Fire-Prone Ecosystems in the United States.** ANDREW MAY, Hanyang Li, Robert J. Yokelson, Gavin McMeeking, *The Ohio State University*  
1:00
- 6BC.2 Chemical Fingerprinting of Particulate Organic Compounds in Fresh Smoke Produced from Burning Individual Western U.S. Wildland Fuels.** COTY JEN, Lindsay Hatch, Nathan Kreisberg, Christos Stamatis, Yutong Liang, Robert Weber, John Battles, Scott Stephens, Robert York, Kelley Barsanti, Allen Goldstein, *Carnegie Mellon University*  
1:15
- 6BC.3 Impact of Fuel Type and Combustion Phase on the Chemical Composition of Particulate Matter Emissions from Wildland Fires.** AMARA HOLDER, Johanna Aurell, Ingrid George, Brian Gullett, Venkatesh Rao, *U.S. EPA*  
1:30
- 6BC.4 Investigation into Airborne-Based Smoke Marker Ratios and Brown Carbon from Wildfires in the Western U.S. during the WE-CAN Study.** AMY P. SULLIVAN, Jakob Lindaas, Emily Fischer, Lauren Garofalo, Delphine K. Farmer, Sonia Kreidenweis, Teresa Campos, Jeffrey Collett, *Colorado State University*  
1:45
- 6BC.5 Chemical Composition of Brown Carbon in Tar Ball Aerosols from Biomass Burning.** Anusha P.S. Hettiyadura, Chunlin Li, Quanfu He, Yinon Rudich, ALEXANDER LASKIN, *Purdue University*  
2:00
- 6BC.6 Optical, Physical, and Chemical Properties of Emissions from Open Combustion of Cheatgrass (*Bromus Tectorum*).** MEGAN RENNIE, Vera Samburova, Deep Sengupta, Andrey Khlystov, Hans Moosmuller, *Desert Research Institute*  
2:15
- 6BC.7 Chemically Distinct Emissions from Highly Controlled Pyrolysis of Three Wood Types.** ANITA AVERY, Mariam Fawaz, Leah Williams, Tami Bond, Timothy Onasch, *Aerodyne Research, Inc.*  
2:30
- 6BC.8 The Ubiquity of Biomass Burning Particles in the Global Remote Troposphere.** GREGORY SCHILL, Karl D. Froyd, Daniel Murphy, Christina Williamson, Agnieszka Kupc, Charles Brock, Huisheng Bian, Mian Chin, Peter Colarco, Eric Ray, Alan Hills, Rebecca Hornbrook, Eric Apel, *NOAA ESRL and CIRES, University of Colorado Boulder*  
2:45
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**Kerry Kelly and Krystal Godri-Pollit, chairs**

- 6HA.1 Glottis Opening Effects on Inhaled Particle Deposition in Human Airways.** TED SPERRY, Yu Feng, *Oklahoma State University*  
1:00
- 6HA.2 Oxidative Potential of Particulate Matter and Generation of Reactive Oxygen Species in the Epithelial Lining Fluid.** TING FANG, Pascale Lakey, Rodney J. Weber, Manabu Shiraiwa, *University of California, Irvine*  
1:15
- 6HA.3 Time-Resolved Single Cell Response of Intracellular Reactive Oxygen Species to Aerosol Particles.** FOBANG LIU, Josh Whitley, Nga Lee Ng, Hang Lu, *Georgia Institute of Technology*  
1:30
- 6HA.4 Formation of Metal-Ligand Complexes in Atmospheric Aerosol and Their Effects on ROS Production in a Surrogate Lung Fluid.** CHIARA GIORIO, Sara D'Aronco, Alessandro Negro, Valerio Di Marco, Andrea Tapparo, *Università degli Studi di Padova, Italy*  
1:45
- 6HA.5 Aerosol-mediated ROS Production: Roles of Functional Groups and Reaction Kinetics.** HUANHUAN JIANG, Jin Chen, C.M. Sabbir Ahmed, Zixu Zhao, Haofei Zhang, Ying-Hsuan Lin, *University of California, Riverside*  
2:00
- 6HA.6 The Toxicity of Gasoline Automobile Engine Emissions Depends on Fuel Type (Gasoline and Ethanol) and Driving Cycle: A Combined Biological and Aerosol Composition Study.** Sebastian Oeder, J. Candeias, Tamara Kanashova, Benjamin Stengel, M. Dilger, S. Murugadoss, Olli Sippula, Sebastiano di Bucchianico, S. Bauer, Thorsten Streibel, Martin Sklorz, Jürgen Orasche, Toni Miersch, Hendryk Czech, C. Rüger, Bert Buchholz, C. Weiss, Jorma Jokiniemi, Maija-Riitta Hirvonen, Gunnar Dittmar, C. Schmidt-Weber, Jeroen Buters, RALF ZIMMERMANN, HICE Consortium, *University of Rostock and Helmholtz Zentrum Munich, Germany*  
2:15
- 6HA.7 Collection Methods Affect the Physicochemical Properties of Combustion Particles and Their Cellular Response in a Human Macrophage-Like Cell Line.** KAMALJEET KAUR, Isabel C. Jaramillo, Raziye Mohammadpour, Anne Sturrock, Hamid Ghandehari, Chris Reilly, Robert Paine, Kerry Kelly, *University of Utah*  
2:30
- 6HA.8 Quantitative Assessment of Organic Compound Deposition in the Human Respiratory System from Rechargeable E-Cigarettes.** YUAN SHAO, Kirsten Koehler, Ana Rule, Wentai Luo, Kevin McWhirter, Jim Pankow, *Johns Hopkins Bloomberg School of Public Health*  
2:45

## 6IM INSTRUMENTATION AND METHODS V: MOBILITY AND OTHER SIZING METHODS

## ROOM B 115-116

**Don Collins and Ezra Levin, chairs**

- 6IM.1 Extending the Stolzenburg DMA Transfer Function to the Scanning Electrical Mobility Spectrometer (SEMS).** YUANLONG HUANG, John Seinfeld, Richard Flagan, *California Institute of Technology*  
1:00
- 6IM.2 The Role of Size Distribution Representation in Aerosol Data Inversion.** RICHARD FLAGAN, Amanda Grantz, Yuanlong Huang, *California Institute of Technology*  
1:15
- 6IM.3 Asynchronous Functional Reactive Programming for Data Acquisition and Instrument Control: Example of a Free Software Implementation for Operating Scanning Mobility Particle Sizers.** MARKUS PETTERS, *North Carolina State University*  
1:30
- 6IM.4 MAGIC Spider: A Fast, Compact Scanning Electrical Mobility Spectrometer for UAV Deployment.** STAVROS AMANATIDIS, Steven Spielman, Gregory Lewis, Susanne Hering, Richard Flagan, *California Institute of Technology*  
1:45
- 6IM.5 On Passive Temperature Control and the Internal DMA Temperature in Hygroscopicity Tandem Differential Mobility Analyzers.** CHRISTOPHER OXFORD, Brent Williams, *Washington University in St. Louis*  
2:00
- 6IM.6 Multi-Electrometer Detector for Real-Time High-Resolution Measurements in Planar Differential Mobility Analyzers.** LUIS-JAVIER PEREZ-LORENZO, Mario Amo-Gonzalez, Juan Fernandez de la Mora, *Yale University*  
2:15
- 6IM.7 Finding the Right Mass: Comparing Measurements from a Differential Mobility Analyzer, Aerodynamic Aerosol Classifier and Aerosol Particle Mass Analyzer.** QI YAO, James Radney, Akua Asa-Awuku, Christopher Zangmeister, *National Institute of Standards and Technology*  
2:30

**6IM.8 Novel Approaches to DMA, CPMA, and APM Transfer Function Evaluation and Inversion to Determine Two-Dimensional Aerosol Mass-Mobility Distributions.** TIMOTHY SIPKENS, Jason S. Olfert, Steven Rogak, *University of British Columbia*  
2:45

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6RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOL II

ROOM A 106

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**Deborah McGlynn and Dana McGuffin, chairs**

**6RA.1 Revisiting Particle Dry Deposition: Observational Constraints of Submicron Aerosol and Black Carbon Fluxes.** Delphine K. Farmer, ETHAN EMERSON, Holly DeBolt, Gavin McMeeking, Joshua P. Schwarz, Joseph Katich, *Colorado State University*  
1:00

**6RA.2 Aerosol Shape Classification by Deep Learning of Scattering Patterns.** PATRICIO PIEDRA, Yong-Le Pan, Gorden Videen, *U.S. Army Research Laboratory*  
1:15

**6RA.3 Adsorption of VOCs by Airborne Dust Particles in the Semi-Arid Forest Canopy.** BORIS KRASOVITOV, Andrew Fominykh, Itzhak Katra, Avi Levy, Andrey Khlystov, *Ben-Gurion University of the Negev, Israel*  
1:30

**6RA.4 Chemical Composition of Individual Particles at a High-Altitude Mountain Station.** KUO-PIN TSENG, Tyler Capek, Noopur Sharma, Angela Marinoni, Douglas Orsini, Claudio Mazzoleni, Swarup China, *Pacific Northwest National Laboratory*  
1:45

**6RA.5 Impact of Seasonal Variabilities and Synoptic Conditions on Vertical Profiles of Trace Gas and Aerosol Properties over the Eastern North Atlantic.** YANG WANG, Guangjie Zheng, Swarup China, Michel Jensen, Daniel Knopf, Alexander Laskin, Alyssa Matthews, David Mechem, Fan Mei, Ryan Moffet, Tamara Pinterich, Arthur J. Sedlacek, John Shilling, Stephen Springston, Jason Tomlinson, Daniel Veghte, Rob Wood, Maria Zawadowicz, Jian Wang, *Washington University in St. Louis*  
2:00

**6RA.6 Rapid Chlorine Depletion in Nascent Sea Spray Aerosol by Condensed-Phase Aging Mechanisms.** Noopur Sharma, SWARUP CHINA, Kuo-Pin Tseng, Daniel Knopf, Josephine Aller, *Pacific Northwest National Laboratory*  
2:15

**6RA.7 Ammonium and Ammonia: Concentration Trends in the Northeast United States.** JAMES SCHWAB, Hesham Hassan, Matthew Ninneman, Joseph P. Marto, Jie Zhang, Sara Lance, Christopher Lawrence, Fangqun Yu, Gan Luo, Arshad Nair, Kevin Civerolo, Oliver Rattigan, *University at Albany, SUNY*  
2:30

**6RA.8 Influence of Agricultural Emissions and the Chesapeake Bay on Urban Aerosol Chemistry in Baltimore, Maryland.** MICHAEL BATTAGLIA JR., Nicholas Balasus, Kat Ball, Ruben Delgado, Christopher Hennigan, *University of Maryland, Baltimore County*  
2:45

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6SA SOURCE APPORTIONMENT II

ROOM B 117-119

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**Vikram Pratap and Jai Prakash, chairs**

**6SA.1 A Global Modeling Source Apportionment of PM<sub>2.5</sub>: Identifying Major Sources and Quantifying Sensitivities to Policy Relevant Reductions.** ERIN MCDUFFIE, Melanie Hammer, Michael Brauer, Steven Smith, Randall V. Martin, *Dalhousie University, Halifax, Canada*  
1:00

**6SA.2 Extensive Source Apportionment of PM<sub>2.5</sub> Organic Aerosols in New Delhi.** ANNA K. TOBLER, Deepika Bhattu, Francesco Canonaco, Sachchida N. Tripathi, Suresh Tiwari, Jay G. Slowik, Urs Baltensperger, Andre S.H. Prévôt, *Paul Scherrer Institute*  
1:15

**6SA.3 Wintertime PM<sub>2.5</sub> in the Kathmandu Valley and Terai Region of Nepal.** MD. ROBIUL ISLAM, Nita Khanal, Khadak Mahata, Siva Praveen Puppala, Narayan Babu Dhital, Michael Giordano, Benjamin Werden, Anobha Gurung, Arnico Panday, Robert J. Yokelson, Peter DeCarlo, Elizabeth Stone, *University of Iowa*  
1:30

**6SA.4 Characterization of Black Carbon and Trace Metals Using Soot-Particle Aerosol Mass Spectrometer: Insight into Organic Aerosol Sources in a Complex Urban Environment.** LAURA-HELENA RIVELLINI, Max Adam, Nethmi Kasthuriarachchi, Alex Lee, *National University of Singapore*  
1:45

- 6SA.5 Developing a Four-dimensional Variational Assimilation Framework for Refining U.S. Ammonia Emissions with Size-Resolved Aerosol.** SHANNON CAPPS, Mahmoudreza Momeni, Matthew Lombardo, Amir Hakami, Daven Henze, Steven Thomas, Jeremy Silver, Peter Rayner, CMAQ Adjoint Development Team, *Drexel University*  
2:00
- 6SA.6 Excitation-Emission Matrix Fluorescence Spectroscopy for Source Apportionment of Combustion Sources: Comparison to Positive Matrix Factorization Results from an Exposure Assessment Panel Study.** JAY RUTHERFORD, Timothy Larson, Edmund Seto, Igor Novosselov, Jonathan Posner, *University of Washington*  
2:15
- 6SA.7 Emissions from Rural and Urban Open Waste Burning in Ghana.** DAVID PFOTENHAUER, Evan Coffey, Ali Moro, Maxwell Dalaba, Abraham Oduro, Jerimiah Asumbere, John Nyante, Maxwell Sunu, Emmanuel Appoh, Michael Hannigan, *University of Colorado, Boulder*  
2:30
- 6SA.8 Impact of Emissions from Incomplete Combustion Sources, Biomass Burning and Fossil Fuel, on Ambient Concentrations of Black Carbon (BC) in the Milan Metropolitan Area.** AMIRHOSEIN MOUSAVI, Mohammad Sowlat, Christopher Lovett, Martin Rauber, Soenke Szidat, Roberto Boffi, Alessandro Borgini, Cinzia De Marco, Ario Ruprecht, Constantinos Sioutas, *University of Southern California*  
2:45

**Wednesday 3:00 PM - 3:30 PM**  
**Coffee Break**

**Wednesday 3:30 PM - 5:00 PM**  
**Session 7: Platform**

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7AC AEROSOL CHEMISTRY VI: SOA AGING  
OREGON BALLROOM

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**Jean Rivera-Rios and Julia Bakker-Arkema, chairs**

- 7AC.1 Condensed Phase Photochemical Reactions of Secondary Organic Aerosols: Photodegradation & Photosensitized Reactions.** VAHE BABOOMIAN, Xinke Wang, Rachel Gemayel, Yiran Gu, Lisa M. Wingen, Chrisitan George, Dmitry Fishman, Sergey Nizkorodov, *University of California, Irvine*  
3:30
- 7AC.2 Impact of Photochemical Aging on SOA Yield and Equilibrium Partitioning Predictions.** JOHN SHILLING, Maria Zawadowicz, Jiumeng Liu, Rahul Zaveri, Alla Zelenyuk, *Pacific Northwest National Laboratory*  
3:45
- 7AC.3 Photodegradation of Alpha-pinene Secondary Organic Aerosol.** Veronika Pospisilova, DAVID BELL, Imad El Haddad, Lamkaddam Houssni, Amelie Bertrand, Josef Dommen, Andre S.H. Prévôt, Urs Baltensperger, Jay G. Slowik, *Paul Scherrer Institute*  
4:00
- 7AC.4 Ozonolysis of Polycyclic Aromatic Hydrocarbons on the Surfaces of Secondary Organic Aerosol Particles.** ALLA ZELENYUK, Kaitlyn J. Suski, David Bell, Dan Imre, Simeon Schum, Lynn Mazzoleni, ManishKumar Shrivastava, Amber Kramer, Staci L. Simonich, *Pacific Northwest National Laboratory*  
4:15
- 7AC.5 Compositional Evolution of Secondary Organic Aerosol as Temperature Cycles in Atmospherically Relevant Ranges.** Zixu Zhao, Chen Le, Qi Xu, Weihang Peng, Huanhuan Jiang, Ying-Hsuan Lin, David R. Cocker III, HAOFEI ZHANG, *University of California, Riverside*  
4:30
- 7AC.6 Chemical Transformation of Isoprene Epoxydiol-Derived Organosulfates through Heterogeneous OH Oxidation: A Source of Inorganic Sulfate?** Hoi Ki Lam, Kai Chung Kwong, Hon Yin Poon, James F. Davies, Zhenfa Zhang, Avram Gold, Jason Surratt, MAN NIN CHAN, *The Chinese University of Hong Kong*  
4:45

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7BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH VI: IMPROVING OUR UNDERSTANDING OF SMOKE IMPACTS ON THE CLIMATE SYSTEM  
ROOM B 113-114

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**Amy Sullivan and Jamy Lee, chairs**

- 7BC.1 Long-range Transported North American Wildfire Aerosols Observed in Marine Boundary Layer of Eastern North Atlantic.** Guangjie Zheng, Arthur J. Sedlacek, Allison Aiken, Yan Feng, Thomas Watson, Shira Raveh-Rubin, Janek Uin, Ernie R. Lewis, JIAN WANG, *Washington University in St. Louis*  
3:30
- 7BC.2 Western US Wildfire Emissions of Ice Nucleating Particles.** PAUL DEMOTT, Kevin Barry, Ezra Levin, Kathryn Moore, Thomas Hill, Cynthia Twohy, Darin Toohey, Amy P. Sullivan, Sonia Kreidenweis, Emily Fischer, *Colorado State University*  
3:45
- 7BC.3 Latitudinal Shifts in Wildfire Activity and Smoke Concentrations in Response to 21st Century Climate and Land Cover Change over the Western US.** YANG LI, Loretta Mickley, Jed Kaplan, Pengfei Liu, *Harvard University*  
4:00
- 7BC.4 The Sources and Evolution of Ice Nucleation Particles Emitted by Biomass Burning.** LYDIA JAHL, Leif Jahn, Michael Polen, Thomas Brubaker, Bailey Bowers, Sara Graves, Ryan Sullivan, *Carnegie Mellon University*  
4:15
- 7BC.5 Significant Impact of Transported African Biomass Burning on Phosphorus Deposition and Biogeochemical Cycles in the Amazon and Tropical Atlantic Ocean.** Anne Barkley, Joseph M. Prospero, Natalie Mahowald, Douglas Hamilton, Kimberly Popendorf, Amanda Oehlert, Ali Pourmand, Alexandre Gatineau, Kathy Panechou-Pulcherie, Patricia Blackwelder, CASSANDRA GASTON, *University of Miami*  
4:30
- 7BC.6 What Matters for the Climate Impact of Biomass Burning Smoke.** DANIEL MURPHY, *NOAA ESRL*  
4:45
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#### 7HA HEALTH-RELATED AEROSOLS III

ROOM B 110-112

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#### Roby Greenwald and Kamaljeet Kaur, chairs

- 7HA.1 Black Carbon Exposure during Physical Activity is Associated with Exhaled Markers of Oxidative Stress and Metabolic Features Involving Oxidative Stress Mediating Pathways.** ROBY GREENWALD, Matthew J. Hayat, Elizabeth Finlon, Donghai Liang, Jeremy A. Sarnat, Dean P. Jones, Parinya Panuwet, Lou Ann Brown, *Georgia State University*  
3:30
- 7HA.2 Air Pollutant Exposure and inhaled Dose during Urban Commute.** Keith Casserly, HAIDER KHWAJA, *University at Albany*  
3:45
- 7HA.3 Sources and Health Risks of Ambient Polycyclic Aromatic Hydrocarbons in India.** Fenglin Han, Hao Guo, Jianlin Hu, Sri Kota, Jie Zhang, Qi Ying, HONGLIANG ZHANG, *Louisiana State University*  
4:00
- 7HA.4 Quantifying Pharmaceutical Aerosol Dissolution at Relative Humidities >99.5%.** ALLEN E. HADDRELL, Grazia Rovelli, David Lewis, Tanya Church, Jonathan P. Reid, *University of Bristol*  
4:15
- 7HA.5 Compositional Changes and Gas-Particle Partitioning of Unflavored E-Cigarette Carrier Liquids Propylene Glycol and Glycerol.** SARAH SUDA PETTERS, Yael-Natalie Escobar, Grace Nipp, Yue Zhang, Tianqu Cui, Ilona Jaspers, Jonathan Thornburg, Jason Surratt, *University of North Carolina at Chapel Hill*  
4:30
- 7HA.6 Amorphous Pullulan Trehalose Microparticle Platform for Respiratory Delivery.** NICHOLAS B. CARRIGY, Mani Ordoubadi, Yushan Liu, Omar Melhem, David Barona, Hui Wang, Leanne Milburn, Conor A. Ruzyski, Warren H. Finlay, Reinhard Vehring, *University of Alberta*  
4:45
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#### 7IM INSTRUMENTATION AND METHODS VI: ULTRAFINE PARTICLE SIZING AND COUNTING

ROOM B 115-116

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#### Chongai Kuang and Andrew Freedman, chairs

- 7IM.1 A Two-Stage Condenser to Improve the Detection of Sub-3 nm Particles Using Diethylene Glycol Condensation Particle Counter.** Mo Xue, Michel Attoui, JINGKUN JIANG, *Tsinghua University, Beijing, China*  
3:30
- 7IM.2 A New Mobility Particle Size Spectrometer Capable of Measuring the Size Range from 1.1 to 55nm.** GERHARD STEINER, Joonas Vanhanen, Joonas Enroth, Lothar Keck, Minna Väkevää, *Grimm Aerosol Technik Ainring*  
3:45
- 7IM.3 Modification of a Water-Based Condensation Particle Counter to Rapidly Measure Sub 3 Nanometer Atmospheric Clusters through Pulse Height Analysis.** CHONGAI KUANG, *Brookhaven National Laboratory*  
4:00

**7IM.4 Brownian Dynamics Simulation to Investigate the Performance of Half Mini DMA to Classify Sub-2 nm Particles.** HUANG ZHANG, Girish Sharma, Pratim Biswas, *Washington University in St Louis*  
4:15

**7IM.5 Charging Fractions of Soot Aggregates.** TYLER J. JOHNSON, Robert T. Nishida, Xiao Zhang, Jonathan Symonds, Jason S. Olfert, Adam M Boies, *University of Cambridge*  
4:30

**7IM.6 An Aerosol Gas Exchange System (AGES) for Engine Exhaust Conditioning.** MARKUS BAINSCAB, Sampsa Martikainen, Panu Karjalainen, Jorma Keskinen, Alexander Bergmann, *Graz University of Technology*  
4:45

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#### 7RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOL III

ROOM A 106

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##### James Schwab and Yang Wang, chairs

**7RA.1 Evaluating Aerosol Property Predictions from E3SM Using Recent ARM Field Campaign Measurements in Continental and Tropical Environments.** JEROME FAST, Po-Lun Ma, John Shilling, ManishKumar Shrivastava, Jason Tomlinson, Jian Wang, Rahul Zaveri, Alla Zelenyuk, *Pacific Northwest National Laboratory*  
3:30

**7RA.2 Intermediate-scale Concentrations of Volatile and Semivolatile Organic Compounds in the Near-canopy Forest Atmosphere and Implications for Emission Heterogeneity.** JIANHUAI YE, Carla E. Batista, Igor O. Ribeiro, Patrícia C. Guimarães, Adan Medeiros, Rafael Barbosa, Rafael L. Oliveira, Sérgio Duvoisin Junior, Kolby Jardine, Dasa Gu, Alex Guenther, Karena McKinney, Leila Martins, Rodrigo Souza, Scot T. Martin, *Harvard University*  
3:45

**7RA.3 Atmospheric Microplastics in Populated and Remote Regions of Colorado.** MARWA EL-SAYED, Katherine Benedict, Amy P. Sullivan, Bret Schichtel, Jeffrey Collett, *Colorado State University*  
4:00

**7RA.4 Characteristics of Particle Size Distributions for Two Sites in New York State.** JOSEPH P. MARTO, James Schwab, Fangqun Yu, Gan Luo, *University at Albany, SUNY*  
4:15

**7RA.5 Multi-Wavelength Optical Properties of Arctic Haze Aerosols in the Canadian High Arctic.** PATRICK HAYES, Andy Vicente-Luis, Samantha Tremblay, Rachel Chang, Pierre Fogal, Felicia Kolonjari, Sangeeta Sharma, Richard Leitch, Alireza Aslemund, Norman O'Neill, *Université de Montréal*  
4:30

**7RA.6 Chemical Imaging of Atmospheric Particles Sampled over Agricultural Fields in Indiana.** JAY TOMLIN, Kevin Jankowshi, Swarup China, Brian Stirm, Robert Kaeser, Paul Shepson, Alexander Laskin, *Purdue University*  
4:45

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#### 7UA URBAN AEROSOLS V: PREDICTING AEROSOLS IN URBAN ENVIRONMENTS

ROOM B 117-119

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##### Serena Chung and Elyse Pennington, chairs

**7UA.1 High Resolution (1 km) Chemical Transport Modeling of Fine Particulate Matter in an Urban Area.** PABLO GARCIA, Shayak Sengupta, Spyros Pandis, Peter Adams, *Carnegie Mellon University*  
3:30

**7UA.2 PM<sub>2.5</sub>, PM<sub>10</sub>, and Ozone Forecasting in Southern California: Determining the Best Forecast Model as a Function of Predicted Meteorology and Emissions.** SCOTT A. EPSTEIN, Nico Schulte, Mark Bassett, Elham Baranzadeh, Melissa Sheffer, *South Coast Air Quality Management District*  
3:45

**7UA.3 Impacts of Spatial Distribution and Spatial Resolution of Emissions on Air Quality Model.** YITING LI, Michael Kleeman, *University of California, Davis*  
4:00

**7UA.4 Simulation on IVOC Emissions and SOA Formation in Los Angeles during CalNex Study Using Updated Mobile Source Emission Profiles and SOA Parameterization.** Quanyang Lu, Benjamin Murphy, Peter Adams, Yunliang Zhao, Momei Qin, Havala Pye, Christos Efstathiou, Chris Allen, ALLEN ROBINSON, *Carnegie Mellon University*  
4:15

**7UA.5 Estimated Aerosol Radiative and Health Effects of the Residential Coal Ban in the Beijing-Tianjin-Hebei Region of China.** KELSEY BILSBACK, Michael Cheeseman, Bonne Ford, Jack Kodros, Xiaoying Li, Emily Ramnarine, Ellison Carter, Jeffrey R. Pierce, *Colorado State University*  
4:30

**7UA.6 Bridging Model Estimates of Vehicular Emissions with Near-Roadway Ambient Measurements.** AYLAMORETTI, David R. Cocker III, Matthew Barth, *University of California, Riverside*  
4:45

**Wednesday 5:00 PM - 6:00 PM**

**Working Group Meetings 2: Aerosol Physics, Atmospheric Aerosols, Bioaerosols, Control and Mitigation Technology, Indoor Aerosols and Aerosol Exposure**

**Wednesday 6:00 PM - 7:00 PM**

**Annual Business Meeting**

**Thursday**

**Thursday 8:00 AM - 9:15 AM**

**Plenary III**

8:00 **Soot Formation and Chemical Evolution during Combustion** Hope Michelsen, *University of Colorado, Boulder*

**Moderator** Kevin Wilson, *Lawrence Berkeley National Laboratory*

9:00 **Sinclair Award Presentation, Mercer Award Announcement** Matti Maricq, *Ford Motor Company*

**Thursday 9:00 AM - 3:30 PM**

**Exhibits Open**

**Thursday 9:15 AM - 9:45 AM**

**Coffee Break**

**Thursday 9:45 AM - 11:30 AM**

**Session 8: Platform**

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8AE/IA AEROSOL EXPOSURE III AND INDOOR AEROSOLS II

ROOM B 115-116

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**Donghyun Rim and Teresa Barone, chairs**

**8AE/IA.1 An Analysis of Fine Inorganic Aerosols Emitted by a Diesel Engine with Urea-Based Selective Catalytic**

9:45 **Reduction.** TERESA BARONE, Taekhee Lee, Jon Hummer, Sherri Friend, John Storey, Samuel Lewis, Aleksandar Bugarski, *National Institute for Occupational Safety and Health*

**8AE/IA.2 Establishment of a PM Toxicity Evaluation Platform for Tailpipe Emissions under Real Driving Conditions.**

10:00 CHEN-HUA WANG, Yi-Ying Chen, Po-Kai Chang, Hsiao-Chi Chuang, Ta-Chih Hsiao, *National Taiwan University, Taiwan*

**8AE/IA.3 Online Aerosol Monitoring for In Vitro Toxicological Studies Using Single-Photoionization Mass**

10:15 **Spectrometry.** CARLA FREGE, Sandro Steiner, Sandra Ferreira, Shoaib Majeed, Francesco Lucci, Mahdi Asgari, Julia Hoeng, Stefan Frentzel, Arkadiusz Kuczaj, *Philip Morris International R&D*

**8AE/IA.4 Estimations of Oxidative Potential Contributed by Metal Oxides in Welding Fume Particles.** JUN WANG,

10:30 Jacob Bartels, Macrio Bezerra, *University of Oklahoma Health Sciences Center*

**8AE/IA.5 Lung Dosimetry Assessments of Welding Fume and Gas Exposure using a Virtual Human Model with a**

10:45 **Subject-Specific Respiratory System.** JIANAN ZHAO, Yu Feng, Macrio Bezerra, Jun Wang, Ted Sperry, *Oklahoma State University*



**8AE/IA.6 Passive Exposure to Aerosols Emitted from Vaping Marijuana Liquid.** LANCE WALLACE, Wayne Ott, Kai-Chung Cheng, Tongke Zhao, Lynn M. Hildemann, *US EPA (retired)*

**8AE/IA.7 Cognitive Impacts of Exposure to Indoor Sources.** Heather Schwartz-Narbonne, BOWEN DU, Marlie Tandoc, Michael Mack, Jeffrey Siegel, *University of Toronto*

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8AP AEROSOL PHYSICS I

ROOM B 117-119

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**Chuji Wang and Rajan Chakrabarty, chairs**

**8AP.1 Non-equilibrium Effects in SOA Formation and Evaporation Investigated with an Advanced Kinetic Multi-layer Model of Gas-particle Interactions (KM-GAP 2.0).** THOMAS BERKEMEIER, Manabu Shiraiwa, Nga Lee Ng, Ulrich Pöschl, *Max Planck Institute for Chemistry*

**8AP.2 Phase Behavior and Surface Tension of Sea Spray Aerosol Droplets using Microfluidics.** SHIHAO LIU, Lucy Nandy, Cari Dutcher, *University of Minnesota*

**8AP.3 Utilizing a Sub-Micron Silicon Nitride Waveguide as Single Particle Aerosol Detector.** ANTON BUCHBERGER, Paul Maierhofer, Martin Sagmeister, Victor Sidorov, Jochen Kraft, Alexander Bergmann, *Graz University of Technology*

**8AP.4 What Slows the Freezing of Pentane Nanodroplets?** Kehinde Ogunronbi, Sherwin Singer, BARBARA WYSLOUZIL, *The Ohio State University*

**8AP.5 Predictions of Viscosity of Organic Aerosols by Volatility Distributions: Applications to Field Observations.** YING LI, Douglas Day, Harald Stark, Jose-Luis Jimenez, Manabu Shiraiwa, *University of California, Irvine*

**8AP.6 Spray Aerosol Production from Raindrop Impaction on Seawater and Soil Surfaces.** Kaili Zhou, Shurong Wang, Xin Yang, XIAOFEI WANG, *Fudan University*

**8AP.7 Mass Absorption Cross Section and its Enhancement Factor for Internally Mixed Black Carbon Aggregates with varying Fractal Dimension.** PAYTON BEELER, William Heinson, Rajan K. Chakrabarty, *Washington University in St. Louis*

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8BC SYMPOSIUM: BIOMASS COMBUSTION: EMISSIONS, CHEMISTRY, AIR QUALITY, CLIMATE, AND HUMAN HEALTH VII: CHEMICAL AND PHYSICAL EVOLUTIONS OF BIOMASS BURNING PLUMES

ROOM B 113-114

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**Ricardo Morales Betancourt and Mariam Fawaz, chairs**

**8BC.1 Long-Range Transport Mechanisms in East and Southeast Asia and Impacts on Size-Resolved Aerosol Composition: Contrasting High and Low Aerosol Loading Events.** RACHEL BRAUN, Mojtaba Aghdam, Paola Bañaga, Grace Betito, Ma. Obiminda Cambaliza, Melliza Cruz, Genevieve Lorenzo, Alex MacDonald, James Simpas, Connor Stahl, Armin Sorooshian, *University of Arizona*

**8BC.2 Where's the Mass: Why Might Field and Laboratory Studies on Aging of Biomass Burning Aerosols Disagree on Mass Enhancements?** ANNA HODSHIRE, Ali Akherati, Matthew Alvarado, Benjamin Brown-Steiner, Shantanu Jathar, Jose-Luis Jimenez, Sonia Kreidenweis, Chantelle Lonsdale, Timothy Onasch, Amber Ortega, Jeffrey R. Pierce, *Colorado State University*

**8BC.3 Simulating the Near-Source Forest Fire Plume Chemistry and Secondary Particle Formation Using SAM-ASP.** Chantelle Lonsdale, MATTHEW ALVARADO, Anna Hodshire, Emily Ramnarine, Jeffrey R. Pierce, *AER*

**8BC.4 Rapid Transformations of Biomass Burning Particulate Emissions in the Near Field.** ARTHUR J. SEDLACEK, Timothy Onasch, Kouji Adachi, W. Patrick Arnott, Peter Buseck, Qi Zhang, John Shilling, Mikhail Pekour, Sonya Collier, Shan Zhou, Andrew Freedman, Lawrence Kleinman, *Brookhaven National Lab*

**8BC.5 Analysis of Unidentified Organic Species in Fresh and Aged Biomass-Burning Emissions Generated under Controlled Conditions.** VERA SAMBUROVA, Deep Sengupta, Chiranjivi Bhattarai, Adam Watts, Hans Moosmuller, Andrey Khlystov, *Desert Research Institute*

- 8BC.6 Measured and Modeled SOA Formation from Biomass-Burning-Derived Precursors.** KELLEY BARSANTI, Isaac Afreh, Jia Jiang, Lindsay Hatch, William P. L. Carter, Weihang Peng, David R. Cocker III, *University of California, Riverside*  
11:00
- 8BC.7 Large Contribution of Oxygenated Aromatic Compounds in Biomass Burning Emissions to Secondary Organic Aerosol Formation.** ALI AKHERATI, Charles He, Matthew Coggon, Abigail Koss, Carsten Warneke, Joost de Gouw, Christopher Cappa, Jeffrey R. Pierce, Michael Kleeman, Shantanu Jathar, *Colorado State University*  
11:15

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8CM CONTROL AND MITIGATION TECHNOLOGY I

ROOM B 110-112

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**Marit Meyer and Tian Xia, chairs**

- 8CM.1 A Novel In-stack Pre-cutter for Separating Droplets in Gas Streams Saturated with Water Vapor.** Chih-Hsiang Chien, Joshua Udvardy, CHANG-YU WU, Zachery Emerson, Derek Sain, Leland Carlson, Vipin Varma, Cathe Kalisz, *University of Florida*  
9:45
- 8CM.2 Numerical Simulations of Inhomogeneous Current Density Effects on ESP Performance for Fly Ash and Mercury Sorbent Mixtures.** ERIC MONSU LEE, Herek Clack, *Illinois Institute of Technology*  
10:00
- 8CM.3 An Experimental Study on Airflow Patterns of Pleated Filters by Using the PIV Method.** QINGFENG CAO, Seungkoo Kang, David Y. H. Pui, *University of Minnesota*  
10:15
- 8CM.4 Respiratory Deposition of Ultrafine Welding Fume Particles.** WEI-CHUNG SU, Yi Chen, Marcio Bezerra, Jun Wang, *University of Texas Health Science Center at Houston*  
10:30
- 8CM.5 Resonances in Laser Desorption/Ionization of Particle-Bound Metals Feature Remote Sensing of Ship Emissions.** Johannes Passig, Julian Schade, Thomas Kröger-Badge, Robert Irsig, Hendryk Czech, Martin Sklorz, Lei Li, Xue Li, Zhen Zhou, Benjamin Stengel, Bert Buchholz, Thorsten Streibel, RALF ZIMMERMANN, *Helmholtz Zentrum München and University of Rostock*  
10:45
- 8CM.6 A CFD Study of a Vegetative Barrier as a Near-Road Pollutant Mitigation Strategy: An Evaluation of CFD Modelling Techniques with Field Measurements.** KHALED HASHAD, Xinwei Liu, Bo Yang, K. Max Zhang, Pradeep S. Prathibha, Jay R. Turner, Daniel Fleischer, *Cornell University*  
11:00
- 8CM.7 Airborne Measurements of Particle Size Distribution in Coal Power Plant Emissions Exhausted through Cooling Towers.** JAN HOVORKA, Jaroslav Schwarz, Miroslav Klán, Filip Kozbrzek, Petr Marecek, *Charles University*  
11:15

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8IM INSTRUMENTATION AND METHODS VII: CHEMICAL METHODS

OREGON BALLROOM

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**Philip Croteau and Swarup China, chairs**

- 8IM.1 Towards More Accurate Particulate Organic Nitrate Quantification through Aerosol Mass Spectrometry.** Frans Graeffe, Liine Heikkinen, LEAH WILLIAMS, Jean-Eudes Petit, Athina-Cerise Kalogridis, Andrew Lambe, Evelyn Freney, Philip Croteau, John Jayne, Manjula Canagaratna, Mikael Ehn, Olivier Favez, Alexandre Albinet, *University of Helsinki*  
9:45
- 8IM.2 A New Method to Quantify Mineral Dust, Sea Salt, Biomass Burning, and Other Aerosol Species from Aircraft Platforms using Single Particle Mass Spectrometry.** KARL D. FROYD, Daniel Murphy, Charles Brock, Pedro Campuzano-Jost, Jack Dibb, Jose-Luis Jimenez, Agnieszka Kupc, Ann M. Middlebrook, Gregory Schill, Kenneth Thornhill, Christina Williamson, James Wilson, Luke Ziemba, *NOAA ESRL and CIRES*  
10:00
- 8IM.3 A New Method for Robust, Moderate-Cost Measurement of Oxygen, Carbon, and Sulfur Content of Organic Compounds and Mixtures.** James Hurley, Nathan Kreisberg, Braden Stump, Patricia Keady, Susanne Hering, GABRIEL ISAACMAN-VANWERTZ, *Virginia Tech*  
10:15
- 8IM.4 Intercomparison of AMS and ACSM Measurements for Particulate Organic Nitrates (pON).** ATHINA-CERISE KALOGRIDIS, Jean-Eudes Petit, Alexandre Albinet, Andrew Lambe, Liine Heikkinen, Frans Graeffe, Manuela Cirtog, James Allan, Zainab Bibi, Tanguy Amodeo, Nicolas Karoski, Laurent Meunier, Valerie Gros, Mikael Ehn, Tuija Jokinen, Minna Aurela, Marek Maasikmets, Axel C. Eriksson, Erik Ahlberg, Evelyn Freney, Konstantinos Eleftheriadis, MariCruz Minguillon, Leah Williams, Olivier Favez, et al., *NCSR Demokritos*  
10:30

- 8IM.5** **A Novel High-Resolution Ion Mobility Drift Tube with Diffusion Auto-correction.** XI CHEN, Carlos Larriba-Andaluz, *IUPUI*  
10:45
- 8IM.6** **Quantifying Errors in Aerosol Mixing State Metrics due to Limited Particle Sample Size.** Jessica Gasparik, NICOLE RIEMER, Matthew West, Qing Ye, Ryan Sullivan, Albert Presto, *University of Illinois at Urbana-Champaign*  
11:00
- 8IM.7** **Probing the Phase State and Viscosities of Sub-micron Organic Aerosols in Controlled Environmental Conditions.** Noopur Sharma, KUO-PIN TSENG, Libor Kovarik, Swarup China, *Pacific Northwest National Laboratory*  
11:15

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8NM NANOPARTICLES AND MATERIALS SYNTHESIS I

ROOM A 106

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**Girish Sharma and Tim Sipkens, chairs**

- 8NM.1** **Electroluminescence Induced by Electric Current through Defects of Cubic Magnesium Oxide Nanoparticles Synthesized by Self-Combustion Method.** CHANGHYUK KIM, Peter Pikhitsa, Sukbyung Chae, Kyungil Cho, Mansoo Choi, *Pusan National University*  
9:45
- 8NM.2** **A Numerical Model to Predict the Morphology of Particle Synthesized via Spray Pyrolysis.** SUKRANT DHAWAN, Pratim Biswas, *Washington University in St Louis*  
10:00
- 8NM.3** **One-step Gas-phase Synthesis of Core-shell Nanoparticles via Surface Segregation.** NAMSOON EOM, Markus Snellman, Martin Ek, Maria Messing, Knut Deppert, *Lund University*  
10:15
- 8NM.4** **Analysis of Si Nanoparticle Growth in Low Pressure Non-thermal Plasmas and Plasma Afterglows via Differential Mobility Analysis and Monte Carlo Simulations.** XIAOSHUANG CHEN, Takafumi Seto, Uwe R. Kortshagen, Christopher Hogan Jr., *University of Minnesota*  
10:30
- 8NM.5** **A Versatile Aerosol-based Technique to Deposit Nanoparticle Thin Films from Colloidal Solutions.** SHALINEE KAVADIYA, Jonathan Bryan, Yuji Okamoto, Peter Firth, Hussain Saddam, Zachary Holman, *Arizona State University*  
10:45
- 8NM.6** **Optical Monitoring of Aerosol Thermal Processing.** JAMES RADNEY, Christopher Zangmeister, *National Institute of Standards and Technology*  
11:00
- 8NM.7** **Observing, Predicting and Controlling Crystalline and Amorphous Particle Formation in Evaporating Aqueous Aerosol Droplets.** JONATHAN P. REID, Florence Gregson, Rachael E.H. Miles, Jim Walker, Daniel Hardy, Justice Archer, Joshua Robinson, Royall Patrick, *University of Bristol*  
11:15

**Thursday 11:30 AM - 12:15 PM**  
**Light Take-Away Lunch**

**Thursday 12:15 PM - 1:45 PM**  
**Session 9: Poster**

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9AC AEROSOL CHEMISTRY VII: POSTERS

EXHIBIT HALL A

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- 9AC.2** **Simulation of SOA Formation from the Photooxidation of Gasoline in the Presence of NO<sub>x</sub> and Electrolytic Inorganic Aerosol.** MYOSEON JANG, Chufan Zhou, Zechen Yu, Sanghee Han, *University of Florida*
- 9AC.3** **Recent Declines in Water Uptake and Acidity of Inorganic Aerosols during Beijing Winter Haze Events.** SHAOJIE SONG, *Harvard University*
- 9AC.4** **Emergence of a New Chemical Regime: Growing Abundance of Water Soluble Organics in Cloud Water Associated with a Growing Ion Imbalance.** CHRISTOPHER LAWRENCE, Sara Lance, James Schwab, James Dukett, Kevin Civerolo, Oliver Rattigan, Dan Kelting, Elizabeth Yerger, Hunter Favreau, Paul Casson, Richard Brandt, *University at Albany, SUNY*

- 9AC.5 IEPOX-Derived Organosulfates Contribute a Significant Portion of the Aerosol Mass Spectral Tracer Ion of IEPOX-derived SOA and Its Implications.** YUE ZHANG, Yuzhi Chen, Manjula Canagaratna, Sri Hapsari Budisulistiorini, Tianqu Cui, Zhenfa Zhang, Avram Gold, John Jayne, Douglas Worsnop, Barbara Turpin, Jason Surratt, *Univ. of North Carolina, Chapel Hill/Aerodyne Research, Inc.*
- 9AC.6 Combined Impacts of Acidity and Viscosity on the Formation of Inorganic-Organic Mixed Isoprene Epoxydiol (IEPOX)-Derived Aerosols.** YUE ZHANG, Yuzhi Chen, Ziyang Lei, Nicole Olson, Matthieu Riva, Abigail Koss, Zhenfa Zhang, Avram Gold, John Jayne, Douglas Worsnop, Timothy Onasch, Barbara Turpin, Jesse Kroll, Andrew Ault, Jason Surratt, *University of North Carolina at Chapel Hill*
- 9AC.7 Aerospec – An Online Platform for Analysis of Chemical Composition of Aerosols.** HE JIAYANG, Gaurav Mahamuni, Jay Rutherford, Jiawei Zhang, Igor Novosselov, Edmund Seto, *University of Washington*
- 9AC.8 Observation on Chemical Characteristics of Airborne Particles in Xi'an, Inland China during Dust Storm Events with Implications for Heterogeneous Formation of Ammonium Nitrate and Enhancement of N-deposition.** GEHUI WANG, Wu Can, Jianjun Li, Cong Cao, Jin Li, *East China Normal University*
- 9AC.9 Effects of Common Inorganic Salts on Aqueous Photochemistry of Secondary Organic Aerosol.** ALEXANDRA KLODT, Dian Romonosky, Peng Lin, Julia Laskin, Alexander Laskin, Sergey Nizkorodov, *University of California, Irvine*
- 9AC.10 Growth Mechanisms of Size-Selected Ammonium Sulfate Seed Particles by Monoterpene Ozonolysis.** JUSTIN KRASNOMOWITZ, Michael J. Apsokardu, Devon Haugh, Michael Taylor, Murray Johnston, *University of Delaware*
- 9AC.11 Accelerated Reaction of Carbonyls in Aerosol Droplets Studied with Droplet Assisted Ionization.** YAO ZHANG, Michael J. Apsokardu, Devan E. Kerecman, Murray Johnston, *University of Delaware*
- 9AC.12 Elucidation of the Influence of Specific Meteorological Conditions on the Electrostatic Charging State of Ambient Aerosols by a Parallel Electrode Plate Device.** RYOYA TABATA, Ayumi Iwata, Kentaro Fujioka, Tomoaki Okuda, *Keio University*
- 9AC.13 Chemical Characterization of Secondary Organic Aerosol Formed from the Photoreactions of Guaiacyl Acetone in an Aqueous Particle Extract.** WENQING JIANG, Richie Kaur, Martin Brüggemann, Hartmut Herrmann, Cort Anastasio, Qi Zhang, *University of California, Davis*
- 9AC.14 Impact of Wildfire on Ambient Air Levels of Unsubstituted and Alkylated-PAHs in the Region of Oil Sands Exploitation and Bitumen Processing in Alberta, Canada.** ANDRZEJ WNOROWSKI, Jean-Pierre Charland, *Environment and Climate Change Canada*
- 9AC.15 The Role of the Solvent Environment on Physical Properties in Secondary Organic Aerosol Mimicking Solutions.** Rebecca Miller, Hannah Inman, Emmaline Longnecker, Lucy Metz, ANDREW BERKE, *Smith College*
- 9AC.16 Assessing the Contribution of NO<sub>3</sub> Radical Chemistry to Nanoparticle Composition in the Boreal Atmosphere.** DANIELLE C. DRAPER, Michael Lawler, Theo Kurten, James Smith, *University of California, Irvine*
- 9AC.17 Modeling Studies of Isoprene- and Monoterpene-derived Organic Nitrates in a Mixed Forest Environment and the Role of Deposition and Aerosol Multiphase Chemistry.** ISAAC CANADA, Paul Shepson, Jonathan Slade, *University of California, San Diego*
- 9AC.18 An Isomer-Resolved Picture of Evolving Organic Aerosol Composition during Heterogeneous OH-Oxidation under Different OH concentrations and Timescales.** ZIXU ZHAO, Haofei Zhang, *University of California, Riverside*
- 9AC.19 Toward Development of a Metric to Relate Molecular Characteristics with Optical Properties for Biomass Burning Aerosol.** NISHIT SHETTY, Apoorva Pandey, Simeon Schum, Maryam Khaksari, Lynn Mazzoleni, Rajan K. Chakrabarty, *Washington University in St. Louis*
- 9AC.20 Formation of Reactive Oxygen Species by Size-Segregated Particles Collected in Forest and Urban Environments.** BRIAN HWANG, Ting Fang, Michihiro Mochida, Manabu Shiraiwa, *University of California, Irvine*
- 9AC.21 Secondary Aerosol Formation from Oxidation of Dimethyl Selenide.** ROYA BAHREINI, Alexander Frie, Ying-Hsuan Lin, C.M. Sabbir Ahmed, *University of California, Riverside*
- 9AC.22 Healthy and Aphid-stressed Shrubby Plant (*Baccharis salicifolia*) Metabolomics Impact on Produced Biogenic Secondary Organic Aerosol.** FATEMEH KHALAJ, Celia Faiola, Kailen Mooney, Swarup China, Christopher Anderton, Alber Rivas-Ubach, *University of California, Irvine*

- 9AC.24 NO<sub>3</sub>-initiated Oxidation of Isoprene: Oxidation Mechanism and Aerosol Formation.** BELLAMY BROWNWOOD, Juliane Fry, *Reed College*
- 9AC.25 Particle, Volatile Organic Compounds and Polycyclic Aromatic Hydrocarbon Emission Flaring from Hydrofracking.** OLANREWAJU WASIU BELLO, Thi Duong Bui, Benjamin Savareear, J. James Harynuk, Larry W. Kostiuik, Jason S. Olfert, *University of Alberta*
- 9AC.26 Heterogeneous Chemistry of CaCO<sub>3</sub> Aerosols with HNO<sub>3</sub> and HCl.** HAN HUYNH, V. Faye McNeill, *Columbia University*
- 9AC.27 ISORROPIA-MCX: Implementation of the Multicomplex Variable Method into the Aerosol Thermodynamic Model, ISORROPIA.** BRYAN BERMAN, Isaiah Sauvageau, Shannon Capps, Ryan Russell, *Drexel University*
- 9AC.28 Degradant Formation in Cannabis Concentrate Aerosols.** ALISHA ORTIZ, Jiries Meehan-Atrash, Robert Strongin, *Portland State University*
- 9AC.29 Growth and Evaporation Kinetics of Secondary Organic Aerosol as a Function of Relative Humidity.** RAHUL ZAVERI, John Shilling, Alla Zelenyuk, Maria Zawadowicz, Kaitlyn J. Suski, Swarup China, Daniel Veghte, Alexander Laskin, *Pacific Northwest National Laboratory*
- 9AC.30 Chemical Role of Water on Secondary Organic Aerosol Formation and Ageing.** CHRISTOPHER SNYDER, Giuseppe Petrucci, *University of Vermont*
- 9AC.32 Using GECKO-A to Study Secondary Organic Aerosol Formation from Camphene Relative to  $\alpha$ -Pinene and Limonene.** ISAAC AFREH, Bernard Aumont, Marie Camredon, Kelley Barsanti, *University of California, Riverside*
- 9AC.33 Simulation of SOA Formation Using Gas-Wall Process Free Model parameters in the Presence of Inorganic Salts Containing Electrolytes under Various NO<sub>x</sub> Levels.** SANGHEE HAN, Myoseon Jang, *University of Florida*
- 9AC.34 Effects of Emission Reduction on Air Pollution in India.** HAO GUO, Sri Kota, Hongliang Zhang, *Louisiana State University*
- 9AC.35 Isoprene Effects on Biogenic and Inorganic New Particle Formation.** LEE TISZENKEL, Ryan Haley, Shanhu Lee, *University of Alabama Huntsville*
- 9AC.37 Investigations of the Mixing of Sulfate Aerosols and Isoprene Epoxydiols in Secondary Organic Aerosol Formation Chamber Experiments.** THEODORA NAH, Lu Xu, Kymberlee Osborne-Benthaus, S. Meghan White, Stefan France, Nga Lee Ng, *City University of Hong Kong*
- 9AC.38 Photolysis of Aqueous Atmospheric Aerosol Mimics.** MELISSA GALLOWAY, Jacqueline Sharp, Shiqing Ma, Joseph Woo, *Lafayette College*
- 9AC.39 Effects of Relative Humidity and Aerosol Liquid Water on the Molecular Composition and Aging of Secondary Organic Aerosols.** CYNTHIA WONG, Lauren Fleming, Julia Montoya-Aguilera, Sergey Nizkorodov, *University of California, Irvine*
- 9AC.40 Role of Particle Composition in the Heterogeneous Reactivity of Carboxylic Acid Aerosol.** REBECCA RAPF, Kevin Wilson, *Lawrence Berkeley National Laboratory*
- 9AC.41 An Integrated Organic Aerosol Simulation: From Volatile Precursors to Cloud Droplet Formation.** KYLE GORKOWSKI, Camilo Damha, Dalrin Ampritta Amaladhasan, Thomas Preston, Andreas Zuend, *McGill University*
- 9AC.42 Volatility Change during Droplet Evaporation of Pyruvic Acid.** SARAH SUDA PETERS, Thomas Hilditch, Sophie Tomaz, Rachael E.H. Miles, Jonathan P. Reid, Barbara Turpin, *University of North Carolina at Chapel Hill*
- 9AC.43 A Scalable, Portable, Gas-Aerosol Chemistry Treatment for Atmospheric Models.** MATTHEW DAWSON, Christian Guzman, Matthew West, Nicole Riemer, Mario Acosta, Oriol Jorba, Donald Dabdub, *Barcelona Supercomputing Center*
- 9AC.44 H<sub>2</sub>SO<sub>4</sub>-H<sub>2</sub>O Binary and H<sub>2</sub>SO<sub>4</sub>-H<sub>2</sub>O-NH<sub>3</sub> Ternary Homogeneous and Ion-mediated Nucleation: Lookup Tables and Comparisons with CLOUD Measurements.** FANGQUN YU, Alexey Nadykto, Gan Luo, Jason Herb, *The State University of New York at Albany*
- 9AC.45 Day and Night Variability of Carbonaceous Aerosols over Urban Region of Northern India.** ATAR SINGH PIPAL, Ajay Taneja, Dr. B. R. Aambedkar *University, Agra, India*
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9AP AEROSOL PHYSICS II: POSTERS

EXHIBIT HALL A

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- 9AP.1 The Light Scattering Study of Highly Absorptive Hematite Aggregates.** PRAKASH GAUTAM, Justin Maughan, Christopher Sorensen, *Kansas State University*
- 9AP.2 The Effect of Particle Size on Aerosol Concentration.** TERRENCE GARCIA, Ashley Alli, Sabrina MAJ McGraw, *Laulima Government Solutions*
- 9AP.3 The Dependence of the Optical Properties of Soot Aggregates on Their Morphological Mixing State.** OGOCHUKWU ENEKWIZU, Divjyot Singh, Mary McGuinness, Alexei Khalizov, *New Jersey Institute of Technology*
- 9AP.4 Integration of the MOSAIC Aerosol Model into the Environment and Climate Change Canada AQ Model.** KIRILL SEMENIUK, Ashu Dastoor, *Environment and Climate Change Canada*
- 9AP.6 Individually Identifiable Aerosol Particles Using Luminescent Nanocrystals.** Michael H. Stewart, Kimihiro Susumu, Jozsef Czege, Cathy S. Scotto, Alan Huston, JAY D. EVERSOLE, *Naval Research Laboratory*
- 9AP.7 Modeling of Multispecies Aerosol Formation and Evolution in a Capillary Aerosol Generator.** Francesco Lucci, Edo Frederix, ARKADIUSZ KUCZAJ, *Philip Morris International R&D*
- 9AP.8 Timescales of Secondary Organic Aerosols to Reach Equilibrium at Various Temperatures and Relative Humidities.** YING LI, Manabu Shiraiwa, *University of California, Irvine*
- 9AP.9 Backscattering from Fractal Aggregates.** BLAINE FRY, Christopher Sorensen, Raiya Ebini, *Kansas State University*
- 9AP.10 Shape and Structure of Alkane+CO<sub>2</sub> Multicomponent Particles from FTIR Measurements.** YENSIL PARK, Ruth Signorell, Barbara Wyslouzil, *The Ohio State University*
- 9AP.11 Size, Structure, and Phase of Carbon Dioxide Aerosols Formed by Homogeneous Nucleation in a Supersonic Laval Nozzle.** KAYANE DINGILIAN, Ruth Signorell, Barbara Wyslouzil, *The Ohio State University*
- 9AP.12 A General Description of Light Scattering by Particles of Arbitrary Size, Shape and Refractive Index.** JUSTIN MAUGHAN, Christopher Sorensen, *Kansas State University*
- 9AP.13 Variations of New Particle Formation (NPF) Events during 2016-2018 in the Arctic Area (Ny-Alesund, Norway).** HAEBUM LEE, Young-Jun Yoon, Kihong Park, *Gwangju Institute of Science and Technology*
- 9AP.14 Homogeneous Ice Nucleation From Supercooled Nanodroplets ~230 K.** TONG SUN, Barbara Wyslouzil, *The Ohio State University*
- 9AP.15 Simulation and Evaluation of the Effectiveness of House Sheltering from the Perspective of the Penetration Factor.** WENLU WANG, Nobuyuki Kato, Shigeru Kimoto, Yasuto Matsui, Minoru Yoneda, *Kyoto University*
- 9AP.18 Black Metal Nanoparticles from Abrasion Processes in Our Everyday Lives: Bicycle Chains, Rock Climbing Ropes, and Motor Oil.** HANS MOOSMULLER, Ramesh Giri, Matthew Berg, Christopher Sorensen, *Desert Research Institute*
- 9AP.19 A Hybrid Continuum-Molecular Dynamics Flux Matching Calculation Method for Collision Rate Coefficients.** TOMOYA TAMADATE, Christopher Hogan Jr., Hidenori Higashi, Yoshio Otani, Takafumi Seto, *Kanazawa University*
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9AS SYMPOSIUM: AIR QUALITY SENSORS: LOW-COST != LOW COMPLEXITY I: POSTERS

EXHIBIT HALL A

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- 9AS.1 Laboratory and Field Evaluation of Real-time and Near Real-time PM<sub>2.5</sub> Smoke Monitors.** HANS MOOSMULLER, Ahmed Mehadi, David Campbell, Walter Ham, Donald Schweizer, Leland Tarnay, Julie Hunter, *Desert Research Institute*
- 9AS.2 Low-cost Sensor Packages in Parking Garages to Determine Emission Factors and Assess the Relative Importance of Cold Start Operation on Air Quality.** BINGQI LIU, Katia Cantu Flores, Sakshi Jain, Mrinmoy Chakraborty, Naomi Zimmerman, *University of British Columbia*

- 9AS.3 From Building Blocks to Building Air-Quality Sensors, Air-Quality Estimates and Citizen Scientists.** KERRY KELLY, James Moore, Wei Xing, Matt Dailey, Katrina Le, Tofigh Sayahi, Tom Becnel, Pascal Goffin, Miriah Meyer, Pierre-Emanuel Gaillardon, Deborah Burney-Sigman, Jason Weise, Ross Whitaker, Anthony Butterfield, *University of Utah*
- 9AS.4 Spatiotemporal Mapping of Ultrafine Particles in Buildings with Low-Cost Sensing Networks.** DANIELLE WAGNER, Brandon E. Boor, *Purdue University*
- 9AS.5 Using Mini-PEMS to Monitor Motor Vehicle Exhaust PM.** Diep Vu, Joseph Szente, Michael Loos, MATTI MARICQ, *Ford Motor Co.*
- 9AS.6 Design and Evaluation of a Portable PM Monitor Featuring a Low-Cost Light Scattering Sensor in Line with an Active Filter Sampler.** JESSICA TRYNER, Casey Quinn, Bret Windom, John Volckens, *Colorado State University*
- 9AS.8 Evaluations of Three Commercially Available Indoor PM<sub>2.5</sub> Monitors.** MISTI ZAMORA, Kirsten Koehler, *Johns Hopkins Bloomberg School of Public Health*
- 9AS.9 Towards a Highly-Integrated Low-Cost PM Sensor.** PAUL MAIERHOFER, Georg Röhler, Jaka Pribošek, Gernot Fasching, Anderson Singulani, Harald Etschmaier, Martin Kraft, Alexander Bergmann, *Graz University of Technology*
- 9AS.10 Spark-Plug Sized Automotive Exhaust Aerosol Sensors for Emission Monitoring and On-Board Diagnostics.** VINAY PREMNATH, Imad Abdul-Khalek, *Southwest Research Institute*
- 9AS.11 A Physical-property Based Method to Characterize Low-cost Sensor.** MEILU HE, Nueraili Kuerbanjiang, Suresh Dhaniyala, *Clarkson University*
- 9AS.12 Correlation Measurements of Indoor and Outdoor Particulate Matter Air Quality Using Low-Cost Air Pollution Sensors at a Freeway Site in Southern California.** DANIEL B. CURTIS, Linh K. Luu, Brian M. Chavez, Karen E. McReynolds, *California State University, Fullerton*
- 9AS.13 Calibration of C-RUV Aerosol Acidity Measurement Using Two Inorganic Thermodynamic Models and Its Application to Field Data.** SHIQI SUN, Myoseon Jang, Sanghee Han, Chufan Zhou, Ryan Winslow, *University of Florida*
- 9AS.14 Application and Use of Low-cost Sensors for Air Quality Monitoring.** YI LI, Houxin Cui, Mengxian Wu, Zhanbang Feng, *SailBri Cooper Inc*
- 9AS.15 Real-time Sampling of Total Biogenic Volatile Organic Compounds Using a Compact, Portable Photoionization Detector.** MATTHEW STEWART, Jianhuai Ye, Tianning Zhao, Karena McKinney, Scot T. Martin, *Harvard University*
- 9AS.16 Field Evaluation and Calibration of a Six-Parameter Low-Cost Sensor System in Northwestern and Southeastern US.** Yi Li, HAOFEI YU, Zack Fregin, *SailBri Cooper Inc*
- 9AS.17 Sensitive and Selective Gas Sensing Module for Isoprene.** TIANNING ZHAO, Jianhuai Ye, Matthew Stewart, Scot T. Martin, *Harvard University*
- 9AS.18 Evaluation of PurpleAir Sensors across the United States.** KAROLINE BARKJOHN, Ian VonWald, Daniel Garver, Ryan Brown, Andrea Clements, *U.S. EPA Office of Research and Development*
- 9AS.19 Low Cost Sensor Approach to Intra-Urban UFP Characterization in Austin, TX.** MARK CAMPMIER, Rijul Gosar, Jing Wu, Betty Molinier, Joshua Apte, *University of Texas at Austin*
- 9AS.20 Preliminary Assessments of Sensor Performance and Data Analysis for California Communities under a US EPA STAR Grant Project.** Ashley Collier-Oxandale, VASILEIOS PAPAPOSTOLOU, Brandon Feenstra, Berj Der Boghossian, Andrea Polidori, *South Coast Air Quality Management District*
- 9AS.21 Inferring Aerosol Types and Sources from Low-Cost Air Quality Sensor Measurements: A Case Study in Cambridge, Massachusetts.** AMANDA GAO, David Hagan, Jesse Kroll, *MIT*
- 9AS.22 Low-Cost Sensing to Assess Personal Exposure in a Heavily Burdened Air Basin.** KHANH DO, Haofei Yu, Cesunica E. Ivey, *University of California, Riverside*
- 9AS.23 From Data Retrieval to Performance Evaluation: PurpleAir Sensor Collocation Across Phoenix, AZ.** IAN VONWALD, Karoline Barkjohn, Sue Kimbrough, Ben Davis, Hirna Patel, Ira Domsy, Ron Pope, Andrea Clements, *U.S. EPA Office of Research and Development*

- 9AS.24 Design and Development of a Cylindrical Calibration Chamber for Laboratory Evaluation of Low-cost Particulate Matter Sensors.** TOFIGH SAYAHI, Dylan Kaufman, Tom Becnel, Kamaljeet Kaur, Anthony Butterfield, Scott Collingwood, Yue Zhang, Pierre-Emanuel Gaillardon, Kerry Kelly, *University of Utah*
- 9AS.25 BevoBeacon: A Low-Cost Sensor Platform to Monitor Indoor Environmental Quality.** HAGEN FRITZ, William Waites, Sepehr Bastami, Kerry Kinney, Zoltan Nagy, David Schyner, *University of Texas at Austin*
- 9AS.26 A Data-driven Approach for Detection of Toxic Metallic Particulate Matters Using Spark Emission Spectroscopy and Machine Learning Algorithms.** SEYYED ALI DAVARI, Anthony S. Wexler, *University of California, Davis*
- 9AS.27 Utilizing Hygroscopicity of Aerosols to Develop Corrections for Low Cost Air Quality Sensors.** SAHIL BHANDARI, Brandon Feenstra, Ashley Collier-Oxandale, Wilton Mui, Vasileios Papapostolou, Andrea Polidori, *South Coast Air Quality Management District*
- 9AS.28 Performance Evaluation of Light Scattering PM2.5 Sensors for Deployment in an Urban Sensing Network in Bangalore, India.** JONATHAN GINGRICH, Mark Campmier, Advaita Byeredy, Shayan Charolia, Heather Howton, Brian Mai, Meenakshi Kushwaha, Elbin Savio, Adithi Upadhy, Sreekanth Vakacherla, Julian Marshall, Joshua Apte, *University of Texas at Austin*
- 9AS.29 Long-Term Performance Evaluation of the PurpleAir PA-II Sensor in New Delhi, India.** MARK CAMPMIER, Shahzad Gani, Joshua Apte, *University of Texas at Austin*
- 9AS.30 New Concept for a Low-Cost Particulate Matter Sensor Based on Rolling Filter Tape Light Attenuation.** ELIZABETH CORSON, Jennifer Therkorn, *Johns Hopkins University Applied Physics Laboratory*
- 9AS.31 Using Low-cost Sensor Networks to Identify the Influence of Outdoor Air Quality and Indoor Activities on Indoor Air Quality.** JIAYU LI, Aliaksei Haurlyiuk, Albert Presto, *Carnegie Mellon University*

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9BA BIOAEROSOLS I: POSTERS

EXHIBIT HALL A

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- 9BA.2 Size Distributions and Emissions of Fluorescent Biological Aerosol Particles in an Office.** TIANREN WU, Brandon E. Boor, *Purdue University*
- 9BA.3 Summertime Bioaerosol Loadings above the Arctic Ocean.** ANNE PERRING, James Churnside, Ru-Shan Gao, Richard Marchbanks, Braden Mediavilla, David Fahey, *Colgate University, CIRES CU Boulder*
- 9BA.4 Impacts of Ambient Bioaerosols to an Unoccupied Indoor Bioaerosols during and after the Hazy Events.** FENG ZHOU, Mutong Niu, Tianle Zhu, Fangxia Shen, *Beihang University*
- 9BA.5 Pollen Grains Impacting the Region of Paris: Speciation, Temporal Variations and Geographical Origins.** Roland Sarda-Esteve, Dominique Baisnee, JEAN-EUDES PETIT, Valerie Gros, *CEA*
- 9BA.6 Design and Evaluation of a New Electrostatic-based Low-cost Biological Sampler.** HEMA RAVINDRAN, Kavindra Kumaragama, Shantanu Sur, Suresh Dhaniyala, *Clarkson University*
- 9BA.7 Analysis of Airborne Microbiome Using a Portable Bioaerosol Monitoring and Collection Device.** KAVINDRA KUMARAGAMA, Hema Ravindran, Shane Rogers, Shantanu Sur, Suresh Dhaniyala, *Clarkson University, Potsdam, NY, USA*
- 9BA.8 Further Investigation and Application of Passive and Low-Energy Bioaerosol Samplers.** SYDONIA MANIBUSAN, Gediminas Mainelis, *Rutgers, The State University of New Jersey*
- 9BA.9 A New Portable High-flow Aerosol-to-Hydrosol Sampler for Rapid Microbial Detection.** XINYUE LI, Maosheng Yao, *Peking University*
- 9BA.10 Successful Collection of Viable Vegetative E. coli on Dry Electret Filters.** Andrew Page, Zachary Packingham, Michael Hornback, Stephanie Cantrell, DAVID ALBURTY, *InnovaPrep LLC*
- 9BA.11 Decay of Single and Clusters of Bacillus Anthracis Sterne Spores Exposed to UV-C and Solar Light.** JANA KESAVAN, Daniel Mcgrady, Jerry Cabalo, Aime Goad, *US ARMY CCDC CBC*



- 9BA.12 Characterisation of a Rotating Drum for Bioaerosol Survival Studies.** EMMA KEYSER, Carwyn Davies, Andrew Scott, *Dstl*
- 9BA.13 UV Intensity Calculated in Clusters of Spores Held on Surfaces for Models of the Effects of UV on Viability.** STEVEN HILL, Dan Mackowski, David Doughty, *CCDC Army Research Laboratory*
- 9BA.14 Comparison of Aerosol Samplers for Measurement of *Yersinia pestis* in Aerosols.** GREGORY WILLIAMS, Stewart Wood, Sierra Gardner, Melissa Krause, Shanna Ratnesar-Shumate, *BNBI / DHS NBACC*
- 9BA.15 Evaluation of Boron-Metal Fluoride Reactive Materials for Inactivating Viable Aerosolized Spores Simulating *Bacillus Anthracis*.** SERGEY A. GRINSHPUN, Worrawit Nakpan, Michael Yermakov, Reshmi Indugula, Tiina Reponen, Siva Kumar Valluri, Mirko Schoenitz, Edward Dreizin, *University of Cincinnati*
- 9BA.16 Small Particle Aerosols of *Francisella Tularensis*; Characterization and Optimization to Support Pivotal Animal Efficacy Studies.** Katherine O' Malley, Jennifer Bowling, Eileen Barry, Karsten Hazlett, DOUGLAS REED, *University of Pittsburgh*
- 9BA.17 An Improved Method for Quantification of Ebola virus Titers in Dilute Aerosols.** MICHAEL SCHUIT, Rebecca Dunning, Jill Taylor, Katie Beck, Denise Freeburger, Paul Dabisch, *BNBI / DHS NBACC*
- 9BA.18 Displacement Ventilation to Prevent Pathogen Spread during Meat Processing.** ALEXANDER ZUNIGA, Maria King, *Texas A&M University*
- 9BA.20 Methodology to Estimate Performance of Onepass-type Air Sterilization System Using UVC LED in a Chamber for Inactivating Aerosolized Virus.** SUNGJAE PARK, Dae Hoon Park, Jungho Hwang, *Yonsei University, Korea*
- 9BA.21 Large Enclosure Decontamination of *Coxiella burnetii*.** YOUNG CHOI, Michelle Sunderman, Heather Davis, Cassandra O'Connor, William Richter, Mani Muthalagi, Kevin Hommemma, *Battelle*
- 9BA.22 Comparison of Disease Progression in A/J and C57BI/6 Mice Exposed to Aerosolized *Coxiella burnetii*.** CHRISTOPHER JENSEN, Jeanean Ghering, Aysegul Nalca, Sara Ruiz, *USAMRIID*
- 9BA.23 Tracking the Movement of Antibiotic Resistant Genes in Dairy Farms using Computational Fluid Dynamics.** HYOUNGMOOK PAK, Maria King, *Texas A&M University*
- 9BA.24 Comparison of Large Particle vs Small Particle Aerosolized Rabbitpox Virus Exposure in New Zealand White Rabbits (*Oryctolagus cuniculus*).** AYSEGUL NALCA, *USAMRIID*
- 9BA.25 Comparison of the Performance of Pneumatic Atomizers for Inhalation Studies with Ebola Virus.** KATIE BECK, Rebecca Dunning, Michael Schuit, Amy Reese, Jill Taylor, John Yeager, Paul Dabisch, *BNBI / DHS NBACC*
- 9BA.26 Continuous and Efficient Virus Sampling and Enrichment System.** HYEONG RAE KIM, Sanggwon An, Jungho Hwang, *Yonsei university*
- 9BA.27 Characteristics of Antibiotic-resistance Bacterial Aerosols and the Removal Efficiency of Biofilter during Composting Process.** YUNHAO ZHENG, Hongmin Dong, Yu Zhang, *Chinese Academy of Agricultural Sciences*
- 9BA.28 Efficiency Examination of a Pilot Scale Packed-bed Non-thermal Plasma (NTP) Reactor in Inactivating Airborne Viruses Emitted from a Pig Barn on a Michigan Farm.** TIAN XIA, Zijie Lin, Eric Lee, Kevin Melotti, Mitchell Rohde, Herek Clack, *University of Michigan*
- 9BA.29 Design, Fabrication, and Evaluation of Stationary Electrostatic Bioaerosol Sampler (SEBS) with High Concentration Rate.** TAEWON HAN, Nirmala Thomas, Sydonia Manibusan, Gediminas Mainelis, *Rutgers, The State University of New Jersey*
- 9BA.30 Investigation of Hygroscopic Properties of Giant Cloud-Condensation Nuclei with an Aerosol Optical Trap and Humidified Tandem Differential Mobility Analyzer.** BENJAMIN E. SWANSON, Rachel Bramblett, Amanda Frossard, *University of Georgia*
- 9BA.31 Comparison of DNATrax and *Bacillus anthracis* Surrogate Resuspension from Subway Surfaces.** JOHN ARCHER, Adam Hook, Jerome Gilberry, Denise Aslett, Ahmed Abdel-Hady, M. Worth Calfee, Robert Yaga, Donald Bansleben, *US EPA*
- 9BA.32 A Microfluidic Inertial Aerosol Sampler for Continuous, Efficient Collection and near Real-Time Detection of Bioaerosols.** LEAH CAROL, Andrea Timm, Ronald Jacak, Christopher Stiles, Brian Damit, *Johns Hopkins University Applied Physics Laboratory*

- 9BA.33 Development of a Bioaerosol Test Platform for the Evaluation of Biothreat Sensor Performance in Identifying Live BSL-3 Threat Agents.** JILL TAYLOR, Benjamin Alvarez, Felix Sage, Thomas Pilholski, Elizabeth Corson, Leah Carol, Brian Damit, *Johns Hopkins University Applied Physics Laboratory*
- 9BA.34 Chemical Modification of Ragweed Pollen Allergens via Ambient Air.** RACHEL L. DAVEY, Courtney Seffense, Erick Mattson, J. Alex Huffman, *University of Denver*
- 9BA.35 Culturability, Metabolic Activity and Composition of Ambient Bacterial Aerosols in a Surrogate Lung Fluid.** FANGXIA SHEN, Mutong Niu, Feng Zhou, Yan Wu, Tianle Zhu, *Beihang University*
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9CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE I: POSTERS

EXHIBIT HALL A

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- 9CA.1 Experimental Determination of the Relationship between Organic Aerosol Viscosity and Deposition Mode Ice Nucleation at Upper Free Tropospheric Conditions.** SABIN KASPAROGLU, Russell Perkins, Paul DeMott, Sonia Kreidenweis, Markus Petters, *North Carolina State University*
- 9CA.3 Scaling Laws for Light Absorption Enhancement Due to Nonrefractory Coating of Atmospheric Black Carbon Aerosol.** RAJAN K. CHAKRABARTY, William Heinson, *Washington University in St. Louis*
- 9CA.4 Interpreting Temporal Changes in OMC/OC Ratios - An Alternative to OC-LAC Thermal Evolution Measurements.** William Malm, BRET SCHICHEL, Jenny Hand, Anthony Prenni, *Colorado State University*
- 9CA.5 Major Influence of Secondary Organic Aerosols on Black Carbon Absorption Enhancement in the Region of Paris, France.** Yunjiang Zhang, Olivier Favez, Francesco Canonaco, Grisa Mocnik, Dantong Liu, Tanguy Amodeo, Francois Truong, Andre S.H. Prévôt, Jean Sciare, Valerie Gros, ALEXANDRE ALBINET, *INERIS, France*
- 9CA.6 Optical Absorption Properties of Brown Carbon Aerosols in the Pearl River Delta Region of China.** JUN ZHENG, Zhujie Li, Yan Ma, Haobo Tan, *Nanjing University of Information Science & Technology*
- 9CA.7 Detection of Tar Brown Carbon with the Single Particle Soot Photometer (SP2).** JOEL CORBIN, Martin Gysel, *National Research Council Canada*
- 9CA.8 Chemical and Optical Properties of BC-containing Particles in Urban and Remote Sites of China.** XINLEI GE, Junfeng Wang, Yele Sun, Dantong Liu, *Nanjing University of Information Science & Technology*
- 9CA.9 Multi-year Observations of Black Carbon and Brown Carbon in Bogota, Colombia: Relation to Biomass Burning Tracers and Number of Fires in Northern South America.** JUAN MANUEL RINCÓN, Amy P. Sullivan, Juan Felipe Mendez, Ricardo Morales Betancourt, *Universidad de los Andes*
- 9CA.11 Estimating Volatility Distributions of Primary Organic Aerosols Using Artifact-Corrected Quartz Filters.** Alexandra Ng, Hanyang Li, ANDREW MAY, *The Ohio State University*
- 9CA.12 The Influence of Calibration Standards on the Measurement of the Mass Absorption Coefficient of Black Carbon.** ELIZABETH WIGGINS, Richard Moore, Luke Ziemba, Gregory Schuster, *NASA*
- 9CA.13 Portable Real-time Black Carbon Monitoring Using the MA300: Performance Characterization in Laboratory and Real-world Environments.** MRINMOY CHAKRABORTY, Jeff Meiklejohn, Keyhan Babae, Steven Rogak, Naomi Zimmerman, *University of British Columbia*
- 9CA.15 Numerical Evidence of Blocking Effect of Brown Coatings on the Light Absorption of Internally Mixed Black Carbon.** Jie Luo, Yongming Zhang, QIXING ZHANG, *University of Science and Technology of China*
- 9CA.16 Characteristics of Organic Compounds in PM<sub>2.5</sub> Aerosols in Seoul, Korea.** SOYOUNG JUNG, Hyewon Kim, Mi Rae Lee, Min Hye Kim, Youngkwon Kim, Jieun Park, Seung-Muk Yi, *Seoul National University, Seoul, Korea*
- 9CA.17 Comparing the RDG-FA and T-matrix Methods for Soot Given Information about Polydispersity and Effective Density.** Keyhan Babae, Timothy Sipkens, STEVEN ROGAK, *University of British Columbia*
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9CM CONTROL AND MITIGATION TECHNOLOGY II: POSTERS

EXHIBIT HALL A

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- 9CM.1 Characterizing Amine Aerosol Emissions from Water-Lean Solvent CO<sub>2</sub> Capture Process.** Paul Mobley, Jak Tanthana, Ryan Chartier, David Barbee, Roger Pope, Shaojun Zhou, JONATHAN THORNBURG, *RTI International*
- 9CM.2 Effects of Defects on Adsorption Characteristics of Magnesium Oxide Nanoparticles Synthesized through Aerosol Processes to Gas Air Pollutants.** KYUNGIL CHO, Changhyuk Kim, *Pusan National University*
- 9CM.3 Simulation of Electrohydrodynamic Flow and Particle Motion in Electrostatic Precipitators Under Turbulent Conditions.** AUSTIN ANDREWS, Christopher Hogan Jr., *University of Minnesota*
- 9CM.5 A Numerical Study for Pressure Drop Across a Two-Stage HEPA Filter.** Wonyoung Jeon, Byong Hyeok Lee, Jong Cheol Kim, Sanghyeon Kang, Hyunjun Yun, YOUNGJIN SEO, *Kumoh National Institute of Technology*
- 9CM.6 Application of the Mobile Aerosol Lung Deposition Apparatus (MALDA) on Estimation of Ultrafine Welding Fume Respiratory Deposition.** Yi Chen, WEI-CHUNG SU, Macrio Bezerra, Jun Wang, *University of Texas Health Science Center at Houston*
- 9CM.7 In Situ Time- and Size-Resolved Particle Removal Efficiency of a HVAC Filter Bank in an Office Building.** JINGLIN JIANG, Tianren Wu, Brandon E. Boor, *Purdue University*
- 9CM.8 3-D Simulation of Submicron Particle Filtration on an Elliptical Fibrous Surface.** MING DONG, Jinyang Li, Sufen Li, Yan Shang, *Dalian University of Technology*
- 9CM.10 Charge Characterization of Nanoparticles Exiting Non-thermal Atmospheric Pressure Plasmas.** GIRISH SHARMA, Nabel Abuyazid, Sukrant Dhawan, R. Mohan Sankaran, Pratim Biswas, *Washington University in St Louis*
- 9CM.11 Modeling the Impact of Ventilation Control Strategies on Airborne Infectious Disease Transmission in Schools.** SANGEETHA KUMAR, Atila Novoselac, Richard Corsi, *The University of Texas at Austin*
- 9CM.12 Dioxin Emission Reduction of Medical Waste Incinerators Using Low Temperature Plasma Integration Technology.** ZHENYU DU, Ting Zhang, Aimin Liu, Zhiguang Zhou, Yixiang Zhang, Rui Zhou, Yue Yu, *CNEAC, China*

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9CO COMBUSTION I: POSTERS

EXHIBIT HALL A

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- 9CO.1 Mode Specified Semi-volatile Chemical Composition in PM Emissions from a Commercial Gas Turbine Aircraft Engine.** ZHENHONG YU, Michael Timko, Andreas Beyersdorf, Luke Ziemba, Edward Winstead, Bruce Anderson, Scott Herndon, Richard Miake-Lye, *Aerodyne Research, Inc.*
- 9CO.2 Predicting the Fuel Consumption and Tailpipe Emissions from Light-Duty Passenger Vehicles using Artificial Neural Networks.** Shiva Tarun, Asher Zachary, Johnston Brian, Bradley Thomas, SHANTANU JATHAR, *Colorado State University*
- 9CO.3 Secondary Organic Aerosol (SOA) Formation from a Light-Duty Gasoline Direct Injection (GDI) Vehicle at Different Drive Conditions.** WEIHAN PENG, Niina Kuittinen, Cavan McCaffery, Stephen Zimmerman, Patrick Roth, Roya Bahreini, David R. Cocker III, Georgios Karavalakis, *University of California, Riverside*
- 9CO.4 Aircraft Exhaust Nanoparticles: Great Contribution of Jet Engine Lubrication Oil.** AKIHIRO FUSHIMI, Katsumi Saitoh, Yuji Fujitani, Nobuyuki Takegawa, *National Institute for Environmental Studies*
- 9CO.5 Diesel Exhaust Particle Number Measurement and Measurement Variability Using Off-Highway Test Cycles.** KIRBY J BAUMGARD, Nicholas J Barsic, *John Deere Power Systems*
- 9CO.6 Characterization of Smoke for Spacecraft Fire Safety.** XIAOLIANG WANG, Hao Zhou, W. Patrick Arnott, Marit Meyer, Samuel Taylor, Hatef Firouzkouhi, Hans Moosmuller, Judith Chow, John Watson, *Desert Research Institute*
- 9CO.7 Black Carbon and Particle Size Distributions Emitted from a Modern Aircraft Turbofan Engine Operated on Sustainable Alternative Jet Fuels.** JOEL CORBIN, Prem Lobo, Gregory Smallwood, Tobias Schripp, Ewan Crosbie, Michael Shook, Claire Robinson, Edward Winstead, Bruce Anderson, Richard Miake-Lye, Zhenhong Yu, Andrew Freedman, Philip Whitefield, *National Research Council Canada*
- 9CO.8 Soot Formation Models for Non-Premixed Flames with Variable Stoichiometric Mixture Fraction and Strain.** PHILLIP JOHNSON, Rajan K. Chakrabarty, Benjamin M. Kumfer, *Washington University in St. Louis*

- 9CO.9 Influence of Temperature and Dilution on Final Soot Nanostructure.** JUSTIN DAVIS, Igor Novosselov, *University of Washington*
- 9CO.10 A Multiscale Study of Soot Morphology and Evolution in Combustion Devices.** KHALED MOSHARRAF MUKUT, Eirini Goudeli, Somesh Roy, *Marquette University*
- 9CO.11 Ash Formation in High Pressure Oxy-Combustion Systems.** DISHANT KHATRI, Zhiwei Yang, Richard Axelbaum, *Washington University in St. Louis*
- 9CO.12 Emission Factors and Physicochemical Properties of Soot Produced in Low-Temperature Combustion.** OMAR EL HAJJ, Khairallah Atwi, Zezhen Cheng, Alanna L. Koritzke, Matthew G. Christianson, Brandon Rotavera, Rawad Saleh, *University of Georgia*

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9IA INDOOR AEROSOLS III

EXHIBIT HALL A

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- 9IA.1 Fungal Communities in Puerto Rican Homes after Hurricane Maria.** JUAN PEDRO MAESTRE, Filipa Godoy Vitorino, Benjamin Bolaños-Rosero, Felix Rivera-Mariani, Humberto Cavallin, Kerry Kinney, *University of Texas at Austin*
- 9IA.2 Aerosol Movement and Deposition into Hidden Interior Spaces Within a Full-Scale Test House.** MENGJIA TANG, Ningling Zhu, Kerry Kinney, Atila Novoselac, *University of Texas at Austin*
- 9IA.3 The Impact of Cooking Pan Material on Ultrafine Particle Emission Rates.** MEHDI AMOUEI TORKMAHALLEH, Hamed Sharifi, Maryam Dareini, Giorgio Buonanno, *Chemical and Aerosol Research Team, Nazarbayev University*
- 9IA.4 Occupancy Sensing with Chair-Embedded Thermocouples: Applications for Evaluating Human-Associated Bioaerosol and VOC Emission Factors.** DANIELLE WAGNER, Aayush Mathur, Brandon E. Boor, *Purdue University*
- 9IA.5 Insights on Particulate Matter Formation and Evolution during a 3D Printer Operation.** SAMEER PATEL, Sumit Sankhyan, Marina Vance, *University of Colorado Boulder*
- 9IA.6 Exposure to Endotoxin in a Cohort of Pregnant Women and Their Children.** Javier Ustariz, HECTOR JORQUERA, Arturo Borzutzky, *Pontificia Universidad Catolica de Chile*
- 9IA.7 Computational Fluid Dynamics Modeling of Particles on the International Space Station.** KAITLYN KOEHLER, Andrea Ferro, Goodarz Ahmadi, *Clarkson University*
- 9IA.8 Characterisation of SVOCs Derived from Indoor Cooking and Cleaning Activities.** Elizabeth Lin, Marina Vance, Delphine K. Farmer, KRYSTAL GODRI POLLITT, *Yale University*
- 9IA.9 Laboratory Determination of the Functional Range of Eight Low-Cost Particle Sensors and Consumer Device.** YANGYANG ZOU, Matthew Young, Melissa Ryan, Andrew May, Jordan Clark, *The Ohio State University*
- 9IA.10 Use of Piezobalance to Determine Volatility of E-Cigarette Aerosol.** LANCE WALLACE, Wayne Ott, Kai-Chung Cheng, Tongke Zhao, Lynn M. Hildemann, *US EPA (retired)*
- 9IA.11 Investigating Aerosol Emissions from Cooking Oils.** SUMIT SANKHYAN, Sameer Patel, Marina Vance, *University of Colorado Boulder*
- 9IA.12 Developing an Air Quality Index for Space Vehicles and Habitats.** MEYTAR SOREK-HAMER, Marit Meyer, *NASA Ames Research Center, Moffett Field, CA, USA / USRA*
- 9IA.13 Indoor Environmental Quality and Association with Human Perception at Schools and Homes of Urban and Rural Areas.** HYEON-JU OH, Jong-Ryeul Sohn, *Korea University*
- 9IA.14 Ozone Reactions with Squalene: Particle Seeding and Formation.** BREANN COFFARO, Clifford Weisel, *Rutgers, The State University of New Jersey*
- 9IA.15 Assessment and Mitigation of Exhaled Electronic Cigarette Aerosols in a Multi-zone Indoor Environment.** Li Zhang, Yan Lin, YIFANG ZHU, *University of California Los Angeles*
- 9IA.16 A Dynamic Method to Measure Partition Coefficient and Mass Accommodation Coefficient for Gas/Particle Interaction of Phthalates in Indoor Environments.** Jianping Cao, CLARA EICHLER, Yaoxing Wu, John Little, *Virginia Tech*

**9IA.17 Particle Size: A Missing Factor in Risk Exposure to Toxic Metals in Indoor Aerosols of South-East Asia.** HIMANSHI ROHRA, Ajay Taneja, DR. B.R.A. University, Agra, India

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9IS SYMPOSIUM: THE AIR WE BREATHE: INDOOR AEROSOL SOURCES AND CHEMISTRY I: POSTERS

EXHIBIT HALL A

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- 9IS.1 Dynamics of Volatile Organic Compounds in a Living Laboratory Office and HVAC System.** TIANREN WU, Danielle Wagner, Jinglin Jiang, Philip Stevens, Heinz Huber, Antonios Tasoglou, Brandon E. Boor, *Purdue University*
- 9IS.2 Identification and Quantification of Personal Care Product Emissions Indoors during Exercise by GC-Vocus PTR-ToF.** Zachary Finewax, Megan Claflin, Demetrios Pagonis, Andrew Jensen, Olivia Jenks, Brian Lerner, Shelly Miller, Jose-Luis Jimenez, PAUL ZIEMANN, Joost de Gouw, *University of Colorado*
- 9IS.3 Seasonal and Regional Variations of Indoor Organic Aerosol Water Content, Phase State, and Temperature-Based Partitioning.** BRYAN CUMMINGS, Manabu Shiraiwa, Peter DeCarlo, Michael Waring, *Drexel University*
- 9IS.4 Chemical Properties of Indoor Organic Aerosols.** Hannah Przelomski, Erin Katz, Peter DeCarlo, RACHEL O'BRIEN, *College of William and Mary*
- 9IS.5 Phthalate Hydrolysis and Indoor Air Chemistry.** DO YOUNG MAENG, V. Faye McNeill, *Columbia University*
- 9IS.6 Using Aerosol Principles to Advance Exposure Science: The Effect of Humidity on the Uptake of Water-Soluble Gases on Authentic Indoor Surfaces.** MARC WEBB, Liyong Cui, Joanna Atkin, Glenn Morrison, Jason Surratt, Barbara Turpin, *UNC-Chapel Hill*
- 9IS.7 Modeling Water Uptake by Dust in Residential Environments.** David Kormos, Karen C. Dannemiller, ANDREW MAY, *The Ohio State University*
- 9IS.8 Biological Particle Resuspension from Simulated Children's Walking.** Lu Zhang, Xinyue Li, Ting Zhang, MAOSHENG YAO, *Peking University*
- 9IS.9 Indoor and Outdoor Levels of Traffic-Related Air Pollution and Effectiveness of Remediation Measures in a Near-Freeway School.** AURELIE LAGUERRE, Pradeep Ramasubramanian, Matthew Survilo, Megan Duenas, Naveen Weerasekera, Linda George, Elliott Gall, *Portland State University*
- 9IS.10 Ultrafine Particle Emission Interactions with Multiple Fused-Deposition Modeling (FDM) 3D Printing in Chamber Environments.** Nahin Ferdousi, JOSEPH WOO, *Lafayette College*
- 9IS.11 Surface Extractor for Deposited Indoor Aerosol.** HANNAH PRZELOMSKI, Rachel O'Brien, *College of William and Mary*
- 9IS.12 Aqueous Phase Chemistry on Indoor Surfaces.** MADELINE COOKE, Andrew Ault, *University of Michigan*
- 9IS.13 Dynamics of Ozone Reactivity for Different Indoor Surfaces Driven by Diurnal Ozone Exposure.** MICHAEL WADE, Atila Novoselac, Richard Corsi, *The University of Texas at Austin*
- 9IS.14 Are Indoor Surfaces and Aerosols Dropping Acid or Dropping the Base? Insights into Water Films and pH for Model and Authentic Indoor Samples.** ANDREW AULT, Madeline Cooke, *University of Michigan*
- 9IS.15 Spatiotemporal Trends in Concentrations of Ozone and Ozone-Skin Oil Oxidation Products in an Occupied Office and HVAC System.** JINGLIN JIANG, Tianren Wu, Danielle Wagner, Philip Stevens, Heinz Huber, Antonios Tasoglou, Brandon E. Boor, *Purdue University*
- 9IS.16 Real Time Observations of Indoor Third Hand Smoke Emissions Transported into Non-smoking Environments via Humans.** ROGER SHEU, Jenna Ditto, Christof Stöner, Thomas Klüpfel, Jonathan Williams, Drew Gentner, *Yale University*
- 9IS.17 Characteristics of Secondhand Marijuana Smoke: PM2.5 Calibration Factors and Emission Strengths.** TONGKE ZHAO, Kai-Chung Cheng, Wayne Ott, Lance Wallace, Lynn M. Hildemann, *Stanford University*
- 9IS.18 Heterogeneous Ozonolysis of THC and Nicotine.** AARON WYLIE, Christopher Lim, Jonathan Abbatt, *University of Toronto, Canada*

- 9IS.19 Characterizing Emissions from Heating Simulated Cannabis Extracts.** XIAOCHEN TANG, Lucia Cancelada, Vi Rapp, Marion Russell, Marta Litter, Lara Gundel, Hugo Destailats, *Lawrence Berkeley National Laboratory*
- 9IS.20 Volatilization and Partitioning of Residual Electronic Cigarette Vapor to Aerosols.** HENRY COLBY, Erin Katz, Anita Avery, Peter DeCarlo, *Drexel University*
- 9IS.21 Can You Breathe Me Now? Effect of Wood Stove Exchange Programs on IAQ.** MATTHEW SURVILO, Aurelie Laguerre, Everett Stille, Elliott Gall, *Portland State University*
- 9IS.22 Observations of Semi-volatile Siloxane Partitioning to Airborne Particles during Oven Use at Homechem.** ERIN KATZ, David Lunderberg, William Nazaroff, Allen Goldstein, Peter DeCarlo, *Drexel University*
- 9IS.23 An Overview of Aerosol Sources and Chemistry from the Homechem Field Campaign.** ERIN KATZ, Peter DeCarlo, Atila Novoselac, Jose-Luis Jimenez, Wyatt Brown, Rachel O'Brien, Delphine K. Farmer, Marina Vance, *Drexel University*
- 9IS.24 Indoor Particle Transformation Processes Due to Candle Burning.** Su-Gwang Jeong, Lance Wallace, DONGHYUN RIM, *Pennsylvania State University*
- 9IS.25 Developing a Volatility Basis Set for Indoor Cooking Aerosol Stirfry Emissions During the HOMEChem Study.** MATSON A. POTHIER, Erin K. Boedicker, Jose-Luis Jimenez, Jeffrey R. Pierce, Delphine K. Farmer, *Colorado State University*

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#### 9NM NANOPARTICLES AND MATERIALS SYNTHESIS II

EXHIBIT HALL A

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- 9NM.1 Electrically Conducting, Near Bulk Density, Micrometer Thick Metal Coatings through Room Temperature Supersonic Aerosol Deposition.** YENSIL PARK, Souvik Ghosh, Christopher Hogan Jr., *University of Minnesota*
- 9NM.2 Steady Uniform Production of Ultrasmall Particles via Tandem Electrostatic System for Precise Antimicrobial Activities.** DAE HOON PARK, Jungho Hwang, Jeong Hoon Byeon, *Yonsei University, Korea*
- 9NM.3 Design of Dispersal System for Dust Detonation.** SHUSIL SIGDEL, Justin Wright, Stephen Corkill, Aravind Suresh, Christopher Sorensen, *Kansas State University*
- 9NM.4 Characteristics of Graphene Produced via Detonation Synthesis.** JUSTIN WRIGHT, Shusil Sigdel, Stephen Corkill, Arjun Nepal, Stefan Bossmann, Christopher Sorensen, *Kansas State University*

**Thursday 1:45 PM - 3:00 PM**

**Session 10: Platform**

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#### 10AC AEROSOL CHEMISTRY VIII: NOVEL TECHNIQUES TO STUDY AEROSOL CHEMISTRY

OREGON BALLROOM

**Ryan Davis and Jenna Ditto, chairs**

- 10AC.1 Investigation of Secondary Organic Aerosol Formation by a Filter-Based Thermal Desorption System (F-TDIS).** YUANLONG HUANG, Christopher Kenseth, John Seinfeld, *California Institute of Technology*  
1:45
- 10AC.2 Probing Reaction Rates in Single Aerosol Droplets Using a Branched Quadrupole Trap.** GRAZIA ROVELLI, Michael Jacobs, Kevin Wilson, *Lawrence Berkeley National Laboratory*  
2:00
- 10AC.3 Influence of Evaporation Rate and Suspended Solid Concentration on Dry Particle Formation from Evaporating Aerosol Microdroplets.** JUSTICE ARCHER, Florence Gregson, Daniel Hardy, Jim Walker, Rachael E.H. Miles, Jonathan P. Reid, *University of Bristol*  
2:15
- 10AC.4 In Situ pH Measurements of Individual Microdroplets Using Aerosol Optical Tweezers to Study the Interplay between Acidity, Phase Separation, Morphology, and Reactivity.** Hallie Boyer, Kyle Gorkowski, RYAN SULLIVAN, *Carnegie Mellon University*  
2:30

**10AC.5 Electro spray Surface-enhanced Raman Spectroscopy (ES-SERS) for Studying Organic Coatings of Atmospheric Aerosol Particles.** Masao Gen, Ryota Kuniyama, Atsushi Matsuki, CHAK K. CHAN, *City University of Hong Kong*

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10AS SYMPOSIUM: AIR QUALITY SENSORS: LOW-COST != LOW COMPLEXITY II: GLOBAL AQ SENSING  
ROOM B 115-116

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**Kirsten Koehler and Naomi Zimmerman, chairs**

**10AS.1 Enabling Continuous Air Quality Measurements in Cap Haitien, Haiti – from Household Combustion to Open Burning to Political Protests.** AUDREY DANG, Eben Cross, Jay R. Turner, Brent Williams, *Washington University in St. Louis*

**10AS.2 Development of a Low-cost Air Pollution Monitoring Network in Kinshasa, Democratic Republic of the Congo.** Daniel Westervelt, Anant Majumdar, R. SUBRAMANIAN, Carl Malings, Dovas Saulys, *Columbia University*

**10AS.3 Low Cost, High Quality Sensors for Measuring Particle Mass and Size Distribution in a Megacity Delhi.** JAI PRAKASH, Shruti Choudhry, Ramesh Raliya, Tandeep Chadha, Jiaxi Fang, Pratim Biswas, *Washington University in St. Louis*

**10AS.4 Integrating Multi-source (Satellite Retrieval, Model Simulation, Ground Based Monitoring) and Low-cost Sensor Particulate Mass Data to Improve Spatio-temporal Air Quality Mapping.** CARL MALINGS, Matthias Beekmann, Daniel Westervelt, Albert A. Presto, R. Subramanian, *LISA*

**10AS.5 Gas and Particle Observations from Sensor Packages Deployed in Rural Malawi and a Near-Road Monitoring Location in North Carolina.** ASHLEY BITTNER, Eben Cross, Carl Malings, Eric Lipsky, Andrew Grieshop, *North Carolina State University*

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10BA BIOAEROSOLS II  
ROOM B 113-114

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**Shanna Ratnesar-Shumate and Anne Perring, chairs**

**10BA.1 Ultraviolet Irradiation and Gaseous Iodine Treatments against Viable Bacterial and Fungal Spores Deposited on Air Filters.** SERGEY A. GRINSHPUN, Worravit Nakpan, Michael Yermakov, Reshmi Indugula, Tiina Reponen, *University of Cincinnati*

**10BA.2 Controlled Spore Aerosol Experiments: Radiation Exposure Dependence.** Cathy S. Scotto, Matthew B. Hart, Jozsef Czege, JAY D. EVERSOLE, Steven Hill, Dan Mackowski, Jana Kesavan, Vipin Rastogi, *Naval Research Laboratory*

**10BA.3 Explaining the U-shaped Pattern in the Viability of Airborne Viruses vs. Relative Humidity.** KAISEN LIN, Linsey Marr, *Virginia Tech*

**10BA.4 Quantifying the Relationship between Physicochemical Properties and Biological Decay in Populations of Bioaerosol Droplets.** MARA OTERO-FERNANDEZ, Allen E. Haddrell, Richard Thomas, Henry Oswin, Jonathan P. Reid, *University of Bristol*

**10BA.5 The Influence of Simulated Sunlight and Relative Humidity on the Inactivation of Influenza Virus in Aerosols.** MICHAEL SCHUIT, Sierra Gardner, Paul Dabisch, *BNBI / DHS NBACC*

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10CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE II  
ROOM B 117-119

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**Coty Jen and Benjamin Murphy, chairs**

**10CA.1 Physical Properties of Internally Mixed Soot Particles during the Carbonaceous Aerosols and Radiative Effects Study in California.** Noopur Sharma, Swarup China, Janarjan Bhandari, Kyle Gorkowski, Manvendra Dubey, Rahul Zaveri, CLAUDIO MAZZOLENI, *Michigan Technological University*

- 10CA.2 Changes of Black Carbon Sources in Beijing with Three-Year Continuous Measurements.** YUE LIU, Yazhen Wu, Caiqing Yan, Tony Hansen, Mei Zheng, *Peking University*  
2:00
- 10CA.3 Influences of Primary Emission and Secondary Coating Formation on the Particle Diversity and Mixing State of Black Carbon Particles.** ALEX LEE, Laura-Helena Rivellini, Chia-Li Chen, Jun Liu, Derek Price, Raghu Betha, Lynn Russell, Xiaolu Zhang, Christopher Cappa, *National University of Singapore*  
2:15
- 10CA.4 Long-Term Trends in Chemical Composition of PM<sub>2.5</sub> in the South Coast Air Basin: A Focus on Time-integrated and Continuous Carbon Measurements.** FARAZ ENAYATI AHANGAR, Sina Hasheminassab, Payam Pakbin, Andrea Polidori, Aaron Katzenstein, Jason Low, *South Coast Air Quality Management District*  
2:30
- 10CA.5 Chemical Composition of PM<sub>2.5</sub> in Zion, IL during the 2017 Lake Michigan Ozone Study (LMOS).** DAGEN HUGHES, Alissia Milani, Megan Christiansen, Dylan Millet, Timothy Bertram, Charles Stanier, Elizabeth Stone, *University of Iowa*  
2:45
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## 10CO COMBUSTION II

ROOM A 106

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### Steve Rogak and Prem Lobo, chairs

- 10CO.1 Effect of Sodium Chloride on the Evolution of Size and Mixing State of Soot Particles from a Sooting Laminar Diffusion Flame.** MOHSEN KAZEMIMANESH, Chen Kuang, Larry W. Kostiuik, Jason S. Olfert, *University of Alberta*  
1:45
- 10CO.2 On Generating Sub-100-nm Soot Particles with the Argonaut Miniature Inverted Soot Generator.** JOEL CORBIN, Senaratne Amrith, Jason S. Olfert, Gregory Smallwood, Stephanie Gagne, Fengshan Liu, Prem Lobo, *National Research Council Canada*  
2:00
- 10CO.3 Measuring Nanometric Carbonaceous Materials from a Sooting Ethylene Premixed Flame with the Particle Size Magnifier.** FRANCESCO CARBONE, Kevin Gleason, Juha Kangasluoma, Michel Attoui, Joonas Vanhanen, Alessandro Gomez, *Yale University*  
2:15
- 10CO.4 Investigating the Distribution of Mass and Mobility Diameter of Lab-Scale, Flare-Generated Soot Using Tandem CPMA-SMPS Measurements.** TIMOTHY SIPKENS, Mohsen Kazemimanes, Melina Jefferson, Matthew Johnson, Jason S. Olfert, Steven Rogak, *University of British Columbia*  
2:30
- 10CO.5 Role Played by Charge in the Early Stages of Particle Formation and Growth of Titania and Soot Nanoparticles in High Temperature Flame Environment.** GIRISH SHARMA, Mengda Wang, Huang Zhang, Xiaoqing You, Pratim Biswas, *Washington University in St Louis*  
2:45
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## 10IS SYMPOSIUM: THE AIR WE BREATHE: INDOOR AEROSOL SOURCES AND CHEMISTRY II

ROOM B 110-112

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### Rachel O'Brien and Sameer Patel, chairs

- 10IS.1 Indoor New Particle Formation: An "Outsider's" Perspective.** JAMES SMITH, Michael J. Lawler, Danielle C. Draper, Sabrina Chee, Hayley Glicker, Xiaoxiao Li, *University of California, Irvine*  
1:45
- 10IS.2 Indoor Measurements of Nanocluster Aerosols and New Particle Formation.** TIANREN WU, Philip Stevens, Heinz Huber, Antonios Tasoglou, Brandon E. Boor, *Purdue University*  
2:00
- 10IS.3 Environmental Microbes and Ambient Moisture: How Microbes Contribute to the Chemistry of Our Homes.** RACHEL I. ADAMS, Sarah Haines, Katarzyna Marciniak, Karen C. Dannemiller, Allen Goldstein, Pawel Misztal, *University of California, Berkeley*  
2:15
- 10IS.4 Aerosol Particles from Human Speech as a Possible Vector for Airborne Infectious Disease Transmission.** SIMA ASADI, Anthony S. Wexler, Christopher Cappa, Santiago Barreda, Nicole M. Bouvier, William D. Ristenpart, *University of California, Davis*  
2:30



**10IS.5 Resuspension of Particles Deposited from Consumer Nanosprays: The Effect of Surface Type, Resuspending Force, and Sampling Height.** RUIKANG HE, Jie Zhang, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

**Thursday 3:00 PM - 3:30 PM  
Coffee Break**

**Thursday 3:30 PM - 5:00 PM  
Session 11: Platform**

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11AC AEROSOL CHEMISTRY IX: ORGANIC NITROGEN  
OREGON BALLROOM

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**Tran Nguyen and Sergey Nizkorodov, chairs**

**11AC.1 Overview of the ACMCC Particulate Organonitrates (pON) Experiment.** ALEXANDRE ALBINET, Jean-Eudes Petit, 3:30 Andrew Lambe, Athina-Cerise Kalogridis, Liine Heikkinen, Frans Graeffe, Manuela Cirtog, Anaïs Féron, James Allan, Zainab Bibi, Tanguy Amodeo, Nicolas Karoski, Robin Aujay-Plouzeau, Laurent Meunier, Valerie Gros, Nicolas Bonnaire, Roland Sarda-Esteve, Mikael Ehn, Tuija Jokinen, Minna Aurela, Cristina Marin, Evelyn Freney, Leah Williams, Olivier Favez, et al., *INERIS, France*

**11AC.2 Volatility of Atmospheric Organic Nitrate Formed from Hydroxyl and Nitrate Radical Oxidation of  $\alpha$ -Pinene and  $\beta$ -Pinene.** MASAYUKI TAKEUCHI, Justin Min, Rodney J. Weber, Nga Lee Ng, *Georgia Institute of Technology*

**11AC.3 Organic Nitrate and Secondary Organic Aerosol Formation from the Reaction of Alpha-Pinene and Nitrate Radical under Simulated Ambient Conditions.** GUY BURKE, Yichen Li, Tran Nguyen, *UC Davis*

**11AC.4 Experimental Investigation of the Gas- and Particle-Phase Products and Mechanism of Reaction of  $\Delta$ -3-Carene with NO<sub>3</sub> Radicals.** MARLA DEVAULT, Paul Ziemann, *University of Colorado*

**11AC.5 A Laboratory and Modeling Investigation on the Effects of Amine Uptake on SOA Composition and Its Potential Impacts on Air Quality.** JULIA MONTOYA-AGUILERA, Natalie Smith, Shupeng Zhu, Donald Dabdub, Sergey Nizkorodov, *University of California, Irvine*

**11AC.6 Observed Particle Phase Chemistry Deviates from Brown Carbon Formation in Bulk Solutions.** HENSLEY JACK, Adam Birdsall, Valtierra Gregory, Frank Keutsch, *Harvard University*

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11AS SYMPOSIUM: AIR QUALITY SENSORS: LOW-COST != LOW COMPLEXITY III: INFORMING EXPOSURE  
ROOM B 115-116

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**Audrey Dang and David Hagan, chairs**

**11AS.1 Estimating Personal Exposures from a Multi-Hazard Sensor Network.** KIRSTEN KOEHLER, Christopher Zuidema, 3:30 Larissa Stebounova, Sinan Sousan, Alyson Gray, Oliver Stroh, Geb Thomas, Thomas Peters, *Johns Hopkins Bloomberg School of Public Health*

**11AS.2 Big Data and Air Quality: Using Twitter Data for Air Quality Monitoring.** Supraja Gurajala, SURESH DHANIYALA, 3:45 *SUNY Potsdam, NY*

**11AS.3 Spatiotemporal Modeling of PM<sub>2.5</sub>, CO and NO<sub>2</sub> Concentrations Measured by a Low-cost Sensor Network: Comparison of Linear and Machine-learning Enabled Land Use Models.** SAKSHI JAIN, Albert Presto, Naomi Zimmerman, *University of British Columbia*

**11AS.4 Integrating Low-cost Sensor Networks with Fixed and Satellite Monitoring Systems for Enhanced Accuracy, Reliability, and Applicability.** JIAYU LI, Huang Zhang, Chun-Ying Chao, Chih-Hsiang Chien, Chang Yu Wu, Cyuan-Heng Luo, Ling-Jyh Chen, Pratim Biswas, *Washington University in St Louis*

**11AS.5 Improving the Performance of Low-Cost Optical Particle Counters with Machine Learning: Applications for Indoor Aerosol Measurements.** Satya Sundar Patra, RISHABH RAMSISARIA, Ruihang Du, Tianren Wu, Brandon E. Boor, *Purdue University*

**11AS.6 Community-owned Air Quality Monitoring in East Boston, MA: An Integrated Approach to Air Health.** SCOTT HERSEY, Eben Cross, David Hagan, Jared Briskman, Lacie Fradet, Lauren Gulland, Isabel Harrison, Jonathan Jacobs, Linnea Laux, Samuel Myers, Louise Nielsen, Taylor Sheneman, Katerina Soltan, Jonah Spear, *Franklin W. Olin College of Engineering*

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11BA BIOAEROSOLS III

ROOM B 113-114

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**Doug Reed and Justin Taylor, chairs**

**11BA.1 Characterization of M. Tuberculosis Lipids in Exhaled TB Bio-aerosols.** Robin Wood, Dapeng Chen, Wayne Bryden, CHARLES CALL, *Desmond Tutu HIV Research Centre, University of Cape Town*

**11BA.2 Aerosolization-Based Techniques to Synthesize Pulmonary Drug Carrier Microparticles for Tuberculosis Therapy.** CHETHANI ATHUKORALA, Hema Ravindran, Shantanu Sur, Suresh Dhaniyala, *Clarkson University*

**11BA.3 Improved Discrimination Between Dust and Bioaerosol by Aerosol Time-of-Flight Mass Spectrometry.** GAVIN CORNWELL, Camille Sultana, Markus Petters, Hashim Al-Mashat, Nicholas Rothfuss, Hans Taylor, Paul DeMott, Sonia Kreidenweis, Andrew Martin, Kimberly Prather, *University of California, San Diego*

**11BA.4 Modelling the Transport of Infectious Aerosols in Containment Patient Care Settings Using DNA-tagged Microspheres.** JOSHUA SANTARPIA, Danielle Rivera, Kevin Crown, Sean Kinahan, John Lowe, Jocelyn Herstein, *University of Nebraska Medical Center*

**11BA.5 Exhaled Breath Aerosol Collection Methods.** CHARLES CALL, Wayne Bryden, Dapeng Chen, Robin Wood, *Zeteo Tech*

**11BA.6 Non-invasive Measurement of Viral Load in Distal-Airway Lining Fluid through Characterization and Collection of Exhaled Breath Aerosols.** SOMAYEH YOUSSEFI, Jennifer German, Donald Milton, *University of Maryland School of Public Health*

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11CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE III

ROOM B 117-119

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**Alexandra Boris and Elizabeth Wiggins, chairs**

**11CA.1 Experimental Evidence of the Lensing Effect Suppression for Atmospheric Black Carbon Containing Brown Coatings.** VAIOS MOSCHOS, Robin Modini, Joel Corbin, Dario Massabò, Silvia G. Danelli, Camilla Costa, Athanasia Vlachou, Kaspar Daellenbach, Paolo Prati, Martin Gysel, Andre S.H. Prévôt, Urs Baltensperger, Imad El Haddad, *Paul Scherrer Institute*

**11CA.2 Evolution of the Light-absorption Properties of Brown Polycyclic Aromatic Hydrocarbons Due to Reaction with Nitrate Radicals.** ZEZHEN CHENG, Khairallah Atwi, Anita Avery, Manjula Canagaratna, Philip Croteau, Edward Fortner, Jordan Krechmer, Francesca Majluf, Leah Williams, Zhenhong Yu, Douglas Worsnop, Andrew Lambe, Rawad Saleh, *University of Georgia*

**11CA.3 Evaluation of the Density and Absorption Properties of Laboratory-Generated Particulate Organic Nitrates (pON).** JEAN-EUDES PETIT, Alexandre Albinet, Andrew Lambe, Athina-Cerise Kalogridis, Liine Heikkinen, Frans Graeffe, Manuela Cirtog, Anaïs Féron, James Allan, Zainab Bibi, Tanguy Amodeo, Nicolas Karoski, Robin Aujay-Plouzeau, Laurent Meunier, Valerie Gros, Nicolas Bonnaire, Roland Sarda-Esteve, Francois Truong, Mikael Ehn, Tuija Jokinen, Minna Aurela, Evelyn Freney, Leah Williams, Olivier Favez, et al., *LSCE*

**11CA.4 Quantifying Organic Matter and Functional Groups in Aerosol Filter Samples from the Southeastern Aerosol Research and Characterization (SEARCH) Network.** ALEXANDRA BORIS, Satoshi Takahama, Andrew Weakley, Bruno Debus, Stephanie L. Shaw, Eric Edgerton, Ann Dillner, *University of California, Davis*

- 11CA.5 Regional Climate and Air Quality Impacts of Particulate Emissions from Gasoline Direct-Injection (GDI) Vehicles.** SOROUSH ESMAEILI NEYESTANI, Gabriel Kooperman, Rawad Saleh, *University of Georgia*  
4:30
- 11CA.6 Seasonal Variations in Aerosol Emissions from Light- and Heavy-Duty Vehicles in the Fort McHenry Tunnel.**  
4:45 ANDREY KHLYSTOV, David Campbell, *Desert Research Institute*

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11CO COMBUSTION III

ROOM A 106

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**Chelsea Preble and Albert Presto, chairs**

- 11CO.1 It's Not All about Mass: Changes in Particle Number and Composition from Light Duty Vehicle Engine Combustion through the Use of Gasoline Particle Filters.** REBECCA TANZER GRUENER, Stani Bohac, Albert A. Presto, *Carnegie Mellon University*  
3:30
- 11CO.2 Exploring the Secondary Organic Aerosol Formation Potential and Subsequent Secondary Trends from Gasoline Direct Injection Vehicles with Varying Experimental Conditions.** PATRICK ROTH, David R. Cocker III, Georgios Karavalakis, Akua Asa-Awuku, *TSI Incorporated*  
3:45
- 11CO.3 Characterizing In-Use Commercial Harbor Craft Emissions.** CHELSEA V. PREBLE, Rebecca Sugrue, Hannah Schlaerth, George Ban-Weiss, Thomas W. Kirchstetter, *University of California, Berkeley*  
4:00
- 11CO.4 Impacts of Switching from Diesel to Liquefied Natural Gas (LNG) for A Marine Vessel.** WEIHAN PENG, Jiacheng Yang, Joel Corbin, Qi Li, Una Trivanovic, Steven Rogak, Prem Lobo, Patrick Kirchen, Stephanie Gagne, David R. Cocker III, Wayne Miller, *University of California, Riverside*  
4:15
- 11CO.5 Uncertainty in Thermal-Optical Analysis for Elemental Carbon from Aircraft Engine Exhaust.** GREGORY SMALLWOOD, Stephanie Gagne, Brett Smith, Joel Corbin, Benjamin Brem, Andrea Fischer, Lukas Durdina, Prem Lobo, *National Research Council Canada*  
4:30
- 11CO.6 Particle Emissions from In-use Commercial Aircrafts Observed at the Narita International Airport.** NOBUYUKI TAKEGAWA, Kentaro Misawa, Akihiro Fushimi, Yoshiko Murashima, Hiromu Sakurai, *Tokyo Metropolitan University*  
4:45

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11IS SYMPOSIUM: THE AIR WE BREATHE: INDOOR AEROSOL SOURCES AND CHEMISTRY III

ROOM B 110-112

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**Rachel Adams and Christopher Lim, chairs**

- 11IS.1 Secondary Aerosol Mass Contributions from Human Occupants in a Classroom.** ANITA AVERY, Michael Waring, Peter DeCarlo, *Drexel University*  
3:30
- 11IS.2 Post-Wildfire Assessment of Indoor Dust Composition in Canadian Homes.** JUSTIN H. DINGLE, Lukas Kohl, Meng Meng, Yue Shi, Arthur W. H. Chan, *University of Toronto*  
3:45
- 11IS.3 The CHEER Study: It's a Complicated Association between Home Infiltration Rates and Respiratory Health.** SHELLY MILLER, Jamie Humphrey, Prateek Shrestha, John Adgate, Elizabeth Carlton, Elisabeth Root, *University of Colorado Boulder*  
4:00
- 11IS.4 Outside-In and Other Sources of Aerosols in the Indoor Environment.** PETER DECARLO, Anita Avery, Erin Katz, Michael Waring, Marina Vance, Delphine K. Farmer, *Drexel University*  
4:15
- 11IS.5 Spatial Distribution of Indoor Aerosol during HOMEChem Cooking Events.** ERIN K. BOEDICKER, Delphine K. Farmer, Marina Vance, *Colorado State University*  
4:30
- 11IS.6 Insights on Aerosol Emissions during HOMEChem.** SAMEER PATEL, Sumit Sankhyan, Yilin Tian, Allen Goldstein, Delphine K. Farmer, Marina Vance, *University of Colorado Boulder*  
4:45

**Friday 8:00 AM - 9:15 AM**  
**Plenary IV**

8:00 **AEESP Lecture: This is Getting Dynamic: How the Volatility Basis Set Informs Particle Formation and Growth**  
Neil Donahue, *Carnegie Mellon University*

**Moderator** Jesse Kroll, *Massachusetts Institute of Technology*

9:00 **Student Poster Competition Awards Presentation** Shunsuke Nakao, *Clarkson University*

**Fine Particle Art Prizes** Marit Meyer, *NASA*

9:10 **Concluding Remarks and Preview for 2020** Nga Lee "Sally" Ng and Matti Maricq, *Georgia Institute of Technology and Ford Motor Company*

**Friday 9:15 AM - 9:45 AM**  
**Coffee Break**

**Friday 9:45 AM - 11:00 AM**  
**Session 12: Platform**

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12AC AEROSOL CHEMISTRY X: ATMOSPHERIC SULFUR REACTIONS  
*OREGON BALLROOM*

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**Sara Lance and Paul Van Rooy, chairs**

**12AC.1 Sulfate Formation from SO<sub>2</sub> Uptake onto Organic Aerosol.** Shunyao Wang, William Tsui, V. Faye McNeill,  
9:45 Jonathan Abbatt, ARTHUR W. H. CHAN, *University of Toronto*

**12AC.2 Moving Beyond the Bulk Phase: Kinetics of SO<sub>2</sub> Oxidation in Sub-Micron, Deliquesced Aerosol Particles.**  
10:00 TENG YU LIU, Jonathan Abbatt, *University of Toronto, Canada*

**12AC.3 Mechanisms and Compounds in Atmospheric Acid-Base Particle Formation.** NANNA MYLLYS, Tinja Olenius,  
10:15 Sabrina Chee, James Smith, *University of California, Irvine*

**12AC.4 Oxidation of Reduced Sulfurs and Amines: Characterization and Mechanism Development.** PAUL VAN ROOY,  
10:30 Kathleen Purvis-Roberts, Philip Silva, Matthew Nee, David R. Cocker III, *University of California, Riverside*

**12AC.5 Missing Source of Atmospheric Sulfate Formation in Wintertime Beijing Haze: Linking SO<sub>2</sub> Oxidation and HONO Chemistry.** JUNFENG WANG, Jingyi Li, Jian Zhao, Jianhuai Ye, Xinlei Ge, Yiming Qin, Pengfei Liu, Shaojie Song, Hong Liao, Mindong Chen, Yele Sun, Qi Zhang, Scot T. Martin, Daniel Jacob, *Harvard University*

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12AP AEROSOL PHYSICS III  
*ROOM A 106*

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**Hans Moosmuller and Matt Berg, chairs**

**12AP.1 Monte Carlo Simulations of Particle Formation Processes.** GREGOR KOTALCZYK, Ivan Skenderović, Frank Einar  
9:45 Kruis, *University Duisburg-Essen*

**12AP.2 Modeling Smog Chamber Experiments: Forward and Inverse.** NASER G. A. MAHFOUZ, Neil Donahue, *Carnegie Mellon University*

- 12AP.3 Latent Heat for Condensation and Coagulation During Nanocluster Growth.** HUAN YANG, Yannis Drossinos, Christopher Hogan Jr., *University of Minnesota*  
10:15
- 12AP.4 Determination of Gas Phase Ion Structures of Locally Polar Homopolymers through High Resolution Ion Mobility Spectrometry-Mass Spectrometry.** CARLOS LARRIBA-ANDALUZ, Xi Chen, *IUPUI*  
10:30
- 12AP.5 Characterization of the Particle Wall Loss in the UCR Collapsible FEP-Teflon Chamber.** CHEN LE, Don Collins, David R. Cocker III, *University of California, Riverside*  
10:45

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12AS SYMPOSIUM: AIR QUALITY SENSORS: LOW-COST != LOW COMPLEXITY IV: SENSOR FUNDAMENTALS

ROOM B 115-116

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Rebecca Sugrue and Andrew Metcalf, chairs

- 12AS.1 Variability Between High Time-Resolution PM Data from Regulatory Instruments: Implications for Low-cost Sensor Evaluations.** KAROLINE BARKJOHN, Ian VonWald, Joann Rice, Robert Vanderpool, Tim Hanley, Andrea Clements, *U.S. EPA Office of Research and Development*  
9:45
- 12AS.2 Assessing the Accuracy and Reliability of Low-cost Particle Sensors for Quantifying Fine Particulate Matter.** DAVID HAGAN, Eben Cross, Timothy Onasch, John Jayne, Douglas Worsnop, Jesse Kroll, *MIT*  
10:00
- 12AS.3 Characteristics of Ambient Ultrafine Particles Using a Combination of Low-Cost Sensors: Size Distributions and Volatility.** MOLLY J. HAUGEN, Robert T. Nishida, Tyler T. Johnson, Anna K. Schroeder, Josh Hassim, Marc E.J. Stettler, Simone Hochgreb, Adam M Boies, *University of Cambridge*  
10:15
- 12AS.4 Ground- and Aerial-Based Platforms to Measure Aerosol Size Distributions: Spatiotemporal Variability, Vertical Profiles, and Near Source Sampling.** SHANTANU JATHAR, Liam Lewane, Dylan Giardina, Shiva Tarun, Joshua Weller, Alex Lieberman, Kepler Worobec, Vance Payne, Tim Gordon, Gavin McMeeking, *Colorado State University*  
10:30
- 12AS.5 Six Years of Human and Machine Learning about Electrochemical Sensors.** EBEN CROSS, David Hagan, Leah Williams, Douglas Worsnop, Jesse Kroll, John Jayne, *Aerodyne Research, Inc.*  
10:45

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12BA BIOAEROSOLS IV

ROOM B 113-114

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Susannah Burrows and Tianren Wu, chairs

- 12BA.1 Microbes Thrive in Clouds and Interact with Physico-chemical Processes: From Field Observations to Atmospheric Models.** PIERRE AMATO, Barbara Ervens, Raphaelle Peguilhan, Laurent Deguillaume, Anne-Marie Delort, *ICCF, CNRS, Clermont Auvergne Université*  
9:45
- 12BA.2 Real-time Monitoring and Modelling of Bioaerosols in Dublin, Ireland.** Jose Manzano, Eoin McGillicuddy, Gavin Sewell, Paul Dowding, Matt Smith, Roland Sandra-Esteve, Dominique Baisnee, John Sodeau, DAVID O'CONNOR, *Technological University Dublin*  
10:00
- 12BA.3 Effect of Season and Environmental Parameters on Assemblages of Airborne Bacteria and Fungi in Mexico City.** GEDIMINAS MAINELIS, Valdis Kruminis, M. Hernandez, Jose Angeles, Victor Paramo-Figueroa, Martha Torres, Stephan Schwander, *Rutgers, The State University of New Jersey*  
10:15
- 12BA.4 Complex Organic Particles from Terrestrial Sources as Ice Nucleators – More Than a Sum of Their Parts?** ISABELLE STEINKE, Naruki Hiranuma, Ottmar Möhler, Susannah Burrows, *Pacific Northwest National Laboratory*  
10:30
- 12BA.5 Pollen Collection Campaign: Clustering and Classification Applications Utilizing a High-Spectral Resolution UV-LIF Instrument.** BENJAMIN E. SWANSON, Samir Rezgui, J. Alex Huffman, *University of Denver, CO*  
10:45

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12CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE IV

ROOM B 117-119

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**Joseph Woo and Yunle Chen, chairs**

- 12CA.1 Spatio-temporal Trends and Source Apportionment of PM<sub>2.5</sub> Organic Carbon Thermal Fractions (OC<sub>x</sub>) across the Los Angeles Basin.** EHSAN SOLEIMANIAN, Amirhosein Mousavi, Sina Taghvaei, Mohammad Sowlat, Sina Hasheminassab, Andrea Polidori, Constantinos Sioutas, *University of Southern California*  
9:45
- 12CA.2 Biases in Quantifying Light Absorption Enhancement for Coated Black Carbon Aerosol Using a Thermodenuder.** NISHIT SHETTY, Apoorva Pandey, Wei Min Hao, Stephen Baker, Rajan K. Chakrabarty, *Washington University in St. Louis*  
10:00
- 12CA.3 Development of a Universal Correction Algorithm for Filter-Based Absorption Photometers.** HANYANG LI, Gavin McMeeking, Andrew May, *The Ohio State University*  
10:15
- 12CA.4 Prediction of Black Carbon Mass Absorption Cross Section: Effects of Particle Morphology and Refractive Index.** FENGSHAN LIU, Jerome Yon, Andrés Fuentes, Joel Corbin, Prem Lobo, Gregory Smallwood, *National Research Council Canada*  
10:30
- 12CA.5 Quantifying the Thickness of Volatile Particle Coatings.** OGOCHUKWU ENEKWIZU, Ali Hasani, Mary McGuinness, Alexei Khalizov, *New Jersey Institute of Technology*  
10:45

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12IS SYMPOSIUM: THE AIR WE BREATHE: INDOOR AEROSOL SOURCES AND CHEMISTRY IV  
ROOM B 110-112

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**Andy Ault and Erin Katz, chairs**

- 12IS.1 Modeling Indoor Surface Chemistry Using Kinetic Multilayer Models.** Pascale Lakey, Glenn Morrison, James Mattila, Youngbo Won, Krista Parry, Michael von Domaros, Douglas Tobias, Donghyun Rim, Jonathan Abbatt, Delphine K. Farmer, MANABU SHIRAIWA, *University of California, Irvine*  
9:45
- 12IS.2 Multiphase Reaction Mechanisms of Criegee Intermediates in Indoor Environments.** KEVIN WILSON, *Lawrence Berkeley National Laboratory*  
10:00
- 12IS.3 Formation of Isocyanic Acid from the Heterogeneous Ozonolysis of Tobacco Smoke Deposited onto Indoor Surfaces.** CHRISTOPHER LIM, Jonathan Abbatt, *University of Toronto, Canada*  
10:15
- 12IS.4 Change in Reactivity of Organic Aerosols toward Heterogeneous OH Oxidation over Reaction Time.** Man Mei Chim, Christopher Lim, Jesse Kroll, MAN NIN CHAN, *The Chinese University of Hong Kong*  
10:30
- 12IS.5 Methods for the Quantification and Identification of Alkenes on Indoor Surfaces.** BENJAMIN DEMING, Paul Ziemann, *University of Colorado*  
10:45

**Friday 11:15 AM - 12:30 PM**  
**Session 13: Platform**

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13AC AEROSOL CHEMISTRY XI: AEROSOL CHEMISTRY IN THE ATMOSPHERE  
OREGON BALLROOM

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**Celia Faiola and Yue Zhang, chairs**

- 13AC.1 A Diversity and Distribution of Organic Aerosol Functional Groups across Multiple Sites and Seasons.** JENNA DITTO, Taekyu Joo, Jonathan Slade, Paul Shepson, Nga Lee Ng, Drew Gentner, *Yale University*  
11:15
- 13AC.2 Characterization of Organics in Cloud Water: Measurements from the Present Day and from Decades Past.** SARA LANCE, Christopher Lawrence, Jie Zhang, Qi Zhang, Liaquat Husain, Dan Kelting, Elizabeth Yerger, Hunter Favreau, James Schwab, Paul Casson, Richard Brandt, *University at Albany, SUNY*  
11:30

- 13AC.3 Linking Organic and Sulfate Concentrations to the Annual Phytoplankton Bloom Cycle in the North Atlantic.** 11:45 GEORGES SALIBA, Chia-Li Chen, Savannah Lewis, Lynn Russell, Derek Coffman, Patricia Quinn, Lucia Upchurch, Timothy Bates, Michael Behrenfeld, *Scripps Institution of Oceanography*
- 13AC.4 Aerosol Precursors from Agricultural Emissions.** PHILIP SILVA, *USDA - Agricultural Research Service*  
12:00
- 13AC.5 Urban Pollution Greatly Enhances Formation of Natural Aerosols over the Pristine Amazon.** MANISHKUMAR SHRIVASTAVA, Meinrat O. Andreae, Paulo Artaxo, Henrique Barbosa, Larry Berg, Joel Brito, Joseph Ching, Richard Easter, Jiwen Fan, Jerome Fast, Marianne Glasius, Allen Goldstein, Eliane Gomes, Helber Gomes, Dasa Gu, Alex Guenther, Shantanu Jathar, Saewung Kim, Sijia Lou, Scot T. Martin, Alla Zelenyuk, Rahul Zaveri, John Shilling, Joel A. Thornton, et al., *Pacific Northwest National Laboratory*
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13AP AEROSOL PHYSICS IV

ROOM A 106

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**Justice Archer and Chris Hogan, chairs**

- 13AP.1 Spherical Particle Absorption over a Broad Range of Imaginary Refractive Index.** CHRISTOPHER SORENSEN, 11:15 Justin Maughan, Hans Moosmuller, *Kansas State University*
- 13AP.2 Estimating Uncertainties in Refractive Index Retrievals from Optical Closure Calculations using Full Aerosol Size Distributions.** ALEXANDER FRIE, Roya Bahreini, *University of California, Riverside*  
11:30
- 13AP.3 Surface Tensions of Picoliter Droplets with Sub-Millisecond Surface Age.** BRYAN R. BZDEK, Rachael E.H. Miles, 11:45 Michael Glerum, Hallie Boyer, Jim Walker, Jonathan P. Reid, Cari Dutcher, *University of Bristol*
- 13AP.4 Optical Properties and Q-space Study of Fractal-like Soot Aggregates from Coal Combustion Based on 3-D Electron Tomographic Reconstruction.** CHENCHONG ZHANG, William Heinson, Jingkun Jiang, Rajan K. Chakrabarty, *Washington University in St. Louis*  
12:00
- 13AP.5 Aerodynamic Resuspension of RDX Trace Particles by Planar Impinging Air Jet.** KALYAN KOTTAPALLI, 12:15 Hari Krishnan Murali, Guanyu Song, Igor Novosselov, *University of Washington*
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13AS SYMPOSIUM: AIR QUALITY SENSORS: LOW-COST != LOW COMPLEXITY V: SENSOR EVALUATION

ROOM B 115-116

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**Karoline Barkjohn and Eben Cross, chairs**

- 13AS.1 Applicability of Different Type Particulate Matter Sensors to Urban Air Quality Measurements.** JOEL KUULA, 11:15 Heino Kuuluvainen, Topi Rönkkö, Jarkko Niemi, Erkkä Saukko, Harri Portin, Minna Aurela, Sanna Saarikoski, Rostedt Antti, Hilikka Timonen, *Finnish Meteorological Institute*
- 13AS.2 Evaluation of a New Low-Cost Particle Sensor as an IoT Device for Outdoor Particulate Matter Monitoring.** 11:30 ANDREW METCALF, Christopher Post, John Pearce, Austin Green, Nilima Sarwar, Elena Mikhailova, Michael Cope, *Clemson University*
- 13AS.3 Evaluating Performance of High-, Mid-, and Low-cost Analyzers for Capturing Heavy-duty Diesel Truck Exhaust Plumes.** REBECCA SUGRUE, Chelsea V. Preble, Thomas W. Kirchstetter, *University of California, Berkeley*  
11:45
- 13AS.4 Evaluation of Low-Cost PurpleAir Monitors and In-Field Correction Using Co-Located Portable Filter Samplers.** JESSICA TRYNER, Christian L'Orange, John Mehaffy, Dan Miller-Lionberg, Josephine Hofstetter, John Volckens, *Colorado State University*  
12:00
- 13AS.5 Evaluation of Low-Cost Particulate Matter Sensors in a Test House.** JONATHAN GINGRICH, Sameer Patel, 12:15 Elizabeth Graham, Erin K. Boedicker, Delphine K. Farmer, Richard Corsi, Marina Vance, *University of Colorado Boulder*
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13BA BIOAEROSOLS V

ROOM B 113-114

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**David O'Connor and Jennifer Therkorn, chairs**

- 13BA.1 Evaluation of Five Samplers to Determine Personal Bioaerosol Exposure in Indoor and Outdoor Environments.** NIRMALA THOMAS, Taewon Han, Hyeon-Ju Oh, Gediminas Mainelis, *Rutgers, The State University of New Jersey*  
11:15
- 13BA.2 Development of Antimicrobial Resistance in Bioaerosols.** Gabriela Ramos, Brinda Venkateshaiah, Ryan Gerlich, Anish Jantrania, MARIA KING, *Texas A&M University*  
11:30
- 13BA.3 Antibiotic Resistance Genes Distribution Analysis in Common Respiratory Pathogens.** MINFEI WANG, Maosheng Yao, *Peking University*  
11:45
- 13BA.4 Quantitative Microbial Exposure Assessment of Aerosolized Enteric and Opportunistic Pathogens in La Paz, Bolivia: A One Health Approach to Study Bioaerosols in Cities with Poor Sanitation.** LUCAS ROCHA-MELOGNO, Olivia Ginn, Emily Bailey, Gregory Gray, Michael Bergin, Freddy Soria, Marcos Andrade, Joseph Brown, Marc Deshusses, *Duke University*  
12:00
- 13BA.5 Biological Composition of Coastal Airborne Particulate Matters during Enteromorpha Prolifera Outbreak.** JIAHUI RONG, Song Yu, Yan Wu, *Shandong University*  
12:15

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13CA CARBONACEOUS AEROSOLS IN THE ATMOSPHERE V

ROOM B 117-119

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**Joel Corbin and Alex Lee, chairs**

- 13CA.1 Chemical Evolution of Particulate and Gas-phase Emissions from Meat Cooking.** AIKATERINI LIANGOU, Spiro Jorga, Christos Kaltsonoudis, Antonios Tasoglou, Leif Jahn, Mingyi Wang, Spyros Pandis, *Carnegie Mellon University, University of Patras*  
11:15
- 13CA.2 Laboratory Chamber Study on Organic Acids Production from Biogenic VOC Oxidation.** YUNLE CHEN, David Tanner, Greg Huey, Rodney J. Weber, Nga Lee Ng, *Georgia Institute of Technology*  
11:30
- 13CA.3 Influence of Ammonia and Relative Humidity on the Optical Properties of Secondary Organic Aerosol Particles.** YUMENG CUI, Alexander Frie, Isis Frausto-Vicencio, Francesca Hopkins, Roya Bahreini, *University of California, Riverside*  
11:45
- 13CA.4 Enhanced Ligand-Promoted Photochemical Reduction of Ferric Iron by Carbonaceous Nanoparticles.** Ashleen Reddy, ANNE JOHANSEN, *Central Washington University*  
12:00
- 13CA.5 Ocean Biology Effects on Saccharide Composition in Sea Spray Aerosol.** ELIAS HASENECZ, Wyeth Gibson, Samantha Kruse, Jon Sauer, Kathryn Mayer, Chris Lee, Kimberly Prather, Elizabeth Stone, *University of Iowa*  
12:15

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13IS SYMPOSIUM: THE AIR WE BREATHE: INDOOR AEROSOL SOURCES AND CHEMISTRY V

ROOM B 110-112

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**Madeline Cooke and Anita Avery, chairs**

- 13IS.1 Dynamic Equilibria of Volatile Chemicals between Indoor Surfaces and Indoor Air.** JONATHAN ABBATT, Douglas Collins, Chen Wang, *University of Toronto, Canada*  
11:15
- 13IS.2 Influence of Gas-Phase and Heterogeneous OH Aging Reactions on Indoor Organic Aerosol Loading and SOA Formation.** BRYAN CUMMINGS, Michael Waring, *Drexel University*  
11:30
- 13IS.3 Investigation of Natural Ventilation and Household Activities during the Air Composition and Reactivity from Outdoor and Indoor Mixing (ACRONIM) Field Campaign.** CLAIRE FORTENBERRY, Michael Walker, Audrey Dang, Azin Eftekhari, Arun Loka, Gauri Date, Karolina Cysneiros de Carvalho, Glenn Morrison, Brent Williams, *Washington University in St Louis*  
11:45
- 13IS.4 Indoor Abundance of Semivolatile Organic Compounds under Dynamic Aerosol Conditions.** DAVID LUNDERBERG, Kasper Kristensen, Yilin Tian, Caleb Arata, Yingjun Liu, Pawel Misztal, William Nazaroff, Allen Goldstein, *University of California, Berkeley*  
12:00



**13IS.5 Molecular Composition and Gas-Particle Partitioning of Indoor Cooking Aerosol: Insights from a FIGAERO-CIMS.** CATHERINE MASOUD, Dongyu S. Wang, Lea Hildebrandt Ruiz, *University of Texas at Austin*  
12:15