American Association for Aerosol Research - Abstract Submission

AAAR 39th Annual Conference
October 18 - October 22, 2021

Virtual Conference

Monday

Monday 8:00 AM - 9:15 AM
Plenary I: ASEEP Lecture

8:00 **Welcoming Remarks** Chris Hogan, Conference Chair, *University of Minnesota*

8:05 **ASEEP Lecture: Tiny Critters, Huge Impacts: Ocean Microbes, Climate, and Health** Kimberly Prather, *University of California, San Diego*

Moderator Susanne Hering, *Aerosol Dynamics*

9:05 **AAAR Fellows, Hering Award** Sheryl Ehrman, Awards Committee Chair, *San Jose State University*

Monday 9:30 AM - 10:30 AM
Session 1: Platform

1AC AEROSOL CHEMISTRY I

Qi Zhang and Paul Ziemann, chairs

1AC.1 9:30 **Viscosity and Chemical Composition of Secondary Organic Aerosol from Real Healthy and Stressed Canary Island Pine Trees.** NATALIE R. SMITH, Giuseppe Crescenzo, Anusha P.S. Hettiyadura, Kyla Siemens, Ying Li, Celia Faiola, Alexander Laskin, Manabu Shiraiwa, Allan Bertram, Sergey Nizkorodov, *University of California, Irvine*

1AC.2 9:30 **Morphology and Viscosity Changes after Reactive Uptake of Isoprene Epoxydiols in Submicrometer Phase Separated Particles with Secondary Organic Aerosol Formed from Different Volatile Organic Compounds.** ANDREW AULT, Ziying Lei, Nicole Olson, Yue Zhang, Yuzhi Chen, Andrew Lambe, Jing Zhang, Natalie White, Joanna Atkin, Mark Banaszak Holl, Zhenfa Zhang, Avram Gold, Jason Surratt, *University of Michigan*

1AC.3 9:30 **Exploring Supramolecular Effects on the Viscosity and Phase State of Aqueous Organic-Inorganic Aerosols.** RYAN DAVIS, Erik Huynh, Josefina Hajek-Herrera, *Trinity University*

1AC.4 9:45 **The Impacts of Aerosol Mixing State on N2O5 Uptake Coefficient.** YICEN LIU, Yu Yao, Jeffrey H. Curtis, Matthew West, Nicole Riemer, *University of Illinois at Urbana-Champaign*

1AC.5 9:45 **Experimental Investigation of the Gas- and Particle-Phase Products and Mechanism of NO3 Radical Oxidation of Δ-3-Carene, α-Pinene, and Limonene.** MARLA DEVAULT, Paul Ziemann, *University of Colorado*

1AC.6 9:45 **Influence of Continuous NOX Injection on SOA Yield from Biogenic Precursors: Comprehensive Branching Ratio Study.** SAHAR GHADIMI, David Cocker, *University of California, Riverside*

1AC.7 10:00 **Hygroscopic Growth and Water Transport in Mixed Organic-Inorganic Aerosol Particles.** JAMES F. DAVIES, Jack Choczynski, Ravleen Kaur Kohli, Craig Sheldon, Chelsea Price, *University of California, Riverside*

1AC.9 10:00 **Aqueous Phase Photochemical Transformations of Phenolic SOA: Comparisons between OH Radical and Triplet Carbon Oxidation.** CHRISTOPHER NIEDEK, Wenqing Jiang, Ryan Farley, Lan Ma, Stephanie Arciva, Cort Anastasio, Qi Zhang, *University of California, Davis*

1AC.11 10:15 **Pressure Implication in Atmospheric Aerosols: Rate Constant and Product Formation.** CLÉMENT DUBOIS, Sebastien Perrier, Yinon Rudich, Sergey Nizkorodov, Frédéric Caupin, Thorsten Hoffmann, Chrisitan George, Matthieu Riva, *CNRS-IRCELYON*

1AC.12 10:15 **State of Air Pollution and Its Health Effects on Human Health - A Case Study of Karachi, Pakistan.** KAMRAN KHAN, Saiyada Masood, Sumayya Saied, Azhar Siddique, Mirza M. Hussain, Haider Khwaja, *University of Karachi, Pakistan*

1AE AEROSOL EXPOSURE I

Keith Bein and Xiaoyu Liu, chairs

1AE.1 9:30 **Laboratory Evaluation of Low-cost Optical Particle Counters for Environmental and Occupational Exposures.** SINAN SOUSAN, Swastika Regmi, Yoo Min Park, *East Carolina University*

1AE.2 9:30 **Investigation into the Pulmonary Health Effects of Dust and Sea Spray Aerosol from the Salton Sea on Mice using Whole Body Exposure Chamber.** QI LI, Ryan Drover, Trevor Biddle, Mia Rose Maltz, David Lo, David R. Cocker III, *University of California, Riverside*

1AE.3 9:30 **Openly Accessible Low-Cost Measurements for PM2.5 Exposure Modeling: Guidance for Monitor Deployment with a Similarity Metric.** JIANZHAO BI, Nancy Carmona, Magali Blanco, Amanda Gassett, Edmund Seto, Adam Szpiro, Timothy Larson, Paul Sampson, Joel Kaufman, Lianne Sheppard, *University of Washington*

1AE.4 9:45 **Emulating Chronic Near-Roadway Exposures for Studying Alzheimer's Disease.** KEITH BEIN, Kelley Patten, Anthony Valenzuela, Christopher Wallis, Elizabeth Berg, Jill Silverman, Anthony S. Wexler, Pamela Lein, *University of California, Davis*

1AE.5 9:45 **Source-Resolved Variability of Fine Particulate Matter and Human Exposure in an Urban Area.** BRIAN DINKELACKER, Pablo Garcia, Iannis Kioutsioukis, Peter Adams, Spyros Pandis, *Carnegie Mellon University*

1AE.7 10:00 **The Impact of Vegetated and Non-vegetated Roadway Barriers on Particle Concentrations and Toxicity.** ROBY GREENWALD, Christina Fuller, Christa Wright, Haris Bejdic, *Georgia State University*

1AE.8 10:00 **High-Resolution Social Cost Modeling Offers Insight into Efficiency-Equity Trade-Offs in Pollution Mitigation Strategies.** BRIAN GENTRY, Allen Robinson, Peter Adams, *Carnegie Mellon University*

1AE.9 10:00 **Global Air Quality and Human Health Effects of Solid Biofuel Stove Emissions.** YAOXIAN HUANG, Debatosh Partha, Kandice Harper, Chris Heyes, *Wayne State University*

1AE.10 10:15 **Investigation of Protection Efficiency for Masks Commonly Used for Ultrafine Particles and Their Effects on Aerosol Respiratory Deposition.** JINHO LEE, Wei-Chung Su, *University of Texas Health Science Center at Houston*

1AE.11 10:15 **Morphometric Study of Varied Particle Size Fractions in Different Socio-Economic Urban Microenvironments of Northern India.** HIMANSHI ROHRA, Atar Singh Pipal, Ajay Taneja, Gursumeeran Satsangi, *Savitribai Phule Pune University, Pune, India*

1CO COMBUSTION I

Erica Belmont and Somesh Roy, chairs

1CO.1 9:30 **Ice Nucleation on Soot Particles: Measurements, Predictions and Implications.** FABIAN MAHRT, Bernd Kärcher, Claudia Marcolli, *University of British Columbia*

1CO.2 9:30 **Quantifying Brown Carbon Light Absorption in Real-world Biofuel Combustion Emissions.** MOHAMMAD MAKSIMUL ISLAM, Andrew Whitesell, Alyssa Sanderson, Ashley Bittner, Soroush Neyestani, Rawad Saleh, Andrew Grieshop, *North Carolina State University*

1CO.3 9:30 **Design and Evaluation of a New Source Sampler for on-Field Emission Measurement from Combustion Sources.** JYOTI KUMARI, Kashish Jain, Kumail Zaidi, Gazala Habib, *Indian Institute of Technology Delhi*

1CO.4 9:45 **The Role of Oxidizer Concentration, Fuel Consumption Rate, and Dilution Conditions on Near-source Aerosol Emissions from Lignocellulosic Biomass and Constituent Burning.** LUKE MCLAUGHLIN, Erica Belmont, *University of Wyoming*

1CO.5 9:45 **Carbon Black and Hydrogen Production: An Optimized Reaction Mechanism for Methane Pyrolysis.** AMBUJ PUNIA, James Tatum, Larry Kostiuk, Jason S. Olfert, Marc Secanell, *University of Alberta*

1CO.6 9:45 **Solid-Phase Excitation-Emission Matrix Spectroscopy for Chemical Analysis of Combustion Aerosols.** Gaurav Mahamuni, Jiayang He, Jay Rutherford, Byron Ockerman, Arka Majumdar, Gregory Korshin, Edmund Seto, IGOR NOVOSSELOV, *Univertsity of Washington*

1CO.7 10:00 **Effects of Polyoxymethylene Dimethyl Ether (PODE) Blended Fuel on Diesel Engine Emission.** MUTIAN MA, Laura-Helena Rivellini, Nethmi Kasthuriarachchi, Qiren Zhu, Yichen Zong, Wenbin Yu, Wenming Yang, Markus Kraft, Alex Lee, *National University of Singapore*

1CO.8 10:00 **Repeatable Emission Studies of Controlled Biomass Pyrolysis and Combustion Using a Cone Calorimeter Set-Up.** VILHELM B. MALMBORG, François-Guillaume Ide, Dan Madsen, Ioannis Sadiktsis, Michaël Toublanc, Patrick van Hees, Andrew Grieshop, Joakim Pagels, *Lund University, Sweden*

1CO.9 10:15 **Global Emissions of Hydrogen Chloride and Fine Particulate Chloride from Anthropogenic Sources and Biomass Open Burning.** BINGQING ZHANG, Huizhong Shen, Xiao Yun, Qirui Zhong, Barron Henderson, Shu Tao, Armistead G. Russell, Pengfei Liu, *Georgia Institute of Technology*

1RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOL I

Chongai Kuang and Jessica Mirrielees, chairs

1RA.1 9:30 **The 3rd Atmospheric Radiation Measurement (ARM) Mobile Facility Deployment to the Southeastern United States (SEUS): Updates on Siting, Instrumentation, and Opportunities for Inter-agency Coordination.** CHONGAI KUANG, Scott Giangrande, Shawn Serbin, Gregory Elsaesser, Pierre Gentine, Thijs Heus, John Peters, Mariko Oue, James Smith, Allison Steiner, *Brookhaven National Laboratory*

1RA.2 9:30 **Temporal Trends in the Emissions and Impacts of Monoterpenes in the Southeastern U.S. Demonstrate the Dominant Influence of Low-Concentration, Highly Reactive Compounds.** DEBORAH MCGLYNN, Graham Frazier, Laura E. R. Barry, Koong Yi, Xi Yang, Manuel Lerdau, Sally Pusede, Gabriel Isaacman-VanWertz, *Virginia Tech*

1RA.3 9:30 **Seasonal Contribution of Isoprene-Derived Organosulfates to Total Water-Soluble Fine Particulate Organic Sulfur in the United States.** YUZHI CHEN, Tracy Dombek, Jenny Hand, Zhenfa Zhang, Avram Gold, Andrew Ault, Keith Levine, Jason Surratt, *University of North Carolina at Chapel Hill*

1RA.4 9:45 **Atmospheric Transport of Pesticides and PFAS through Dry and Wet Deposition.** Eve Painter, JENNIFER FAUST, *College of Wooster*

1RA.5 9:45 **Gas and Particle-phase Measurements in a Rural Oil and Gas Production Region with a Vocus PTR-ToF-MS.** LEIF JAHN, Daniel C. Blomdahl, Nirvan Bhattacharyya, Catherine Masoud, Kristi McPherson, Pearl Abue, Kanan Patel, Lea Hildebrandt Ruiz, Pawel K. Misztal, *University of Texas at Austin*

1RA.6 9:45 **Characterization of Aerosol Vertical Profiles over the Western North Atlantic Ocean during the North Atlantic Aerosols and Marine Ecosystems Study (NAAMES).** FRANCESCA GALLO, Kevin Sanchez, Bruce Anderson, Matthew Brown, Ewan Crosbie, Carolyn Jordan, Claire Robinson, Taylor Shingler, Michael Shook, Kenneth Thornhill, Elizabeth Wiggins, Edward Winstead, Luke Ziemba, Richard Moore, *NASA Langley*

1RA.7 10:00 **Scattering-Constrained Coarse Mode Retrieval (SCMR) of Sea Spray Aerosol Concentration using a Submicron Particle Sizer and 3-Wavelength Integrating Nephelometer.** Jeramy Dedrick, LYNN RUSSELL, Georges Saliba, Dan Lubin, *Scripps Institution of Oceanography*

1RA.8 10:00 **Analysis of Wintertime Alaskan Sea Spray Aerosol Using Single-Particle Mass Spectrometry.** JUDY WU, Jun Liu, Jamy Lee, Lucia Upchurch, Patricia Quinn, Son Nghiem, Kerri Pratt, *University of Michigan*

1RA.9 10:00 **Sea Spray Aerosol Generation Experiments in the Summertime High Arctic Pack Ice.** JESSICA MIRRIELEES, Rachel Kirpes, Carlton Rauschenberg, Allison Remenapp, Yao Xiao, Nurun Nahar Lata, Vanessa Boschi, Swarup China, Andrew Ault, Amanda Grannas, Patricia Matrai, Kerri Pratt, *University of Michigan*

1RA.10 10:15 **Wintertime Chemistry of Ionic and Carbonaceous Species of Fine Aerosol Particles at an Arid Desert Region in North-Western India.** SAYANTEE ROY, Rishabh Dev, Gazala Habib, Ramya Sunder Raman, *Indian Institute of Technology Delhi*

1RA.11 10:15 **Submicron Aerosol Composition and Source Contributions across the Kathmandu Valley, Nepal.** Benjamin Werden, Michael R. Giordano, Khadak Mahata, Md. Robiul Islam, Siva Praveen Puppala, Arnico Panday, Robert J. Yokelson, Elizabeth Stone, PETER F. DECARLO, *Johns Hopkins University*

1RA.12 10:15 **Using Observational Constraints to Improve Aerosol Pollution Attribution over India.** SIDHANT J. PAI, Colette L. Heald, Hugh Coe, James Brooks, Mark W. Shephard, Enrico Dammers, Joshua S. Apte, Gan Luo, Fangqun Yu, Christopher D. Holmes, Chandra Venkataraman, Pankaj Sadavarte, Kushal Tibrewal, *Massachusetts Institute of Technology*

1SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 I

Shanna Ratnesar-Shumate and Paul Dabisch, chairs

1SI.1 9:30 **Measuring the Performance of Masks as Source Control Devices for Respiratory Aerosols.** WILLIAM LINDSLEY, Francoise Blachere, Brandon Law, Raymond Derk, Justin Hettick, Karen Woodfork, William Goldsmith, James Harris, Matthew Duling, Brenda Boutin, Theresa Boots, Jamye Coyle, Timothy Nurkiewicz, Donald Beezhold, John Noti, *National Institute for Occupational Safety and Health*

1SI.2 9:45 **Particle Size Distributions of Infectious Aerosols: Implications for Preventing Transmission.** KEVIN FENNELLY, *NIH/NHLBI*

1SI.3 10:00 **On the Intricate Relationship between Ventilation, Deposition and Airborne Virus Transmission in Indoor Environments.** K. MAX ZHANG, Bo Yang, Khaled Hashad, Alfredo Rodriguez, *Cornell University*

1SI.4 10:00 **In-Vitro Investigation of Exhaled Particle Deposition and Ventilation in Office Settings.** STEPHANIE EILTS, Linhao Li, Zachary Pope, Christopher J. Hogan, *University of Minnesota*

1SI.5 10:00 **Ventilation Systems and COVID-19.** Sunil Kumar, David Klassen, Tatiana Baig, MARIA KING, *Texas A&M University*

1SI.6 10:15 **Dynamic Behavior and Fate of Model Respiratory Fluids Aerosol in Indoor Environments.** LUCY NANDY, Emma Tackman, Miriam Freedman, *The Pennsylvania State University*

1SI.7 10:15 **Airborne Murine Coronavirus Persistence Circumscribing Efflorescence Humidity Thresholds in Saliva Microaerosols.** MARINA NIETO-CABALLERO, Eddie Fuques, Odessa M. Gomez, Shuichi Ushijima, Margaret Tolbert, Alina Handorean, Mark T. Hernandez, *University of Colorado Boulder*

1SI.8 10:15 **Aerosol Phase Changes Relevant to the Airborne Survival of Pathogens.** ERIK HUYNH, Anna Olinger, David Wooley, Josefina Hajek-Herrera, Ryan Davis, *Trinity University*

Monday 10:45 AM - 11:45 AM
Session 2: Platform

2AC AEROSOL CHEMISTRY II

Shantanu Jathar and Tran Nguyen, chairs

2AC.1 10:45 **Nucleation and Growth of Particulate Matter from Aromatic Hydrocarbons Using a Photooxidation Flow Tube.** ISSAK PROAÑO LÓPEZ, Murray Johnston, *University of Delaware*

2AC.2 10:45 **Nucleation Dynamics and Fragmentation Reactions Explain Differences in Secondary Organic Aerosol Formation between Environmental Chambers and Oxidation Flow Reactors.** CHARLES HE, Andrew Lambe, Beth Friedman, Delphine K. Farmer, John Seinfeld, Jeffrey R. Pierce, Shantanu Jathar, *Colorado State University*

2AC.4 11:00 **Aqueous SOA Formation from the Photo-oxidation of Vanillin: Direct Photosensitized Reactions and Nitrate-Mediated Reactions.** BEATRIX ROSETTE GO MABATO, Yan Lyu, Yan Ji, Yong Jie Li, Dan Dan Huang, Xue Li, Theodora Nah, Chun Ho Lam, Chak K. Chan, *City University of Hong Kong, China*

2AC.5 11:00 **Heterogeneous Reactivity of HCl on CaCO3 Aerosols at Stratospheric Temperature.** HAN N. HUYNH, V. Faye McNeill, *Columbia University*

2AC.7 11:15 **Photolysis of Atmospherically Relevant Monoterpene-derived Organic Nitrates.** YUCHEN WANG, Masayuki Takeuchi, Tianchang Xu, Siyuan Wang, Nga Lee Ng, *Georgia Institute of Technology*

2AC.8 11:15 **Increased Photochemical Sinks Help Balance the SOA Budget: Experimental Evidence and Modeling Results.** KELVIN BATES, James Cope, Tran Nguyen, Daniel Jacob, *Harvard University*

2AC.9 11:15 **Photolysis of Aqueous Atmospheric Aerosol Mimics.** MELISSA GALLOWAY, Jacqueline Sharp, Daisy Grace, Shiqing Ma, Joseph Woo, *Lafayette College*

2AC.11 11:30 **Variation in Organic Aerosol Volatility Derived from Combined Thermal Desorption and Chemical Composition Measurements in Different Environments across the Globe.** CLAUDIA MOHR, Wei Huang, Cheng Wu, Yvette Gramlich, Sophie Haslett, Joel A. Thornton, Felipe Lopez-Hilfiker, Ben H. Lee, Harald Saathoff, Xiaoli Shen, Ramakrishna Ramisetty, Linyu Gao, Junwei Song, Siegfried Schobesberger, Liine Heikkinen, Sara Blichner, Ilona Riipinen, *Stockholm University*

2AC.12 11:30 **Emissions and Secondary Formation of Air Pollutants From Modern Heavy-Duty Trucks in Real-World Traffic – Chemical Characteristics Using on-Line Mass Spectrometry.** LIYUAN ZHOU, Christian M. Salvador, Michael Priestley, Mattias Hallquist, Qianyun Liu, Chak K. Chan, Åsa M. Hallquist, *City University of Hong Kong, China*

2AP AEROSOL PHYSICS I

Carlos Larriba Andaluz and Xuemeng Chen, chairs

2AP.2 10:45 **Calculation of the Nanoparticle-Ion Attractive Collision Rate Coefficient by Continuum-Molecular Dynamics Hybrid Simulations.** TOMOYA TAMADATE, Takafumi Seto, Christopher J. Hogan, *University of Minnesota*

2AP.3 10:45 **The Study of Inelastic Collisions in Electrical Mobility by Coupling MD to Kinetic Theory Physical Gas Modelling.** CARLOS LARRIBA-ANDALUZ, Viraj Gandhi, *IUPUI*

2AP.4 11:00 **The Fractal Characteristics of Atmospheric Coated Soot: Implications for Morphological Analysis.** Jie Luo, Qixing Zhang, CHENCHONG ZHANG, Yongming Zhang, Rajan K. Chakrabarty, *University of Science and Technology of China*

2AP.5 11:00 **Modeling the Size-Dependent of Mass Absorption Cross-Section of Black Carbon Aggregates.** FENGSHAN LIU, Joel Corbin, Prem Lobo, Gregory Smallwood, *National Research Council Canada*

2AP.6 11:00 **Single Particle Light Scattering from Light Beams with Orbital Angular Momentum.** MATTHEW B. HART, Vasanthi Sivaprakasam, Ryan Lindle, Wenbo Sun, Abbie Watnik, *Naval Research Laboratory, Washington, DC*

2AP.7 11:15 **Direct Observation and Assessment of Phase States of Ambient and Lab-generated Sub-micron Particles upon Humidification.** ZEZHEN CHENG, Noopur Sharma, Kuo-Pin Tseng, Libor Kovarik, Swarup China, *Pacific Northwest National Laboratory*

2AP.8 11:15 **Next Generation UCR Chamber Minimizes Effect of Electrostatics on Particle Wall-loss.** CHEN LE, Qi Li, Don Collins, David R. Cocker III, *University of California, Riverside*

2AP.9 11:30 **Comparison of New Particle Formation (NPF) Events in Various Ambient Atmospheres.** HAEBUM LEE, Joonwoo Kim, Jiyeon Park, Young-Jun Yoon, Kihong Park, *Gwangju Institute of Science and Technology*

2AP.10 11:30 **Field Directed Assembly of Aerosol Nanoparticles in Free-molecular and Transition Regime.** PRITHWISH BISWAS, Pankaj Ghildiyal, George Mulholland, Michael Zachariah, *University of California, Riverside*

2CO COMBUSTION II

Francesco Carbone and Claire Fortenberry, chairs

2CO.1 10:45 **A Reactive Molecular Dynamics-based Exploration of Soot Inception Pathways in Combustion.** Khaled Mosharraf Mukut, Akaash Sharma, Eirini Goudeli, SOMESH ROY, *Marquette University*

2CO.2 10:45 **Achieving Sampling Parameter-Independent Measurements of Incipient Soot in Laminar Flames with High-Resolution Differential Mobility Analysis.** FARNAZ KHOSRAVI, Francesco Carbone, *University of Connecticut*

2CO.3 10:45 **Santoro Flame: The Volume Fraction of Soot Accounting for Its Morphology & Composition.** GEORGIOS A. KELESIDIS, Sotiris Pratsinis, *ETH Zurich, Switzerland*

2CO.4 11:00 **Retrieving Pre-factor and Fractal Dimension of a Single Soot Aggregate.** Divjyot Singh, LAURENCE LU, Alexei Khalizov, *New Jersey Institute of Technology*

2CO.5 11:00 **Turbulence Impacts upon nvPM Sizes.** MADHU SINGH, Akshay Gharpure, Randy Vander Wal, Prem Lobo, Joel Corbin, Gregory Smallwood, *Penn State University*

2CO.7 11:15 **Laboratory Evaluation of the Volatility of Nanoparticles Generated from Jet Engine Lubrication Oil.** NOBUYUKI TAKEGAWA, Anna Nagasaki, *Tokyo Metropolitan University*

2CO.8 11:15 **The Effect of Sodium-laden Solutions on Particulate Emissions from Gas Flares.** CAMERON ROTH, Bradley Conrad, Matthew Johnson, *Carleton University*

2CO.9 11:30 **Quantifying Smoke Detector Performance for Spacecraft Applications.** CLAIRE FORTENBERRY, Marit Meyer, Thomas Cleary, David Urban, Gary Ruff, *Universities Space Research Association*

2CO.10 11:30 **Characterization of Gas and Particle Emissions from Solid Waste Combustions.** XIAOLIANG WANG, Hatef Firouzkouhi, Matthew Claassen, Judith Chow, John Watson, Gerhard Fourie, Mabu Mamadi, *Desert Research Institute*

2RA REMOTE AND REGIONAL ATMOSPHERIC AEROSOL II

Bret Schictel and Pedro Campuzano-Jost, chairs

2RA.1 10:45 **Stationary and Mobile Measurements of NO2 Vertical Column Density at an Agricultural Site.** TAEWOONG GONG, Joonwoo Kim, Haebum Lee, Kihong Park, *Gwangju Institute of Science and Technology*

2RA.2 10:45 **Composition and Concentrations of Ambient PM in an Oil and Gas Production Region.** KRISTI MCPHERSON, Catherine Masoud, Nirvan Bhattacharyya, Kanan Patel, Leif Jahn, Pearl Abue, Daniel C. Blomdahl, Pawel K. Misztal, Lea Hildebrandt Ruiz, *University of Texas at Austin*

2RA.4 11:00 **Refining Ammonia Emissions Estimates with Satellite-based Observations Using a Novel Framework and an Air Quality Model.** CONGMENG LYU, Shannon Capps, Mark W. Shephard, Daven Henze, Matthew Lombardo, Shunliu Zhao, Amir Hakami, Steven Thomas, Jeremy Silver, Peter Rayner, *Drexel University*

2RA.5 11:00 **PM2.5 Characteristics in the Ammonia-Rich Agricultural Environment.** JOONWOO KIM, Haebum Lee, Taewoong Gong, Jiho Jang, Dahye Oh, Kihong Park, *Gwangju Institute of Science and Technology*

2RA.6 11:00 **Understanding Ambient Trends in Particle Phase Nitrate Contributions from Inorganic & Organic Species.** JESSICA HASKINS, Colette L. Heald, Douglas Day, Pedro Campuzano-Jost, Jose-Luis Jimenez, *Massachusetts Institute of Technology*

2RA.7 11:15 **Chemical Signatures of Fire and Urban Influenced Secondary Aerosol Formation in the Central Amazon.** EMILY FRANKLIN, Lindsay Yee, Rebecca Wernis, Gabriel Isaacman-VanWertz, Nathan Kreisberg, Robert Weber, Brett Palm, Weiwei Hu, Pedro Campuzano-Jost, Douglas Day, Paulo Artaxo, Rodrigo Souza, Jose-Luis Jimenez, Scot T. Martin, Allen Goldstein, *University of California, Berkeley*

2RA.8 11:15 **Characterizing the Atmospheric Processes of Brevetoxins in Sea Spray Aerosols Generated from Florida Red Tide.** KAREN SEM, Myoseon Jang, Zechen Yu, Richard Pierce, Patricia Blum, *University of Florida*

2RA.9 11:15 **New Particle Formation over the Western North Atlantic Ocean: Results from the NAAMES Field Campaign.** JIAOSHI ZHANG, Xianda Gong, Qian Xiao, Armin Wisthaler, Markus Müller, Sven Arne Philipp Schiller, Richard Moore, Luke Ziemba, Ewan Crosbie, Ryan Bennett, Jian Wang, *Washington University in St. Louis*

2RA.10 11:30 **A Global-scale Mineral Dust Equation.** XUAN LIU, Jay R. Turner, Randall Martin, Bret Schichtel, Jenny Hand, *Washington University in St. Louis*

2RA.11 11:30 **The Impact of Saharan Dust Outbreaks on Urban Aerosol Mass and Major Elements Size Distributions and Corresponding Inhaled Dose.** KONSTANTINOS ELEFTHERIADIS, Maria Gini, Manousos Ioannis Manousakas, Andreas Germanos Karydas, *NCSR Demokritos, Athens, Greece*

2RA.12 11:30 **Indoor Environment Air Quality Evaluation in a High Elevation Metropolitan Area in the Andes.** RUBEN MAMANI-PACO, Mihai Chiruta, *Atmospheric Physics, Univ. Mayor de San Andrés La Paz Bolvia*

2SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 II

William Lindsley and Linsey Marr, chairs

2SI.1 10:45 **Recovery of Airborne SARS-CoV-2 Virus Surrogate Captured by Filtration: Effect of Sampling and Storage Stress.** NIRMALA THOMAS MYERS, Taewon Han, Mei-Ling Li, Gary Brewer, Martin Harper, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

2SI.2 10:45 **Exploring Approaches to Characterize Respiratory Droplets >20 µm Diameter.** JOSHUA HARRISON, Henry Symons, Justice Archer, Jonathan P. Reid, Bryan R. Bzdek, *University of Bristol*

2SI.3 10:45 **High-Resolution Detection of Aerosols Produced During Breathing and Speech with an Electrical Low-Pressure Impactor.** PAUL TUMMINELLO, Caleb Everett, Marva Seifert, Chantal Darquenne, Jonathan Slade, *University of California San Diego*

2SI.4 11:00 **Filtration Efficiency and Inhalation Resistance of Cloth Mask Combinations and the Effects of Washing and Drying On Performance.** SUMIT SANKHYAN, Karen Heinselman, Peter Ciesielski, Hannah Teed, Teresa Barnes, Sameer Patel, Marina Vance, *University of Colorado Boulder*

2SI.5 11:00 **Practical Considerations of Cloth Facemask Performance Versus Insert Areal Coverage.** JAMES RADNEY, Christopher Zangmeister, *National Institute of Standards and Technology*

2SI.6 11:00 **How You Test Matters: Respiratory Filtration Testing Using Common Aerosol Instruments.** TIM JOHNSON, Greg M. Olson, Justin S. Koczak, Andrea J. Tiwari, *TSI Incorporated*

2SI.7 11:15 **Optimized Hospital Ventilation to Reduce Virus Aerosol Transmission.** MEIYI ZHANG, Tatiana Baig, Brooke Smith, Maria King, *Texas A&M University*

2SI.8 11:15 **Effectiveness of a Negative Pressure Airway Chamber in Reducing the Exposure of Healthcare Providers to Aerosol Generating Medical Procedures.** ALBERTO BALDELLI, Kevin Heieis, Steven Rogak, Andrew Poznikoff, Matthias Görges, Robert Purdy, *The University of British Columbia*

2SI.9 11:15 **Aerosolisation and Transmission of SARS-Cov-2 in Healthcare Settings (AERATOR).** Florence Gregson, Sadiyah Sheikh, Fergus Hamilton, Mark Gormley, Jules Brown, Nick Maskell, Bryan R. Bzdek, JONATHAN P. REID, *University of Bristol, U.K.*

2SI.10 11:30 **Lethality Caused by Small Particle Aerosols of H5N1 Influenza Virus in Cynomolgus Macaques Is Highly Dose Dependent.** DOUGLAS REED, Katherine O'Malley, Mengying Xia, Morgan Midgett, Emily Olsen, Gwenddolen Kettenburg, Michelle Marti, Priscilla da Silva Castanha, Jacqueline Corry, Masaru Kanekiyo, Barney Graham, Simon Barratt-Boyes, *University of Pittsburgh*

2SI.11 11:30 **Presence of SARS-CoV-2 Aerosol in Homes of COVID 19 Patients.** GEDIMINAS MAINELIS, Robert Laumbach, Kathleen Black, Nirmala Thomas Myers, Pamela Ohman-Strickland, Shahnaz Alimokhtari-V, Adriana De Resende, Alicia Legard, Leonardo Calderón, Shirin Hastings, Howard Kippen, *Rutgers, The State University of New Jersey*

2SI.12 11:30 **Disease Presentation is Dose-Dependent in a Nonhuman Primate Model of Inhalational COVID-19.** PAUL DABISCH, Katie Beck, Jennifer Biryukov, Jordan Bohannon, John Yeager, Brian Green, Jeremy Boydston, *BNBI / DHS NBACC*

Monday 11:45 AM - 1:00 PM
Lunch Break

Monday 1:00 PM - 2:00 PM
Session 3: Platform

3AC AEROSOL CHEMISTRY III

Rodney Weber and Celia Faiola, chairs

3AC.1 10:15 **Airborne Microplastics in a Suburban Location in the Desert Southwest.** KANCHANA CHANDRAKANTHAN, Pierre Herckes, *Arizona State University*

3AC.2 1:00 **Contribution of Organic Aerosol to PM2.5 in Bogotá, Colombia.** KAREN BALLESTEROS, Ricardo Morales Betancourt, Amy P. Sullivan, *Universidad de los Andes*

3AC.4 1:15 **Accelerated Chemical Reaction in Ultrafine Droplets: Effect of Droplet Size on Product Formation.** YAO ZHANG, Murray Johnston, *University of Delaware*

3AC.5 1:15 **Influence of Structure and Functionality on Uptake of Semivolatile Organic Compounds to Surfaces.** GRAHAM FRAZIER, Gabriel Isaacman-VanWertz, John Morris, *Virginia Tech*

3AC.7 1:30 **Kinetics and Products of Heterogeneous Hydroxyl Radical Oxidation of Isoprene Epoxydiol-Derived SOA.** JIN YAN, Yue Zhang, Yuzhi Chen, N. Cazimir Armstrong, Zhenfa Zhang, Avram Gold, Andrew Lambe, Barbara Turpin, Andrew Ault, Jason Surratt, *University of North Carolina at Chapel Hill*

3AC.8 1:30 **Condensed Phase Reactions of Carboxynitrates with Alcohols to Form Esters: Measurements of Kinetics and Equilibria.** HANNAH MABEN, Paul Ziemann, *University of Colorado Boulder*

3AC.9 1:30 **Multiphase Heterogeneous OH Oxidation of a Long Chain Alkyl Sulfate.** SZE IN MADELEINE NG, Rongshuang Xu, Man Nin Chan, *The Chinese University of Hong Kong*

3AC.10 1:45 **Chemical Characterization of Stratospheric Particles with the Next Generation of Airborne Laser Mass Spectrometer: PALMS-NG.** JUSTIN JACQUOT, Xiaoli Shen, Kyra Slovacek, Gregory Schill, Michael Lawler, David Thomson, Karl Froyd, Daniel Murphy, Daniel Cziczo, *Purdue University*

3AC.11 1:45 **Characterization of Hydroxymethanesulfonate (HMS) and Sulfate in Fairbanks, Alaska using Ion Chromatography (IC).** KAYANE DINGILIAN, Michael Battaglia, James Campbell, Jingqiu Mao, Rodney J. Weber, *Georgia Institute of Technology*

3AC.12 1:45 **Secondary Organic Aerosol Formation from Photooxidation of Acyclic Terpenes in an Oxidation Flow Reactor.** SHAN GU, Farzaneh Khalaj, Véronique Perraud, Celia Faiola, *University of California, Irvine*

3AP AEROSOL PHYSICS II

Hallie Chelmo and Dana McGuffin, chairs

3AP.1 **Possible, Impossible and Expected Diameters and Flow Rates in Droplet Aerosols.** MAKSIM MEZHERICHER,

1:00 Howard A. Stone, *Princeton University*

3AP.2 1:00 **Process Level Modeling of Vertically Resolved New-particle Formation at the Southern Great Plains Observatory.** O'DONNELL SAMUEL, James Smith, Ali Akherati, John Shilling, Fan Mei, Hubbe John, Stephen Springston, Joel A. Thornton, Siegfried Schobesberger, Emma D'Ambro, Ben H. Lee, Charles Long, Chongai Kuang, Jerome Fast, Anna Hodshire, Charles He, Michael J. Lawler, Jeffrey R. Pierce, Shantanu Jathar, *Colorado State University*

3AP.3 1:00 **A Machine Learning Based Aerosol Dynamics Model for Log-Normal Aerosols.** ONOCHIE OKONKWO, Rahul Patel, Ravindra Gudi, Pratim Biswas, *University of Miami*

3AP.4 1:15 **Multiple Wavelength Digital Holography for Color Micro-particle Imaging.** RAMESH GIRI, Gorden Videen, Matthew J Berg, *Kansas State University*

3AP.5 1:15 **Design of a Multi-Angle Light Scattering Setup Covering the Whole Scattering Angle Range (0.32° to 177.6°) and Interpretation of Light Scattering Data Under Q-Space Analysis.** PRAKASH GAUTAM, Justin Maughan, Christopher Sorensen, *Kansas State University*

3AP.6 1:15 **Morphological Characterization and Classification of Aerosol Aggregates through Multispectral Light Scattering Simulations.** STEPHEN HOLLER, Jaeda Mendoza, Emily Shipley, Sequoyah Waters, Kevin Aptowicz, *Fordham University*

3AP.7 1:30 **Super-droplet Method to Simulate Lagrangian Microphysics of Fallout Particles.** DANA MCGUFFIN, Donald Lucas, Joe Morris, Kim Knight, *Lawrence Livermore National Laboratory*

3AP.9 1:30 **Sintering of Lignin-based Particles During Fast Pyrolysis: A Kinetic Study Using Furnace Aerosol Reactor And Tandem Differential Mobility Analysis.** SUJIT MODI, Onochie Okonkwo, Hao Zhou, Pratim Biswas, *Washington University in St. Louis*

3AP.10 1:45 **Prediction of Ion Mobility at High E/n Using the Two-Temperature Theory to Maximize Selectivity.** VIRAJ GANDHI, Carlos Larriba-Andaluz, *IUPUI*

3AP.11 1:45 **Investigating Homogeneous Nucleation of Propane and N-Butane in Supersonic Nozzle Expansions.** JIAQI LUO, Barbara Wyslouzil, *The Ohio State University*

3AP.12 1:45 **Investigations on Air Ion Properties and Their Connections to Atmospheric Radioactivity and Electricity.** XUEMENG CHEN, Heikki Junninen, Jussi Paatero, Susana Barbosa, Joonas Vanhanen, Tuukka Petäjä, Veli-Matti Kerminen, Markku Kulmala, Carlos Larriba-Andaluz, *University of Tartu / IUPUI*

3IA INDOOR AEROSOLS I

Sumit Sankhyan and Stephanie Parsons, chairs

3IA.2 1:00 **Successfully Lowering Exposure to Air Pollutants in Public Transport.** BORIS GALVIS, Ricardo Morales Betancourt, Daniela Mendez, Yadert Contreras Barbosa, Alejandra Montejo-Barato, Diego Roberto Rojas-Neisa, *Universidad de La Salle*

3IA.3 1:00 **Assessment of PM2.5 Concentration and Transport in Indoor Environments Using Low-Cost Sensors.** SUMIT SANKHYAN, Julia Witteman, Steven Coyan, Sameer Patel, Marina Vance, *University of Colorado Boulder*

3IA.4 1:15 **Estimation of PM2.5 Exfiltration Factor from Biomass Cooking.** Jyoti Jyotsana, Gupta Anurag, CHIMURKAR NAVINYA, Harish C Phuleria, *Indian Institute of Technology Bombay*

3IA.5 1:15 **Nerves Impact Following Short-Term Exposure to Cooking Ultrafine Particles.** Motahareh Naseri, MEHDI AMOUEI TORKMAHALLEH, Mojtaba Jozizadeh, Sahar Sadeghi, Reza Khanbabaie, Flemming Cassee, *Nazarbayev University, Nur-Sultan, Kazakhstan*

3IA.6 1:15 **Kitchen Area and Personal Exposure Measurements of Carbon Monoxide and Particulate Matter in Rural and Urban Malawi.** STEPHANIE PARSONS, Joseph Pedit, Andrew Grieshop, Pamela Jagger, *North Carolina State University*

3IA.7 1:30 **Insights into the Strategies of Reducing the Aerosol Particle Concentration in Indoor Environments Using Mobile Air Purifiers - Experimental and Numerical Analyzes.** ADRIAN TOBISCH, Lukas Springsklee, Lisa-Franziska Schaefer, Nico Sussmann, Martin Lehmann, Raoul Zoellner, Jennifer Niessner, *Heilbronn University of Applied Sciences*

3IA.8 1:30 **Effect of Low-Cost Air Purification on Aerosol Dispersion and Droplet Deposition in a Conference Room.** LINHAO LI, Stephanie Eilts, Zachary Pope, Meng Kong, Clay Maranville, John Jaranson, John Elson, Rainer Vogt, Christopher J. Hogan, *Well Living Lab*

3IA.9 1:30 **Using a High-Flow Extractor to Reduce Aerosol Exposure in Medical Environments.** BOWEN DU, Tianyuan Li, Clyde Matava, Vincent Collard, Simon Denning, John Fiadjoe, Pierre Fiset, Thomas Engelhardt, Jeffrey Siegel, *University of Toronto*

3IA.10 1:45 **Children's PM2.5 Indoor Exposures in Mongolian Kindergartens.** ZHIYAO LI, Munkhbayar Buyan, Rufus Edwards, Bat-Amgalan Gantumur, Alex Heikens, Jay R. Turner, *Washington University in St. Louis*

3IA.11 1:45 **Particle Emissions from Fused Filament Fabrication 3D Printers and Their Impacts on Indoor Air Quality in School Environments.** QIAN ZHANG, Aika Davis, Marilyn Black, *Underwriters Laboratories Inc.*

3IA.12 1:45 **Investigation of the Size Resolved Fluorescent Bioaerosol in School Buildings with and without Upper-Room UVGI.** CHUNXIAO SU, Josephine Lau, *University of Shanghai for Science and Technology*

3SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 III

Gedi Mainelis and Kevin Fennelly, chairs

3SI.1 1:00 **Viral Shedding from Persons Infected with SARS-CoV02: Aerosols, Droplet Spray, and Fomites.** Oluwasanmi Adenaiye, Jianyu Lai, Filbert Hong, Sheldon Tai, Jennifer German, Somayeh Youssefi, Paul Jacob Bueno de Mesquita, Barbara J. Albert, Tianzhou Ma, Stuart Weston, Matthew B. Frieman, DONALD K. MILTON, *School of Public Health, University of Maryland, College Pk*

3SI.2 1:00 **Measurements of Exhaled SARS-CoV-2 and Human Respiratory Droplets Using an Infectious Aerosol Capture Mask.** JOSHUA SANTARPIA, Nicholas Markin, Steven Lisco, Gabriel Lucero, Danielle Rivera, Vicki Herrera, Sarah Stein, *University of Nebraska Medical Center*

3SI.3 1:00 **SARS-CoV-2 RNA Contaminated HVAC Filters and Indoor Surfaces in the Built Environment during Both Isolation and Quarantine Stages.** JIN PAN, Seth Hawks, Aaron Prussin II, Nisha Duggal, Linsey Marr, *Virginia Tech*

3SI.4 1:15 **Aerosol Generation from Flute Playing.** KARIN ARDON-DRYER, Lisa Garner Santa, Michael San Francisco, Emily Bailey, *Department of Geosciences, Texas Tech University*

3SI.5 1:15 **Quantification of Expiratory Particulate Matter Generated from Singing, Speaking, Breathing, Cough and Playing of Musical Instruments.** JUSTICE ARCHER, Henry Symons, Natalie Watson, Christopher Orton, Pallav Shah, James Calder, Bryan R. Bzdek, Declan Costello, Jonathan P. Reid, *University of Bristol*

3SI.6 1:15 **Bioaerosols in the Performing Arts: Quantifying Aerosol Emissions from Speech, Song, and Wind Instruments.** Kristen Fedak, Nicholas Good, Christian L'Orange, Ky Tanner, Amy Keisling, Emily Morton, Dan Goble, Rebecca Phillips, JOHN VOLCKENS, *Colorado State University*

3SI.7 1:30 **Simulations of Infection Risk for Indoor Transmission of COVID-19.** Gregoire Labat, Haider Allawi, Isaac Flores Espinoza, SHERYL EHRMAN, *San Jose State University*

3SI.8 1:30 **Respiratory Droplet Emissions and Transport Estimates Using CFD for a Nine-Person, Cubicle-Style Office.** Sohaib Obeid, Mahender Singh Rawat, Paul White, Jacky Rosati Rowe, Andrea Ferro, GOODARZ AHMADI, *Clarkson University*

3SI.9 1:30 **Design-Aided Mitigation of the Spread of Virus Aerosols.** SUNIL KUMAR, Maria King, *Texas A&M University*

3SI.10 1:45 **Quantification of Expiratory Aerosol and Droplets Produced during Exercise.** Henry Symons, Justice Archer, Christopher Orton, Natalie Watson, James Calder, Declan Costello, James Hull, Pallav Shah, BRYAN R. BZDEK, Jonathan P. Reid, *University of Bristol*

3SI.11 1:45 **Pathogens and Size Characterization of Aerosols Generated during Aerosol Generating Procedure in COVID 19 Positive Patient Intensive Care Units.** SHRUTI CHOUDHARY, Tracey Bach, Meghan Wallace, Carey-Ann Burnham, Michael Durkin, Jennie Kwon, Hilary Babcock, Stephen Liang, Pratim Biswas, *Washington University in St Louis*

3SI.12 1:45 **Detection of Non-infectious SARS-CoV-2 from Aggregated Samples of Bioaerosols Produced during Expiratory Activities.** Tyler J. Johnson, ROBERT T. NISHIDA, Ashlesha P. Sonpar, James Lin, Kimberley Watson, Stephanie Smith, John Conly, David Evans, Jason S. Olfert, *University of Alberta*

3ST SPECIAL SYMPOSIUM: TRANSLATING AEROSOL RESEARCH FOR SOCIETAL IMPACT: SCIENCE COMMUNICATION AND PUBLIC OUTREACH I

Andrew Grieshop and Marina Vance, chairs

3ST.1 1:00 **Droplets and Aerosols in Infectious Disease Transmission: History of the 5-µm Cutoff and the 6' Rule.** Katherine Randall, E. Thomas Ewing, LINSEY MARR, Jose-Luis Jimenez, Lydia Bourouiba, *Virginia Tech*

3ST.2 1:00 **Ventilation in Schools and Universities.** V. FAYE MCNEILL, Richard Corsi, J. Alex Huffman, Do Young Maeng, Shelly Miller, Nga Lee Ng, Atila Novoselac, Paula Olsiewski, Krystal Godri Pollitt, Rachel Segalman, Alex Sessions, Todd Squires, Sabrina Westgate, *Columbia University*

3ST.3 1:00 **An Openly Available Database for Public Education and to Combat Misinformation about Respiratory Aerosols.** J. ALEX HUFFMAN, *University of Denver*

3ST.4 1:15 **Building an Aerosol Sensing Sensor Network and Inspiring Citizen Scientists.** KERRY KELLY, Anthony Butterfield, Wei Xing, Katrina Le, Tofigh Sayahi, James Moore, Tom Becnel, Miriah Meyer, Ross Whitaker, Pierre-Emmanuel Gaillardon, *University of Utah*

3ST.5 1:15 **Social Science in Community Air Monitoring.** ELISA LAZZARINO, Sherri Hunt, *EPA*

3ST.6 1:15 **Multi-Modal Data Sharing and Synthesis for Low-Cost Sensors.** ALIAKSEI HAURYLIUK, R. Subramanian, Carl Malings, Ashley Angulo, Randy Sargent, Ana Hoffman, Albert Presto, *Carnegie Mellon University*

3ST.7 1:30 **Engaging Residents in Community Science to Address Air and Noise Pollution Exposure.** MARISA WESTBROOK, Nicholas Clements, Esther Sullivan, *University of Colorado Denver*

3ST.8 1:30 **IndoorChem: Building a Science Community in the Chemistry of Indoor Environments.** MARINA VANCE, Delphine K. Farmer, Julia Bakker-Arkema, Sameer Patel, *University of Colorado Boulder*

3ST.9 1:30 **Exploding Interest: Air Quality Messaging during and after a Refinery Explosion.** PETER F. DECARLO, *Johns Hopkins University*

3ST.10 1:45 **Historic Redlining and Modern Disparities in U.S. Urban Air Pollution Exposure.** HALEY LANE, Julian Marshall, Rachel Morello-Frosch, Joshua S. Apte, *University of California, Berkeley*

3ST.11 1:45 **Air Quality Monitoring with Low-Cost Sensors in Greater Springfield, MA: Citizen Science and Air Quality Monitoring.** Dong Gao, Mahea Heimuli, Kayla Fennell, Anna Woodroof, Mark Chandler, David Bloniarz, Alexander Sherman, Samantha Hamilton, Yoni Glogower, Sarita Hudson, KRYSTAL GODRI POLLITT, *Yale University*

Monday 2:00 PM - 4:00 PM
Chatroom Open

Tuesday

Tuesday 8:00 AM - 9:15 AM
Plenary II: Friedlander Lecture

8:00 **Friedlander Lecture: Electronic Cigarette: The Knowns, Known Unknowns, and Unknown Unknowns** Yifang Zhu,

University of California, Los Angeles

Moderator Andrea Ferro, *Clarkson University*

9:00 **Friedlander Award Presentation** Sheryl Ehrman, Awards Committee Chair, *San Jose State University*

9:05 **Aerosol Science and Technology, Outstanding Publication Award** Jonathan Reid, Editor-in-Chief, Aerosol Science & Technology, *University of Bristol*

Tuesday 9:30 AM - 10:30 AM
Session 4: Platform

4AC AEROSOL CHEMISTRY IV

Miriam Freedman and Coty Jen, chairs

4AC.1 9:30 **Modeling Sulfuric Acid Nucleation of Complex Mixtures.** JACK JOHNSON, Sandra Fomete, Coty Jen, *Carnegie Mellon University*

4AC.2 9:30 **AMORE: Automated Mechanism Reduction in Atmospheric Chemistry.** FORWOOD WISER, Siddhartha Sen, Daniel Westervelt, Daven Henze, Arlene Fiore, V. Faye McNeill, *Columbia University*

4AC.3 9:30 **Reactive Uptake of Monoethanolamine (MEA) by Sulfuric Acid Particles.** XIAOMENG TIAN, Yangxi Chu, Chak K. Chan, *City University of Hong Kong, China*

4AC.4 9:45 **Dynamic Surface Tension of Surfactant Containing Droplets by the Oscillating Droplet Method.** LARA LALEMI, Bryan R. Bzdek, Rachael E.H. Miles, *University of Bristol*

4AC.5 9:45 **Optical Properties of Brown Carbon Aerosol in Levitated Droplets.** CHELSEA PRICE, James F. Davies, *University of California Riverside*

4AC.6 9:45 **Surface Tension Depression of Aqueous-Phase Glyoxal/Ammonium Sulfate Hanging-Droplet Aerosol Mimics via Direct Photochemistry.** Daphna Fertil, JOSEPH WOO, *Lafayette College*

4AC.7 10:00 **Comparison of Hygroscopic Properties of Fresh and Aged Rice Straw and Pine Stem Burning Particles.** ILHWA SEO, Minhan Park, Kihong Park, *Gwangju Institute of Science and Technology*

4AC.9 10:00 **Modeling the Enhanced Growth by α-Pinene Ozonolysis of Wet over Dry Ammonium Sulfate Seed Particles.** MICHAEL S. TAYLOR, Devon Haugh, Murray Johnston, *University of Delaware*

4AC.10 10:15 **Initial pH Governs Secondary Organic Aerosol Viscosity and Morphology after Uptake of Isoprene Epoxydiols (IEPOX).** ZIYING LEI, Yuzhi Chen, Yue Zhang, Madeline Cooke, Isabel Ledsky, N. Cazimir Armstrong, Nicole Olson, Zhenfa Zhang, Avram Gold, Jason Surratt, Andrew Ault, *University of Michigan*

4AC.11 10:15 **Effect of Solution Activity on Regioselectivity of Sulfate Addition in Acid-Catalysed Aqueous Reactions of IEPOX.** SARAH SUDA PETTERS, Tianqu Cui, Zhenfa Zhang, Avram Gold, V. Faye McNeill, Jason Surratt, Barbara Turpin, *University of North Carolina at Chapel Hill*

4AC.12 10:15 **Direct Measurement of the pH of Aerosol Particles.** EMMA TACKMAN, Miriam Freedman, *The Pennsylvania State University*

4IA INDOOR AEROSOLS II

Clara Eichler and Peter DeCarlo, chairs

4IA.1 9:30 **Characterizing Ambient Droplet Aerosols on the International Space Station.** KARL CARDIN, Marit Meyer, Raúl Bayoán Cal, Mark Weislogel, *Portland State University*

4IA.2 9:30 **Aerosol Concentration Signatures on the International Space Station from a Real-time, Long Term Monitor.** MARIT MEYER, Benjamin Sumlin, *NASA Glenn Research Center*

4IA.3 9:30 **Novel Control Strategies for Indoor Filtration.** TIANYUAN LI, Jeffrey Siegel, *University of Toronto*

4IA.4 9:45 **Impact of Indoor Physicochemical Phenomena on Volatile Chemical Products' Emissions from Indoor Spaces.** AMIRASHKAN ASKARI, Arthur W. H. Chan, *University of Toronto*

4IA.5 9:45 **Kinetic Multilayer Modeling of Indoor Surface Chemistry: Organic Film Formation, Bleach Cleaning Chemistry and Surface Interactions.** MANABU SHIRAIWA, Pascale Lakey, *University of California, Irvine*

4IA.6 9:45 **Sampling of Per- and Polyfluoroalkyl Substances (PFAS) with Residential Air Filters.** CLARA EICHLER, Naomi Chang, Jiaqi Zhou, Glenn Morrison, Jason Surratt, Barbara Turpin, *UNC-Chapel Hill*

4IA.7 10:00 **Nitrogen-Containing Emissions from Cooking: Mechanisms and Impacts on Indoor and Outdoor Air.** JENNA DITTO, Jonathan Abbatt, Arthur W. H. Chan, *University of Toronto*

4IA.8 10:00 **Measuring and Modeling the Behavior of VOCs on Indoor Wood Surfaces.** ANNA ZIOLA, Paul Ziemann, *University of Colorado Boulder*

4IA.9 10:00 **Humidity and the Uptake of a Model Organic Peroxide on Naturally Soiled Indoor Window Surfaces.** MARC WEBB, Liyong Cui, Karsten Baumann, Jason Surratt, Glenn Morrison, Joanna Atkin, Barbara Turpin, *UNC-Chapel Hill*

4IA.10 10:15 **Moisture Influences Both Fungal Gene Expression and MVOC Emissions from Carpet and Dust.** SARAH R. HAINES, Emma C. Hall, Pawel K. Misztal, Allen Goldstein, Rachel I. Adams, Karen C. Dannemiller, *The Ohio State University*

4IA.11 10:15 **Processes and Sources Determining the Composition of Indoor Aerosols.** PETER F. DECARLO, Erin Katz, Anita Avery, Michael Waring, David Lunderberg, Allen Goldstein, Wyatt Brown, Jose-Luis Jimenez, *Johns Hopkins University*

4IA.12 10:15 **Measurement of Aerosol Volatility Using a Modified Piezoelectric Instrument.** LANCE WALLACE, Wayne Ott, *Stanford University*

4IM INSTRUMENTATION & METHODS I

Zezhen Cheng and Taekyu Joo, chairs

4IM.1 9:30 **In-Silico Investigation of Electron Ionization Mass Spectra of Nitro-Heterocyclic Chromophores in Brown Carbon Aerosols.** MEGAN WOODS, Kunpeng Chen, Nilofar Raeofy, Roya Bahreini, Ying-Hsuan Lin, *University of California, Riverside*

4IM.2 9:30 **Development of a Higher Mass Resolution Aerosol Chemical Speciation Monitor.** PHILIP CROTEAU, Benjamin A. Nault, Leah Williams, Manjula Canagaratna, Harald Stark, Donna Sueper, John Jayne, Douglas Worsnop, *Aerodyne Research, Inc.*

4IM.3 9:30 **Insights into Thermal Fractions of Ambient and Combustion Aerosols in Thermal-Optical Carbon Analysis by Photoionization Mass Spectrometry (TOCA--PIMS).** Hendryk Czech, L.W. Antony Chen, Kevin Schnepel, Toni Miersch, Christian Gehm, Patrick Martens, Judith Chow, John Watson, Sven Ehlert, Martin Rigler, RALF ZIMMERMANN, *Helmholtz Centre Munich and University of Rostock*

4IM.4 9:45 **Detailed Characterization of Secondary Organic Aerosol Composition Using Multiple Mass Spectrometric Techniques.** ERIK HELSTROM, Abigail Koss, Jordan Krechmer, Manjula Canagaratna, Frank Keutsch, Alexander Zaytsev, Jesse Kroll, *MIT*

4IM.5 9:45 **Non-Targeted Screening Approach for Biomass Combustion Organic Aerosol Composition.** THUSITHA DIVISEKARA, Simeon Schum, Lynn Mazzoleni, *Michigan Technological University*

4IM.6 9:45 **Aerosol Mass Spectrometer Quantification of Cooking Organic Aerosol Indoors and Implications for Outdoor Reduced Aerosol.** Erin Katz, Hongyu Guo, Pedro Campuzano-Jost, Douglas Day, Wyatt Brown, Erin K. Boedicker, Matson A. Pothier, David Lunderberg, Sameer Patel, Kanan Patel, Patrick Hayes, Anita Avery, Lea Hildebrandt Ruiz, Allen Goldstein, Marina Vance, Delphine K. Farmer, Jose-Luis Jimenez, PETER F. DECARLO, *Johns Hopkins University*

4IM.7 10:00 **Potential Underestimation of Particulate Organic Nitrate Concentration by an Aerosol Mass Spectrometer.** MASAYUKI TAKEUCHI, Yuchen Wang, Benjamin A. Nault, Manjula Canagaratna, Nga Lee Ng, *Georgia Institute of Technology*

4IM.8 10:00 **Optimizing a Pressure-controlled Inlet (PCI) Coupled with a PM2.5 Lens for Aircraft Measurements with the Aerodyne Aerosol Mass Spectrometer (AMS) in the Lower Stratosphere.** DONGWOOK KIM, Pedro Campuzano-Jost, Hongyu Guo, Da Yang, Mark Kanaparthi, Suresh Dhaniyala, Leah Williams, John Jayne, Douglas Worsnop, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*

4IM.9 10:00 **A New Method to Quantify Particulate Sodium and Potassium Salts (Sulfate, Nitrate, and Chloride) by Thermal Desorption Aerosol Mass Spectrometry.** YUYA KOBAYASHI, Nobuyuki Takegawa, *Tokyo Metropolitan University*

4IM.11 10:15 **Characterization of Organic Aerosol Relative Ionization Efficiency for the Aerosol Mass Spectrometer and Aerosol Chemical Speciation Monitor.** BENJAMIN A. NAULT, Philip Croteau, Leah Williams, Manjula Canagaratna, *Aerodyne Research, Inc.*

4IM.12 10:15 **A Searchable Database and Mass Spectral Comparison Tool for Aerosol Mass Spectrometer (AMS).** SOHYEON JEON, Michael Walker, Donna Sueper, Anne Handschy, Douglas Day, Jose-Luis Jimenez, Brent Williams, *Washington University in St. Louis*

4SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 IV

Joshua Santarpia and Don Milton, chairs

4SI.1 9:30 **Evaluating the Decay of SARS-CoV-2 Aerosols: An Overview of Methods, Results, and Remaining Knowledge Gaps.** MICHAEL SCHUIT, Paul Dabisch, *BNBI / DHS NBACC*

4SI.2 9:30 **Medium Scale Wind Tunnel Testing of Aerosolized Coronavirus Collection and Inactivation in Recirculating Air Purification Systems.** YUECHEN QIAO, My Yang, Ian Marabella, Devin McGee, Bernard Olson, Montserrat Torremorell, Christopher J. Hogan, *University of Minnesota*

4SI.3 9:30 **Viable Virus Transport in Ventilation Airflow.** TATIANA BAIG, Maria King, *Texas A&M University*

4SI.4 9:45 **Effects of Ventilation Strategy and Social Distancing on Inhalation Exposure to Airborne Respiratory Aerosols.** GEN PEI, Mary Taylor, Donghyun Rim, *Penn State University*

4SI.5 9:45 **Comparison of CFD Model and One-Compartment Materials Balance Model for Predicting 8-Hr Exposure to Pathogen-Laden Expiratory Droplets in a Two-Person Office.** MAHENDER SINGH RAWAT, Sohaib Obeid, Paul White, Jacky Rosati Rowe, Goodarz Ahmadi, Andrea Ferro, *Clarkson University*

4SI.6 9:45 **Synergies Between Indoor and Outdoor Air Quality Monitoring Tools in a Home-Working Environment.** Stefano Natali, MIHAI CHIRUTA, *AerosolWorks LLC, Madison, Wisconsin, USA*

4SI.7 10:00 **Feasibility of a High-Volume Filter Sampler for Detecting SARS-Cov-2 RNA in COVID-19 Patient Rooms.** KAMALJEET KAUR, Amanda Wilson, Rachael Jones, Kerry Kelly, *University of Utah*

4SI.8 10:00 **Quantifying SARS-CoV-2 Infectious Particulate Exposure Risk, Mixing, and Removal Using DNA-Tagged and Real-Time Fluorescent PSL Microsphere Tracers in Wide-Bodied Boeing 777 and 767 Airframes.** SEAN KINAHAN, David Silcott, Blake Silcott, Ryan Silcott, Peter Silcott, Braden Silcott, Steven Distelhorst, Vicki Herrera, Danielle Rivera, Kevin Crown, Gabriel Lucero, Joshua Santarpia, *National Strategic Research Institute*

4SI.9 10:00 **Real-Time Space-Resolved Monitoring of Aerosol Distribution in Operating Rooms and Intensive Care Units.** KAITLYN GLENN, Jiayang He, Robert Rochlin, Abhyjot Pandher, Ching-Hsuan Huang, Joelle Segovia, Bailey Deck, Selina Teng, James Hecker, Igor Novosselov, *University of Washington*

4SI.10 10:15 **Respirator and Face Mask Particle Filtration Efficiency: Experimental Comparison of Test Methods.** JOEL CORBIN, Gregory Smallwood, Ian Leroux, Jalal Norooz Oliaee, Fengshan Liu, Richard Green, Nathan F. Murnaghan, Timothy Sipkens, Triantafillos Koukoulas, Prem Lobo, *National Research Council Canada*

4SI.11 10:15 **Effect of Valved and Unvalved N95 Respirators and Face Coverings on Exhaled Particles.** ANDREW VINER, Christine McCool, David Buckley, Nicole McCullough, *3M*

4SI.12 10:15 **Assessing the Effectiveness of Facemask Filter Materials Using DEHS Aerosol and the ELPI+.** BORIS GALVIS, Nestor Rojas, David Sierra, Carlos Sanchez, Bernal Camilo, Andres Monroy, *Gesoltec s.a.s*

4ST SPECIAL SYMPOSIUM: TRANSLATING AEROSOL RESEARCH FOR SOCIETAL IMPACT: SCIENCE COMMUNICATION AND PUBLIC OUTREACH II

Rachel O'Brien and Alex Huffman, chairs

4ST.1 9:30 **Communication of Real-Time Air Quality by Blending Model, Regulatory Monitor, and Low-Cost Sensor Data.** Nico Schulte, Xiang Li, Jo Kay Ghosh, Philip Fine, SCOTT A. EPSTEIN, *South Coast Air Quality Management District*

4ST.2 9:30 **Air Partners: Community-Driven Air Monitoring, Mitigation, and Collaborative Governance in Boston, MA.** SCOTT HERSEY, Allison Busa, Abigail Fry, Maia Materman, Megan Ku, Miranda McMillen, Francelis Morillo Suarez, Eben Cross, David Hagan, *Franklin W. Olin College of Engineering*

4ST.3 9:30 **An Educational Toolkit to Ensure the Successful Operation and Use of Air Quality Sensors by the Public.** ASHLEY COLLIER-OXANDALE, Vasileios Papapostolou, Brandon Feenstra, Berj Der Boghossian, Andrea Polidori, *South Coast Air Quality Management District*

4ST.4 9:45 **Environmental Justice Analysis for Six Future Energy Scenarios in California.** YITING LI, Michael Kleeman, *University of California, Davis*

4ST.5 9:45 **The NASA Multi-Angle Imager for Aerosols (MAIA): Enhancing Societal Impact through Early Community Engagement.** ABIGAIL NASTAN, David Diner, *Jet Propulsion Laboratory, Pasadena, CA*

4ST.6 9:45 **Global Climate, Environmental, and Health Benefits of Replacing Traditional Solid Fuels with Liquified Petroleum Gas.** EMILY FLOESS, Rob Bailis, Elisa Puzzolo, Dan Pope, Andrew Grieshop, *North Carolina State University*

4ST.8 10:00 **Communication of PM2.5 Air Sensor Performance Evaluations in the Field Using EPA's Recommended Performance Metrics and Target Values.** SAMUEL FREDERICK, Rachelle Duvall, Karoline Barkjohn, Cortina Johnson, Andrea Clements, *U.S. EPA Office of Research and Development*

4ST.9 10:00 **Sensor Data Cleaning and Correction: Application on the AirNow Fire and Smoke Map.** KAROLINE BARKJOHN, Amara Holder, Andrea Clements, Samuel Frederick, Ron Evans, *US Environmental Protection Agency*

4ST.10 10:15 **Using Modeled Respiratory Aerosol and Measured CO2 to Inform COVID-19 Risk Prevention on a University Campus.** J. ALEX HUFFMAN, Nora Carmody, *University of Denver*

4ST.11 10:15 **Disparities in Air Quality Downscaler Model Uncertainty across Socioeconomic and Demographic Indicators in North Carolina.** SHAN ZHOU, Robert Griffin, Alexander Bui, Mercedes Bravo, Claire Osgood, Marie Lynn Miranda, *Rice University*

Tuesday 10:45 AM - 11:45 AM
Session 5: Platform

5AC AEROSOL CHEMISTRY V

Arthur Chan and Sarah Suda Petters, chairs

5AC.1 10:45 **Chemical Composition and Mass Yield of Secondary Organic Aerosol Generated from the Oxidation of Biogenic and Anthropogenic Precursors by Hydroxyl Radicals, Chlorine Atoms, and Bromine Atoms.** ANDREW LAMBE, Anita Avery, Harald Stark, Jordan Krechmer, Francesca Majluf, Manjula Canagaratna, Catherine Masoud, Nirvan Bhattacharyya, Mrinali Modi, Lea Hildebrandt Ruiz, William Brune, *Aerodyne Research, Inc.*

5AC.2 10:45 **Changes in Mass Yield, Volatility Distribution, and Chemical Composition of Secondary Organic Aerosol Formed From Simultaneous and Sequential Oxidation of α-Pinene and Limonene by Nitrate Radicals.** MASAYUKI TAKEUCHI, Thomas Berkemeier, Gamze Eris, Nga Lee Ng, *Georgia Institute of Technology*

5AC.3 10:45 **Comprehensive Measurements of Organic Carbon over Long Oxidation Timescales.** LESLY FRANCO DELOYA, Jesse Kroll, *MIT*

5AC.4 11:00 **Vapor-phase Chemical Speciation and Condensation of Cerium Oxide.** KATE RODRIGUEZ, Batikan Koroglu, Zurong Dai, Kim Knight, *LLNL*

5AC.5 11:00 **Influence of Salt Identity on the Size Dependent Morphology of Aerosol Particles.** MIRIAM FREEDMAN, Emily-Jean Ott, *Penn State University*

5AC.6 11:00 **Molecular Investigation of the Multi-Phase Photochemistry of Fe-citrate Aerosol Proxies.** CHRISTOPHER WEST, Jackson Ryan, Felipe Rivera-Adorno, Ana Morales, Jay Tomlin, Anusha P.S. Hettiyadura, Maria Misovich, Andrew Darmody, Peng Lin, Brittany Linn, Alexander Laskin, *Purdue University*

5AC.7 11:15 **The Role of Ammonia in Atmospheric New Particle Formation and Aerosol Number Abundance at the Southern Great Plains Site.** ARSHAD NAIR, Fangqun Yu, Gan Luo, *The State University of New York at Albany*

5AC.8 11:15 **Regional and Nearfield Per- and Polyfluoroalkyl Substances (PFASs) in Ambient Fine Aerosol (PM2.5) in North Carolina, USA.** Jiaqi Zhou, Karsten Baumann, Ralph Mead, Stephen Skrabal, Robert Kieber, Gene Avery, Megumi Shimizu, Mei Sun, Samuel Vance, Wanda Bodnar, Zhenfa Zhang, Leonard Collins, Jason Surratt, BARBARA TURPIN, *UNC-Chapel Hill*

5AC.9 11:15 **First Insights into Chemical Pathways of New Particle Formation over Siberia, Russia.** OLGA GARMASH, Ekaterina Ezhova, Mikhail Arshinov, Denis Davydov, Anastasiia Demakova, Meri Räty, Federico Bianchi, Tuukka Petäjä, Boris Belan, Markku Kulmala, *University of Helsinki*

5AC.10 11:30 **Partitioning of Ambient Organic Gases to Inorganic Salt Solutions: Influence of Salt Identity, Ionic Strength, and pH.** VIKRAM PRATAP, Annmarie Carlton, Amy Christiansen, Christopher Hennigan, *University of Maryland, Baltimore County*

5AC.11 11:30 **Organosulfates Are Primarily Deprotonated at Atmospheric Aerosol Acidities: pH-Dependent Protonation State via Raman and Infrared Spectroscopy.** ALISON FANKHAUSER, Ziying Lei, Kimberly Daley, Yao Xiao, Zhenfa Zhang, Avram Gold, Bruce Ault, Jason Surratt, Andrew Ault, *University of Michigan*

5AC.12 11:30 **Stratification, Solvent-modulated Effects, and Simulations of Solvation in Secondary Organic Aerosol Mimicking Solutions.** Emmaline Longnecker, Rebecca Miller, Lucy Metz, Asli Ali, Laura Bickart, Michelle Chen, Maya Morales, Habso Omane, ANDREW BERKE, *Smith College*

5HA HEALTH RELATED AEROSOLS I

Vishal Verma and Krystal Politt, chairs

5HA.1 10:45 **Physicochemical and Toxicological Characterization of Electronic Nicotine Delivery Systems.** ROBY GREENWALD, Christa Wright, Aika Davis, Qian Zhang, Ji Soo Jeon, *Georgia State University*

5HA.2 10:45 **Development of a Ventilated Artificial Lung Model for Characterizing the Physicochemical Properties of Inhaled E-cigarette Aerosols.** LIQIAO LI, Haoxuan Chen, Airi Harui, Michael D. Roth, Yifang Zhu, *University of California, Los Angeles*

5HA.3 10:45 **Toxicity Associated with Surface Chemistry of Combustion Produced PM2.5 by in Vitro Assays.** MADHU SINGH, Randy Vander Wal, Patricia Silveyra, *Penn State University*

5HA.4 11:00 **Comparison of Oxidative Potential of Fine Particles between Urban and Rural Sites.** SEUNGHYE LEE, Ma. Cristine Faye Denna, Minhan Park, Jiho Jang, Joonwoo Kim, Kihong Park, *Gwangju Institute of Science and Technology*

5HA.5 11:00 **Size Fractionation of PM2.5 Water-soluble Elements (Iron and Copper) and Oxidative Potential.** YUHAN YANG, Dong Gao, Rodney J. Weber, *Georgia Institute of Technology*

5HA.6 11:00 **Spatiotemporal Variability in the Oxidative Potential of Ambient Fine Particulate Matter in Midwestern United States.** HAORAN YU, Joseph V Puthussery, Yixiang Wang, Vishal Verma, *University of Illinois Urbana-Champaign*

5HA.7 11:15 **On the Relative Contribution of Fe and Organic Compounds, and Their Interaction in Cellular Oxidative Potential (OP) of Ambient PM2.5.** YIXIANG WANG, Haoran Yu, Joseph V Puthussery, Vishal Verma, *University of Illinois Urbana-Champaign*

5HA.8 11:15 **Chemical and Cellular Superoxide Generation upon Respiratory Deposition of Quinones and Secondary Organic Aerosols.** TING FANG, Yu-Kai Huang, Jinlai Wei, Jessica Monterrosa, Pascale Lakey, Michael Kleinman, Michelle Digman, Manabu Shiraiwa, *University of California, Irvine*

5HA.9 11:15 **Interactions between Transition Metals in Particulate Matter and Phosphate Buffer Affect Acellular Oxidative Potential Assays.** JAYASHREE YALAMANCHILI, Christopher Hennigan, Brian Reed, *University of Maryland, Baltimore County*

5HA.10 11:30 **Aerosol Science, Toxicology and Risk Analysis Accomplishments from the Lovelace Organization: 1960-2020.** ROGER MCCLELLAN, *Advisor*

5HA.11 11:30 **Respiratory Drug Development and Lovelace Biomedical: 2010-2021.** JACOB MCDONALD, Philip Kuehl, *Lovelace Biomedical*

5IA INDOOR AEROSOLS III

Andrew Metcalf and Anita Avery, chairs

5IA.1 10:45 **Exposure of Adults and Children to the Released and Resuspended Particles from Nanotechnology-enabled Consumer Products.** RUIKANG HE, Jie Zhang, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

5IA.2 10:45 **Assessing Mitigation Strategies to Reduce Potential Exposures to Indoor Particle Release Events.** Kathryn Van Valkinburgh, Ali Mohammadi Nafchi, Nigel Kaye, Ehsan Mousavi, Vincent Blouin, ANDREW METCALF, *Clemson University*

5IA.3 10:45 **Quantifying Temporal Ventilation Trends in Indoor Air Quality in University Buildings Using Professional Grade Low-Cost Sensors.** SABRINA WESTGATE, Daniel Alvarado-Velez, Eben Cross, David Hagan, Nga Lee Ng, *Georgia Institute of Technology*

5IA.4 11:00 **Particulate Matter in Multi-Unit Social Housing: Impacts of Smoking, Season, and Building Retrofits.** Alexander Mendell, Alireza Mahdavi, Yuchao Wan, JEFFREY SIEGEL, *University of Toronto*

5IA.5 11:00 **Exposure to Indoor and Outdoor Air Toxics and Associated Human Health Risk in Edmonton, Canada.** MD. AYNUL BARI, Sanchita Paul, Warren Kinderzierski, *University at Albany, SUNY*

5IA.6 11:00 **Indoor PM2.5 as a Function of Outdoor PM2.5, Temperature, Heatwave Period, and Smoking Status.** RUIKANG HE, Ioanna Tsoulou, Sanjeevi Thirumurugesan, Brian Morgan, Stephania Gonzalez, Deborah Plotnik, Jennifer Senick, Clinton J. Andrews, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

5IA.7 11:15 **Secondary Organic Aerosol Formation from the Reaction of Decamethylcyclopentasiloxane (D5) with Chlorine Atoms.** ANITA AVERY, Francesca Majluf, Jordan Krechmer, Harald Stark, Lea Hildebrandt Ruiz, William Brune, Manjula Canagaratna, Andrew Lambe, *Aerodyne Research, Inc.*

5IA.8 11:15 **Understanding Outdoor and Indoor Air Quality Implications of 100% Fresh (Ambient) Air Ventilation System.** ALVARADO-VELEZ DANIEL, Sabrina Westgate, Eben Cross, David Hagan, Nga Lee Ng, *Georgia Institute of Technology*

5IA.9 11:15 **Modeling Indoor Inorganic Aerosol Concentrations during the ATHLETIC Campaign with ISORROPIA.** Bryan Berman, Bryan Cummings, Hongyu Guo, Pedro Campuzano-Jost, Jose-Luis Jimenez, Demetrios Pagonis, Peter F. DeCarlo, SHANNON CAPPS, Michael Waring, Douglas Day, Zachary Finewax, Benjamin A. Nault, Anne Handschy, *Drexel University*

5IA.10 11:30 **Cookstove Emissions and Performance Evaluation Using a New ISO Protocol and Comparison of Results with Previous Test Protocols.** WYATT CHAMPION, Michael Hays, Craig Williams, Larry Virtaranta, Mark Barnes, William Preston, James Jetter, *U.S. Environmental Protection Agency*

5IA.11 11:30 **Volatilization and Partitioning to Aerosols From Electronic Cigarette Vapor Residue.** HENRY COLBY, Erin Katz, Roger Sheu, Peter F. DeCarlo, *Drexel University*

5IA.12 11:30 **Evaluating the Indoor and Outdoor Air Quality Impacts of Intensive Building Energy Efficiency Improvements.** COLBY BUEHLER, Kenneth Gillingham, Pei Huang, Drew Gentner, Jordan Peccia, *Yale University*

5IM INSTRUMENTATION & METHODS II

Carlos Larriba-Andaluz and Susanne Hering, chairs

5IM.1 10:45 **Laminar Flow Sublimation-Deposition Systems for Nanoparticle Growth with MALDI Matrices.** KE' LA KIMBLE, Michelle Heilig, Brock Mitts, Li Li, Kimberly Prather, Christopher J. Hogan, *University of Minnesota*

5IM.3 10:45 **Understanding the Physicochemical Evolution of Levitated Particles using Linear Quadrupole Electrodynamic Balance Coupled with Paper Spray Mass Spectrometry.** RAVLEEN KAUR KOHLI, James F. Davies, *University of California, Riverside*

5IM.5 11:00 **Molecular Structure Characterization of Nanoparticles Formed from the Ozonolysis of Alpha-Pinene.** ADAM THOMAS, Véronique Perraud, Michelia Dam, James Smith, *University of California, Irvine*

5IM.6 11:00 **Enriching Inlet for Improving Sensitivity and Level of Detection of Reactive Organic Gases by an Order of Magnitude in SCCM-Level Flows.** NAMRATA SHANMUKH PANJI, Graham Frazier, Gabriel Isaacman-VanWertz, *Virginia Tech*

5IM.7 11:15 **10 nm Exhaust Particle Counting System for Automotive Certification Measurements.** HELMUT KRASA, Martin Kupper, Markus Bainschab, Martin Cresnoverh, Mario Arar, Alexander Bergmann, *Graz University of Technology*

5IM.8 11:15 **Optimizing the Activation Efficiency of Sub-3 nm Particles in a Laminar Flow Condensation Particle Counter by Model Simulation.** WEIXING HAO, Mark R. Stolzenburg, Michel Attoui, Jiaoshi Zhang, Yang Wang, *Missouri University of Science and Technology*

5IM.9 11:15 **Simplified Calibration of CPC Detection Efficiency Using Mono-Disperse Aerosols.** DEREK OBERREIT, Siqin He, *Kanomax FMT, Inc.*

5IM.10 11:30 **Optimization of Multiplexed Orthogonal Injection of Ions from Electrospray Sources into a Low Pressure Ion Funnel as a Means to Improve Sensitivity.** XI CHEN, Pei Su, Julia Laskin, Carlos Larriba-Andaluz, *IUPUI*

5IM.11 11:30 **Correcting Bias in Log-linear Instrument Calibrations in the Context of Chemical Ionization Mass Spectrometry.** CHENYANG BI, Jordan Krechmer, Manjula Canagaratna, Gabriel Isaacman-VanWertz, *Virginia Tech*

5IM.12 11:30 **The Dual Polarity Spider: A Fast, Compact, Particle Mobility Spectrometer.** STAVROS AMANATIDIS, Gregory Lewis, Steven Spielman, Ryan Ward, Yuanlong Huang, Benjamin Schulze, Susanne Hering, Richard Flagan, *Aerosol Dynamics Inc.*

5SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 V

Jillianne Taylor and CY-Wu, chairs

5SI.1 10:45 **Risk Assessment and Mitigation of Aerosol Driven Transmission during Wind Instrument Plays.** RUICHEN HE, Aliza Abraham, Linyue Gao, Jiarong Hong, *University of Minnesota*

5SI.2 10:45 **SARS-CoV-2 in Aerosol Particles Exhaled from COVID-19 Infected Patients during Breathing, Talking and Singing.** MALIN ALSVED, David Nygren, Patrik Medstrand, Sara Thuresson, Carl-Johan Fraenkel, Jakob Löndahl, *Ergonomics and Aerosol Technology, Lund University, Sweden*

5SI.3 10:45 **Measurements and Simulations of Aerosol Released while Singing and Playing Wind Instruments.** TEHYA STOCKMAN, Shengwei Zhu, Abhishek Kumar, Lingzhe Wang, Sameer Patel, James Weaver, Mark Spede, Donald K. Milton, Jean Hertzberg, Darin Toohey, Marina Vance, Jelena Srebric, Shelly Miller, *University of Colorado Boulder*

5SI.4 11:00 **The Effect of Plexiglass Shields on Droplet/Aerosol Transmission of Virus in Indoor Environments.** BO YANG, Khaled Hashad, Alfredo Rodriguez, K. Max Zhang, *Cornell University*

5SI.5 11:00 **Healthcare Acquired Infections (HAIs), Coronavirus, and Filtration Efficiency.** NIKKI SASHER, *AAF Flanders*

5SI.6 11:00 **Assessment of Personal Exposure to Airborne SARS-CoV-2 Using Wearable PDMS Passive Air Samplers.** DONG GAO, Darryl Angel, Kayley DeLay, Elizabeth Lin, Jordan Peccia, Krystal Godri Pollitt, *Yale University*

5SI.7 11:15 **Influence of Flow Rates on Pressure Drop and Penetration for Various Masks.** PETER CHEA, Buddhi Pushpawela, Ryan Ward, Richard Flagan, *California Institute of Technology*

5SI.8 11:15 **Methods for Measuring Human-Generated Particle Emissions from Valved and Unvalved N95 Respirators and Face Coverings.** ANDREW VINER, Christine McCool, David Buckley, Nicole McCullough, *3M*

5SI.9 11:15 **Variability of the Performance of Facemasks.** BUDDHI PUSHPAWELA, Stavros Amanatidis, Yuanlong Huang, Richard Flagan, *California Institute of Technology*

5SI.10 11:30 **Racial Disparities in Fine Particulate Matter Exposure and COVID-19 Spread in the United States.** PAYTON BEELER, Rajan K. Chakrabarty, *Washington University in St. Louis*

5SI.11 11:30 **Inactivation of Escherichia coli in Droplets at Different Ambient Relative Humidity: Effects of Phase Transition, Solute and Cell Concentrations.** ZHANCONG LIANG, Wing Lam Chan, Xiaomeng Tian, Patrick Kwan Ho Lee, Chak K. Chan, *City University of Hong Kong, China*

Tuesday 11:45 AM - 1:00 PM
Lunch Break

Tuesday 1:00 PM - 2:00 PM
Session 6: Platform

6AC AEROSOL CHEMISTRY VI

Drew Gentner and Gabriel Isaacman-VanWertz, chairs

6AC.1 1:00 **Formation and Aging of Carboxylic Acids and Dimer Esters in α-Pinene and β-Pinene Secondary Organic Aerosol.** CHRISTOPHER KENSETH, Yuanlong Huang, Nicholas Hafeman, Nathan Dalleska, Brian Stoltz, John Seinfeld, *California Institute of Technology*

6AC.2 1:00 **Comparison of Common Vapor Pressure Estimation Methods through Modeling of Alkene OH/NOx Systems.** EMMALINE LONGNECKER, Julia Bakker-Arkema, Paul Ziemann, *CU Boulder*

6AC.3 1:00 **Differences in Mass Yields and Composition of Secondary Organic Aerosols from Nitrate Radical Oxidation of Isoprene under Various Reaction Conditions.** TIANCHANG XU, Masayuki Takeuchi, Yuchen Wang, Nga Lee Ng, *Georgia Institute of Technology*

6AC.4 1:15 **Volatility Comparison of β-caryophyllene Autoxidation Products with C15 Dimers Using FIGAERO I-CIMS Thermal Desorption.** JENNA DEVIVO, Mingyi Wang, Lubna Dada, Neil Donahue, The CLOUD Collaboration, *Carnegie Mellon University*

6AC.5 1:15 **Ambient Chlorine Chemistry in an Oil and Gas Production Region: Evidence from a FIGAERO-CIMS.** CATHERINE MASOUD, Nirvan Bhattacharyya, Kristi McPherson, Leif Jahn, Pearl Abue, Kanan Patel, Daniel C. Blomdahl, Pawel K. Misztal, Lea Hildebrandt Ruiz, *University of Texas at Austin*

6AC.6 1:15 **Chemistry in Heated Cooking Oils and Effects on Gaseous and Particulate Emissions.** Manpreet Takhar, Jenna Ditto, Eleanor Vaz, Jonathan Abbatt, ARTHUR W. H. CHAN, *University of Toronto*

6AC.7 1:30 **Brown Carbon Formation and Evolution from Aqueous-Phase Nitrate-Mediated Photooxidation of Phenolic Compounds.** THEODORA NAH, Junwei Yang, Wing Chi Au, Haymann Law, Chun Hei Leung, Chun Ho Lam, *City University of Hong Kong*

6AC.8 1:30 **Aqueous-phase Brown Carbon Formation from Limonene SOA: Effects of Drying Conditions and Gas-phase Precursors.** NETHMI KASTHURIARACHCHI, Laura-Helena Rivellini, Alex Lee, *National University of Singapore*

6AC.9 1:30 **Effects of Ammonium Sulfate on the Photodegradation of Toluene-Derived Brown Carbon Secondary Organic Aerosol.** ALEXANDRA KLODT, Rachel O'Brien, Sergey Nizkorodov, *University of California, Irvine*

6AC.10 1:45 **Effects of Different Environmental Conditions on Secondary Brown Carbon Formation from Nighttime Oxidation of Furan.** KUNPENG CHEN, Nilofar Raeofy, Raphael Mayorga, Roya Bahreini, Haofei Zhang, Ying-Hsuan Lin, *University of California, Riverside*

6AC.11 1:45 **OH Formation during the Photolysis of Polycyclic Aromatic Hydrocarbons.** HEATHER RUNBERG, Brian Majestic, *University of Denver*

6AC.12 1:45 **Examining the Competition Between Oxidation and Deposition in the Fate of Reactive Organic Carbon.** GABRIEL ISAACMAN-VANWERTZ, Chenyang Bi, *Virginia Tech*

6HA HEALTH RELATED AEROSOLS II

Changjie Cai and Su Wei-Chung, chairs

6HA.1 1:00 **Aid Pulmonary Disease Diagnosis and Treatment with CFD Modeling and Deep Learning: a New Perspective and Pilot Study.** Changjie Cai, YU FENG, *The University of Oklahoma Health Sciences Center*

6HA.2 1:00 **Droplet Deposition Measurements in a Simplified Mouth-Throat Airway.** HUIZHEN YANG, Xiaole Chen, Ting Ding, Jinan Zhang, *Nanjing Normal University*

6HA.3 1:00 **Estimation of Ultrafine Particle Respiratory Deposition Using Mobile Aerosol Lung Deposition Apparatus (MALDA).** WEI-CHUNG SU, Jinho Lee, *University of Texas Health Science Center at Houston*

6HA.4 1:15 **Effects of Device Type, Liquid Composition, and Emission Level on Characteristics of Aerosol Generated from Tank-Style E-cigarettes and JUUL Pods.** YUENING GUO, Liqiao Li, Yi Luo, Yifang Zhu, *University of California, Los Angeles*

6HA.5 1:15 **Filter Sample Analysis of Metal Contents Generated from Electronic Cigarettes and Potential Secondhand Smoke Emission.** KAPIAMBA KASHALA FABRICE, Weixing Hao, Stephen Adom, Wenyan Liu, Huang Yue-Wern, Yang Wang, *Missouri University of Science and Technology*

6HA.6 1:15 **The Spatial Distribution of Particles from Little Cigar Smoke Deposited in Rat Lungs.** KAISEN LIN, Christopher Wallis, Emily Wong, Patricia Edwards, Laura Van Winkle, Bahman Asgharian, Anthony S. Wexler, *University of California, Davis*

6HA.7 1:30 **The Fate of an Inhaled Puff Generated by an Electronic Nicotine Delivery System in The Human Oral and Lung Airways.** AKINA MORI, Owen Price, Shigeaki Ito, Takuya Suzuki, Hitoshi Fujimoto, Hiroaki Suzuki, Bahman Asgharian, *Japan Tobacco Inc.*

6HA.8 1:30 **A Comparative In Vitro and In Vivo Toxicity Assessment of E-cigarette Aerosols Generated from Sub-ohm Tank and Juul.** TIANCONG MA, Liqiao Li, Tian Xia, Yifang Zhu, *University of California, Los Angeles*

6HA.9 1:30 **Component Specific Evaporation of Filter Collected E-Cigarette Particulate Matter under Wet and Dry Conditions.** KAITLYN SUSKI, Brad Ingebrethsen, Nagaraja Rao, Huan Wang, *JUUL Labs*

6HA.10 1:45 **Temperature Dependence of Emission Product Distribution from Vaping of Vitamin E Acetate.** ALEXA CANCHOLA, Kunpeng Chen, Megan Woods, C.M. Sabbir Ahmed, Jin Y. Chen, Ying-Hsuan Lin, *University of California, Riverside*

6HA.11 1:45 **Iron-facilitated Organic Radical Formation from Secondary Organic Aerosols in Surrogate Lung Fluid.** JINLAI WEI, Ting Fang, Pascale Lakey, Manabu Shiraiwa, *University of California, Irvine*

6IM INSTRUMENTATION & METHODS III

Alexander Bergmann and Akua Asa-Awuku, chairs

6IM.1 1:00 **Evaluation of a New Low-Cost Particle Sensor as an IoT Device for Indoor and Outdoor Particulate Matter Monitoring.** ABI ROBERTS, Kathryn Van Valkinburgh, Christopher Post, John Pearce, Elena Mikhailova, Andrew Metcalf, *Clemson University*

6IM.2 1:00 **Understanding the Sources of Urban Air Quality Using Low-Cost Air Quality Sensors.** LAURA YANG, David Hagan, Jean Rivera-Rios, Zahra Shivji, Eben Cross, Chris Peng, Jennifer Kaiser, Nga Lee Ng, *Georgia Institute of Technology*

6IM.3 1:00 **Long-term Evaluation of Low-Cost Air Sensors to Measure Indoor and Outdoor Particulate Matter in a Polluted Environment: Strengths and Limitations.** JAEBIN JU, Linh Luu, Danielle Rocco, Esther Morales, Daniel B. Curtis, *California State University, Fullerton*

6IM.4 1:15 **Laboratory Calibration of a Low-cost Particulate Matter Sensor Using Standardized Aerosols.** CHING-HSUAN HUANG, Jiayang He, Elena Austin, Edmund Seto, Igor Novosselov, *University of Washington*

6IM.5 1:15 **Performance of a Hybrid Lower-Cost PM Monitor in West Africa.** JULIEN BAHINO, Michael R. Giordano, Eben Cross, James Nimo, Allison Hughes, Emmanuel Appoh, Christian Sewor, Kofi Amegah, Daniel Westervelt, Isaiah Tuolienuo, Melanie A Jackson, Stefani Penn, Rob Pinder, Arsene Ochou, Veronique Yoboue, Matthias Beekmann, R. Subramanian, *OSU-EFLUVE, LISA/CNRS, UPEC, ENPC, UP*

6IM.6 1:15 **Particle Measurement on Mobile Platforms: Considerations in Using Reference-Grade Monitors, Low-Cost Particle Sensors, and Particle Trajectory Modeling.** WILTON MUI, Berj Der Boghossian, Ashley Collier-Oxandale, Steven Boddeker, Jason Low, Vasileios Papapostolou, Andrea Polidori, *South Coast Air Quality Management District*

6IM.7 1:30 **Cloud Condensation Nuclei (CCN) Activity Analysis of Low-Hygroscopicity Aerosols Using the Aerodynamic Aerosol Classifier (AAC).** KANISHK GOHIL, Akua Asa-Awuku, *University of Maryland*

6IM.8 1:30 **Validation of Integrating Cavity Absorption Spectroscopy for Cloud and Aerosol Mass Concentration Measurement.** MONIKA GRAFL, Benjamin Lang, Alexander Bergmann, *Graz University of Technology*

6IM.9 1:30 **A Miniaturized, Lower Cost, Cloud Condensation Nuclei Counter.** ALEKSANDRA VOLKOVA, J. Alex Huffman, Donald R. Huffman, Ezra Levin, Gavin McMeeking, Matt Freer, Ben Swanson, Anna Hodshire, *University of Denver*

6NM NANOMATERIALS & SYNTHESIS I

Wei-Ning Wang and Georgios Kelesidis, chairs

6NM.1 1:00 **Modeling Nanoparticle Charge Distribution in the Afterglow of Non-thermal Plasmas and Comparison with Measurements.** Vikram Suresh, LI LI, Joshua Redmond Go Filipe, Ranganathan Gopalakrishnan, *The University of Memphis*

6NM.2 1:00 **Molecular Dynamics based Investigation of Aerosol Deposition versus Thermal Spray Deposition.** GUANYU SONG, Huan Yang, Christopher J. Hogan, *University of Minnesota*

6NM.3 1:00 **Vapor-Phase Synthesis and Assembly of Reactive Metal Nanoparticles for Energetic Applications.** PANKAJ GHILDIYAL, Prithwish Biswas, Steven Herrera, Reza Abbaschian, Michael Zachariah, *University of Maryland, College Park*

6NM.4 1:15 **Langevin Dynamics Simulation of Porous Particulate Film Deposition with Polydisperse and Agglomerated Particles.** JIHYEON LEE, Christopher J. Hogan, *University of Minnesota*

6NM.5 1:15 **Flame Aerosol Synthesis of Mesoporous Silica and Porous Ceramic Nanospheres.** Shuo Liu, Satyarit Rao, Mihir Shah, MARK SWIHART, *University at Buffalo - SUNY*

6NM.6 1:15 **In-Situ Laser Diagnostics for the Characterization of Nanoparticles Synthesized with the Reactive Spray Deposition Technology (RSDT).** EVANGELOS K. STEFANIDIS, Thomas A Ebaugh, Stoyan Bliznakov, Leonard Bonville, Francesco Carbone, Radenka Maric, *University of Connecticut*

6NM.7 1:30 **Laser Pyrolysis Synthesis and Applications of Rare-Earth Fluorides for Optical Upconversion.** Mohammad Malekzadeh, Khirabdhi Mohanty, Vishvajeet Mane, MARK SWIHART, *University at Buffalo - SUNY*

6NM.8 1:30 **Synthesis of Graphene Nanosheets from Controlled Explosion of Liquid Precursors.** SHUSIL SIGDEL, Justin Wright, Jose Covarrubias, Christopher Sorensen, *Kansas State University*

6NM.9 1:30 **Controllable Synthesis of Charged Lignin Nanoparticles as Nanocarriers by Electrospray.** HAO ZHOU, Sujit Modi, Pratim Biswas, *Washington University in St Louis*

6NM.10 1:45 **Size Effect on the NIR Sheilding of Sodium Tungsten Bronze Particles.** HAO TU, Wei-Ning Wang, Da-Ren Chen, *Virginia Commonwealth University*

6NM.11 1:45 **Freeze Spray Drying for the Encapsulation of Active Proteins.** ALBERTO BALDELLI, Aylin Cidem, Yigong Guo, Hui Xin Ong, Daniela Traini, Anubhav Pratap-Singh, *The University of British Columbia*

6SI SPECIAL SYMPOSIUM: INFECTIOUS AEROSOLS IN THE AGE OF COVID-19 VI

Jonathan Reid and Doug Reed, chairs

6SI.1 1:00 **Personal Protective Equipment: Efficacy in Containing and Shielding Particulate Matter with a Diameter between 1 and 5 µm.** ALBERTO BALDELLI, Kevin Heieis, Steven Rogak, Andrew Poznikoff, Robert Purdy, *The University of British Columbia*

6SI.2 1:00 **Respiratory Aerosols and Droplets in the Transmission of Infectious Diseases.** MIRA L. PÖHLKER, Ovid O. Krüger, Jan-David Förster, Thomas Berkemeier, Janine Fröhlich-Nowoisky, Wolfgang Elbert, Ulrich Pöschl, Gholamhossein Bagheri, Eberhard Bodenschatz, Simone Scheithauer, J. Alex Huffman, Eugene Mikhailov, Christopher Pöhlker, *Max Planck Institute for Chemistry, Mainz, Germany*

6SI.3 1:00 **Dynamics of Size Distribution Evolution of Human Expelled COVID-19 Droplets for Coughing and Speaking: A Simulation Study.** JOSHIN KUMAR, Yang Wang, Benjamin Sumlin, Esther Monroe, Nishit Shetty, Rajan K. Chakrabarty, *Washington University in St. Louis*

6SI.4 1:15 **Effect of Filtration Area on Aerosol Penetration through Personal Protective Equipment.** CHETHANI ATHUKORALA, Hunter Hardy, Suresh Dhaniyala, *Clarkson University*

6SI.5 1:15 **Studying the Novel SARS-CoV-2 for Aerosol Transmissions.** WAJIH UR REHMAN, *COMSATS University Islamabad*

Tuesday 2:00 PM - 4:00 PM
Chatroom Open

Wednesday

Wednesday 8:00 AM - 9:15 AM
Plenary III

8:00 **Aerosols in Chemistry and the Chemistry of Aerosols** Murray Johnston, *University of Delaware*

Moderator Dan Murphy, *National Oceanic and Atmospheric Administration*

9:00 **Whitby Award Presentation, Mercer Award Announcement** Sheryl Ehrman, Awards Committee Chair, *San Jose State University*

Wednesday 9:30 AM - 10:30 AM
Session 7: Platform

7AC AEROSOL CHEMISTRY VII

Sergey Nizkorodov and Joseph Woo, chairs

7AC.1 9:30 **Production of Formate via Oxidation of Glyoxal Promoted by Particulate Nitrate Photolysis.** RUIFENG ZHANG, Masao Gen, Tzung-May Fu, Chak K. Chan, *City University of Hong Kong*

7AC.2 9:30 **SOA and Organic Nitrate Formation from the Reaction of α-Pinene with NO3 under Simulated Nighttime Conditions.** Kelvin Bates, James Cope, Guy Burke, TRAN NGUYEN, *University of California, Davis*

7AC.3 9:30 **Observations of Nitrate Radical Initiated Oxidation of Various Monoterpenes in a Laboratory Chamber Using NO3-CIMS.** MICHELIA DAM, Danielle C. Draper, Andrey Marsavin, Juliane Fry, James Smith, *University of California, Irvine*

7AC.4 9:45 **The Effect of Viscosity on Rate of Fresh SOA Seed Particles Grown by α-Pinene Ozonolysis.** DEVON HAUGH, Michael S. Taylor, Murray Johnston, *University of Delaware*

7AC.5 9:45 **Molecular Composition Changes in α-Pinene SOA Due to the presence of PAHs.** SIMEON SCHUM, Lynn Mazzoleni, Kaitlyn Suski, Alla Zelenyuk, *Michigan Technological University*

7AC.6 9:45 **Formation and Properties of Secondary Organic Aerosol Particles Generated by Oxidation of Cyclic and Acyclic Terpenes.** ALLA ZELENYUK, Robert VanGundy, David Bell, *Pacific Northwest National Laboratory*

7AC.7 10:00 **Reaction Products and Pathways of Alkoxy Radicals in the Condensed Phase.** VICTORIA BARBER, Yaowei Li, Alexander Zaytsev, Francesca Majluf, Jordan Krechmer, Frank Keutsch, Jesse Kroll, *MIT*

7AC.8 10:00 **Impacts of Salted Aqueous Phase on Monoterpene SOA Produced under Different Atmospheric Oxidants.** SANGHEE HAN, Myoseon Jang, *University of Florida*

7AC.9 10:00 **Multiphase Ozonolysis of Unsaturated Lipids – Exploring its Mechanism and Product Reactivity.** ZILIN ZHOU, Pascale Lakey, Manabu Shiraiwa, Holly Barrett, Hui Peng, Jonathan Abbatt, *University of Toronto, Canada*

7AC.10 10:15 **Vapors are Lost to Walls, Not to Particles on the Wall: Development of Artifact-Corrected Parameters and Implications for Global Secondary Organic Aerosol.** KELSEY BILSBACK, Charles He, Jeffrey R. Pierce, Nga Lee Ng, John Seinfeld, Shantanu Jathar, *Colorado State University*

7AC.12 10:15 **Photochemical Candy: Use of Isomalt as a Proxy Matrix for Secondary Organic Aerosol.** AVERY DALTON, Sergey Nizkorodov, *University of California, Irvine*

7CT CONTROL TECHNOLOGY I

Shaokai Gao and Jiacheng Yang, chairs

7CT.1 9:30 **Reevaluating the Filter Pressure Drop Model for Modern Respirators.** PATRICK O'SHAUGHNESSY, Zoe Harris, Matthew Purdy, *The University of Iowa*

7CT.2 9:30 **An Improved Filtration Model for Gasoline Particulate Filters (GPFs).** PENG WANG, Da-Ren Chen, *Virginia Commonwealth University*

7CT.3 9:30 **Effective Relative Humidity on Textile Mask Filtration Efficiency and Breathability.** JOELLE SEGOVIA, Ching-Hsuan Huang, Nanhsun Yuan, Mei-Yu Liao, Jiayang He, Igor Novosselov, *University of Washington*

7CT.4 9:45 **Improving Filtration Performance of Ceramic Wall-flow Filters with Heat Resistant Membrane by a Two-step Coating Method.** QISHENG OU, David Y. H. Pui, *University of Minnesota*

7CT.5 9:45 **Modeling of Heterogeneous Dustcake Effects by PAC Injection in a Cylindrical Electrostatic Precipitator for Mercury Emissions Control at Coal-Fired Power Plants.** ERIC MONSU LEE, Herek Clack, *Northern Illinois University*

7CT.6 9:45 **Dual-Geometry Pore-Size-Resolved Wall-Flow Filter Deep-bed Loading Model.** WEIQI CHEN, Qisheng Ou, Xin Liu, Matti Maricq, David Kittelson, David Y. H. Pui, *University of Minnesota*

7CT.8 10:00 **Continuing Development and Testing of the Electrostatic Battery for Emissions Control (ESBEC).** TAEWON HAN, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

7CT.9 10:00 **In-Use Emission Measurements from Two High-Speed Passenger Ferries Operating in California.** CHAS FREDERICKSON, Wei Liu, Mark Villela, Kent Johnson, David Quiros, Heejung Jung, *University of California, Riverside*

7CT.10 10:15 **Liquid Sheet Breakup and Droplet Evolution in Agricultural Sprays.** IAROSLAV MAKHNENKO, Long Nguyen, Elizabeth Alonzi, Steven Fredericks, Christine Colby, Cari Dutcher, *University of Minnesota*

7CT.11 10:15 **Measurement of Aerosolized HMWO Nanoparticles and Its Application in Liquid Filter Retention Efficiency Characterization.** SIQIN HE, Derek Oberreit, Gary Van Schooneveld, *Kanomax FMT, Inc.*

7HA HEALTH RELATED AEROSOLS III

Yu Feng and Changjie Cai, chairs

7HA.2 9:30 **Influence of Extreme Air Pollution Episodes on the Oxidative Potential of Ambient Particulate Matter in Delhi, India.** JOSEPH V PUTHUSSERY, Ashutosh Shukla, Jay Dave, Sreenivas Gaddamidi, Atinderpal Singh, Dilip Ganguly, Neeraj Rastogi, Sachchida N. Tripathi, Vishal Verma, *University of Illinois Urbana-Champaign*

7HA.3 9:30 **Spray Aerosol Emissions from Harmful Cyanobacterial Blooms in the Chowan River, NC.** HALEY E. PLAAS, Karsten Baumann, Ryan Paerl, Kimberly Popendorf, Colleen Karl, Jill Paxson, Naomi Chang, Joel Sanchez, Huang Hwa, Malcolm A. Barnard, Daniela Maizel, Hans W. Paerl, *University of North Carolina at Chapel Hill*

7HA.4 9:45 **Assessment of PM Exposures during Commute in Megacity of Karachi, Pakistan.** HAIDER KHWAJA, Kamran Khan, Sumayya Saied, Azhar Siddique, Saiyada Masood, *University at Albany*

7HA.5 9:45 **Single-Particle Characterization of Polycyclic Aromatic Hydrocarbons in Background Air in Northern Europe.** Johannes Passig, Julian Schade, Robert Irsig, Thomas Kröger-Badge, Hendryk Czech, Thomas Adam, Henrik Fallgren, Jana Moldanova, Martin Sklorz, Thorsten Streibel, RALF ZIMMERMANN, *Helmholtz Zentrum München and University of Rostock*

7HA.6 9:45 **Real-Time Measurement and Source Apportionment of Five Different Endpoints of the Oxidative Potential of Ambient Particulate Matter at an Urban Site.** JOSEPH V PUTHUSSERY, Haoran Yu, Yixiang Wang, Ian Cornejo, Vishal Verma, *University of Illinois Urbana-Champaign*

7HA.7 10:00 **Aerosol transmission of Respiratory Viral Diseases.** DISHA TRIVEDI, *MVS Pharma*

7HA.8 10:00 **Sampling Masks for Source-Receptor Determination.** DAVID ALBURTY, Ryan Pletka, Shula Jaron, Brian Patch, *InnovaPrep LLC*

7HA.9 10:00 **Assessing Residential Bioaerosol and Black Carbon-Related Air Contaminants in the Context of the COVID-19 Shutdown.** YAO ADDOR, Reshmi Indugula, Darrel Baumgardner, Tiina Reponen, *University of Cincinnati*

7HA.10 10:15 **When Aerosol Science Meets the Respiratory Tract: An Update for Inhaled Particle Modeling.** ROBERT PHALEN, Mark Hoover, Roger McClellan, *University of California Irvine*

7HA.11 10:15 **Effect of Atmospheric Ageing on Soot Particle Toxicity in Lung Cell Models at the Air-liquid Interface: Differential Toxicological Impacts and Chemical Characterization of Biogenic and Anthropogenic Secondary Organic Aerosols.** Svenja Offer, Elena Hartner, Sebastiano di Bucchianico, Xin Cao, Daniela Gat, Chunlin Li, Thorsten Hohaus, Yue Hu, Markus Kalberer, Christoph Ogris, Annalisa Marsico, Michal Pardo, Jürgen Schnelle-Kreis, Narges Rastak, Thomas Gröger, Andreas Paul, Zhi-Hui Zhang, Olli Sippula, Martin Sklorz, Thomas Adam, Hendryk Czech, Astrid Kiendler-Scharr, Yinon Rudich, RALF ZIMMERMANN, et al., *Helmholtz Zentrum München*

7IM INSTRUMENTATION & METHODS IV

Gabriel Isaacman-VanWertz and Pramod Kulkarni, chairs

7IM.1 9:30 **Condensation Particle Counting in Micro-gravity: Measurements Aboard the International Space Station.** Gregory Lewis, Nathan Kreisberg, Steven Spielman, SUSANNE HERING, Marit Meyer, *Aerosol Dynamics Inc.*

7IM.3 9:30 **Calibration of an Optical Sensor for Lunar Dust Measurements: Atmospheric and Vacuum Conditions.** ABHAY VIDWANS, Brad Jolliff, Jeffrey Gillis-Davis, Pratim Biswas, *Washington University in St Louis*

7IM.4 9:45 **Single-Particle Optical Trapping as a Standalone Micro-Reactor for the Study of Particle Loss, Formation, and Chemical Reaction.** CHUJI WANG, Yukai Ai, Haifa Alali, Yong-Le Pan, Gorden Videen, *Mississippi State University*

7IM.5 9:45 **Realtime Digital Inline Holography for High Fidelity, in Situ and Non-intrusive Aerosol Measurements.** JIARONG HONG, Ruichen He, Rafael Placucci, Lei Feng, *University of Minnesota*

7IM.6 9:45 **Methods for Optical Trapping and Active Orientation Control of Airborne Microparticles.** JESSICA ARNOLD, Aimable Kalume, Gorden Videen, Chuji Wang, Yong-Le Pan, *U.S. Army Research Laboratory*

7IM.7 10:00 **Optical-Trapping of Particles in Air Using Parabolic Reflectors and a Hollow Laser Beam: From Submicron to Supermicron Aerosol.** AIMABLE KALUME, Jessica Arnold, Yong-Le Pan, *U.S. Army Research Laboratory*

7IM.8 10:00 **Comparing Multiple Types of Machine Learning for Characterizing TEM Images of Soot.** TIMOTHY SIPKENS, Hamed Nikookar, Max Frei, Frank Einar Kruis, Steven Rogak, *University of British Columbia*

7IM.9 10:00 **Effect of Particle Size on Measurement Uncertainty in Quantification of Chemical Components Using Infrared Absorption.** KABIR RISHI, Pramod Kulkarni, Bon Ki Ku, Chen Wang, Orthodoxia Zervaki, Elizabeth Ashley, *Centers for Disease Control and Prevention, NIOSH*

7IM.10 10:15 **Design and Characterization of Triple-Tube, Laminar-Flow Condensation Nano Spot-Collector: Application to Microscopy and Spectroscopic Analysis of Aerosols.** ORTHODOXIA ZERVAKI, Braden Stump, Patricia Keady, Pramod Kulkarni, Dionysios D. Dionysiou, *HELD-NIOSH*

7IM.11 10:15 **Open-Hardware Design and Characterization of an Electrostatic Aerosol Precipitator.** SABIN KASPAROGLU, Timothy Wright, Markus Petters, *North Carolina State University*

7IM.12 10:15 **Development of Aerosol into Liquid Sampler for Collecting Nanoparticles by Combining Particle Size Magnifier and Wet Cyclone.** SOICHIRO KATO, Yayoi Inomata, Takafumi Seto, *Kanazawa University*

7UA URBAN AEROSOLS I

Lea Hildebrandt Ruiz and Yele Sun, chairs

7UA.1 9:30 **Intra-city Factors Obtained from Dispersion-normalized Multi-time Resolution Factor Analyses of PM2.5 in an Urban Environment.** Uwayemi Sofowote, Robert Healy, Yushan Su, Jerzy Debosz, Michael Noble, Anthony Munoz, Cheol H. Jeong, Jonathan Wang, Nathan Hilker, Greg J. Evans, Jeff Brook, Gang Lu, PHILIP K. HOPKE, *University of Rochester*

7UA.2 9:30 **Dynamics, Composition and Origin of Submicron Atmospheric Aerosol Measured at Suburban and Traffic Site in Prague, Czech Republic.** PETRA POKORNÁ, Nadežda Zíková, Petr Vodicka, Jakub Ondráček, Jaroslav Schwarz, Philip K. Hopke, *ICPF CAS, Prague, Czech Republic*

7UA.3 9:30 **State of Gaseous Air Pollutants and Resulting Health Effects in a Developing Country of Southeast Asia (Karachi, Pakistan).** OMOSEHIN MOYEBI, Fatim Sannoh, Zafar Fatmi, David Carpenter, Azhar Siddique, Kamran Khan, Jahan Zeb, Mirza M. Hussain, Haider Khwaja, *University at Albany, Albany, New York*

7UA.4 9:45 **Modeling Air Quality in Los Angeles During the COVID-19 Pandemic Using CMAQ: Organic Aerosol Chemistry, Speciation, and Source Apportionment.** ELYSE PENNINGTON, Yuan Wang, Karl Seltzer, Jiani Yang, Benjamin Schulze, Meemong Lee, Havala Pye, Benjamin Murphy, Christopher Kenseth, Benjamin Moul, Lelia Hawkins, Harrison Parker, John Crounse, Paul Wennberg, John Seinfeld, *California Institute of Technology*

7UA.5 9:45 **Factors Influencing Ambient Particulate Matter in Delhi, India: Insights from a Machine Learning Model.** KANAN PATEL, Lea Hildebrandt Ruiz, *University of Texas at Austin*

7UA.7 10:00 **Hourly Measurements of Organic Aerosol Chemical Species (TAG-GC-MS) at a Receptor Site in Mexico City.** Y. MARGARITA MARTÍNEZ-DOMÍNGUEZ, Armando Retama-Hernández, Olivia Rivera-Hernández, Tania Müller-García, Omar Amador-Muñoz, *Atmospheric Science Center, UNAM*

7UA.8 10:00 **On-Road Vehicle Emissions Now Account for a Minor Fraction of Organic Aerosol in Los Angeles.** BENJAMIN SCHULZE, Christopher Kenseth, Elyse Pennington, Paul Van Rooy, Karl Seltzer, Afsara Tasnia, John Crounse, Barbara Barletta, Simone Meinardi, Donald Blake, Kelley Barsanti, Havala Pye, Paul Wennberg, John Seinfeld, *California Institute of Technology*

7UA.9 10:00 **Direct Measurements of Secondary Organic Aerosol (SOA) Response to NOx and VOC Perturbations in the Ambient Atmosphere.** SHENGLUN WU, Christopher Cappa, Qi Zhang, Benjamin Schulze, John Seinfeld, Michael Kleeman, *University of California, Davis*

7UA.10 10:15 **Secondary Organic Aerosol Formation in Regional Scales by Using Multiphase Reaction of Hydrocarbons.** ZECHEN YU, Myoseon Jang, Soontae Kim, Jiwon Choi, Azad Madhu, Sanghee Han, Jinsoo Park, *University of Florida*

7UA.11 10:15 **Investigating the Impact of Biomass Burning Aerosols on Urban Air Quality in Los Angeles.** MITCHELL ROGERS, Benjamin Schulze, Christopher Kenseth, John Crounse, Paul Wennberg, John Seinfeld, *California Institute of Technology*

7UA.12 10:15 **Improved Prediction of Near-Road Vehicle Emissions for Gasoline and Diesel Vehicles Between Emission Simulators and Measured Data from PEMS and Laboratory Measurements.** AYLA MORETTI, David R. Cocker III, Matthew Barth, *University of California, Riverside*

Wednesday 10:45 AM - 11:45 AM
Session 8: Platform

8AC AEROSOL CHEMISTRY VIII

Jesse Kroll and Jonathan Slade, chairs

8AC.1 10:45 **Nitrate Photolysis in Mixed Sucrose-Nitrate-Sulfate Particles at Different Relative Humidities.** ZHANCONG LIANG, Ruifeng Zhang, Masao Gen, Yangxi Chu, Chak K. Chan, *City University of Hong Kong, China*

8AC.2 10:45 **Photodegradation of Secondary Organic Aerosols, the Formation of a Photo-Recalcitrant Fraction and Its Effects on Mass, Composition, and Viscosity.** VAHE BABOOMIAN, Giuseppe Crescenzo, Yuanzhou Huang, Fabian Mahrt, Allan Bertram, Sergey Nizkorodov, *University of California, Irvine*

8AC.3 10:45 **Evolution of the Molecular Composition and Physicochemical Properties of Sea Spray Aerosol in the Presence of OH Radicals.** SAMANTHA KRUSE, Paul Tumminello, Allison Kawasaki, Kathryn Mayer, Jon Sauer, Christopher Cappa, Timothy Bertram, Vicki Grassian, Kimberly Prather, Jonathan Slade, *University of California, San Diego*

8AC.4 11:00 **Aerosol Composition Measurements Using the Vocus Inlet for Aerosol (VIA): Applications in an Oil and Gas Production Region and an Indoor Cooking Event.** DANIEL C. BLOMDAHL, Leif Jahn, Nirvan Bhattacharyya, Catherine Masoud, Kristi McPherson, Pearl Abue, Kanan Patel, Jordan Krechmer, Lea Hildebrandt Ruiz, Pawel K. Misztal, *University of Texas at Austin*

8AC.5 11:00 **Evolution in Biomass-Burning Aerosol Single-Scattering-Albedo over the Southeast Atlantic Reflective of Composition Changes, Not Cloud Processing.** AMIE DOBRACKI, Paquita Zuidema, Allison Aiken, Maria Zawadowicz, *University of Miami*

8AC.6 11:00 **Iron(III)-Catalyzed Chemistry in Biomass Burning Organic Aerosol.** KATHERINE HOPSTOCK, Hind Al-Abadleh, Sergey Nizkorodov, *University of California, Irvine*

8AC.7 11:15 **Secondary Organic Aerosol Formation from in situ Cl Oxidation of Ambient Air in an Oil and Gas Production Region Using an Oxidation Flow Reactor.** NIRVAN BHATTACHARYYA, Catherine Masoud, Kristi McPherson, Kanan Patel, Leif Jahn, Pearl Abue, Daniel C. Blomdahl, Anita Avery, William Brune, Pawel K. Misztal, Andrew Lambe, Lea Hildebrandt Ruiz, *University of Texas at Austin*

8AC.8 11:15 **Peroxy Radical Isomerization of a Model Organic Compound Under Laboratory Chamber Conditions.** MATTHEW GOSS, Victoria Barber, Yaowei Li, Alexander Zaytsev, Erik Helstrom, Francesca Majluf, Jordan Krechmer, Frank Keutsch, Jesse Kroll, *MIT*

8AC.9 11:15 **The Impact of Temperature on Organic Peroxy Radical Isomerization and Aerosol Production.** NADIA TAHSINI, Matthew Goss, Jesse Kroll, *MIT*

8AC.10 11:30 **A Study on Elevated Concentration of Fine Particles at Urban and Agricultural Sites in Korea.** JIHO JANG, Haebum Lee, Minhan Park, Joonwoo Kim, Nohhyeon Kwak, Taewoong Gong, Ilhwa Seo, Dahye Oh, Seunghye Lee, Kihong Park, *Gwangju Institute of Science and Technology*

8AC.11 11:30 **Significant Contrasts in Aerosol Acidity between China and the United States.** BINGQING ZHANG, Huizhong Shen, Pengfei Liu, Hongyu Guo, Yongtao Hu, Yilin Chen, Shaodong Xie, Ziyan Xi, T. Nash Skipper, Armistead G. Russell, *Georgia Institute of Technology*

8AC.12 11:30 **Chemical Composition of Submicron Organic Aerosol in Rural Environment: A Long-Term Study.** TOUQEER GILL, Julija Pauraite, Steigvilė Byčenkienė, Kristina Plauškaitė, *SRI Center for Physical Sciences and Technology*

8HA HEALTH RELATED AEROSOLS IV

Krystal Politt and Yu Feng, chairs

8HA.1 10:45 **Characterizing Potash Rock Dust Generated from Full Scale Cutting Tests Performed with Three Different Radial Pick Wears.** SYD SLOUKA, Muhammad Ishaq, Jamal Rostami, Jürgen Brune, *Colorado School of Mines*

8HA.2 10:45 **Hygroscopicity and Shape Factor Measurements of Uric Acid Aerosol Towards the Treatment of Medical Conditions.** DEWANSH RASTOGI, Kanishk Gohil, Chao Peng, Mingjin Tang, Akua Asa-Awuku, *University of Maryland College Park*

8HA.3 10:45 **Particle and Toxin Filtration Efficiencies of Commercially Available Face Masks and Air Conditioning Filters to Reduce Exposure to and Health Impacts of Aerosolized Algal Toxins.** CASSANDRA GASTON, Haley Royer, Raymond Leibensperger III, Michael Sheridan, Jiaming Hu, Kaycie Lanpher, Daniela Maizel, Helena Solo-Gabriele, Grace Zhai, Larry Brand, Alberto Caban-Martinez, Kimberly Popendorf, *University of Miami*

8HA.4 11:00 **Investigation of Microscreen System for Fiber Length Classification.** BON KI KU, Pramod Kulkarni, *Centers for Disease Control and Prevention, NIOSH*

8HA.5 11:00 **Development of a Semi-automated Instrument to Measure the Cellular Reactive Oxygen Species (ROS) Activity of Ambient Particulate Matter.** SUDHEER SALANA, Yixiang Wang, Joseph V Puthussery, Haoran Yu, Vishal Verma, *University of Illinois at Urbana-Champaign*

8HA.6 11:00 **Assessing the Effectiveness of a Novel Negative-Pressure Particle Containment Device for Reducing Respiratory Particles during Intubation.** MUCHUAN NIU, Liqiao Li, Haoxuan Chen, Peyton Tebon, John Shin, Tristan Grogan, Nir Hoftman, Yifang Zhu, *University of California, Los Angeles*

8HA.7 11:15 **Linkage between Multiple Cellular Responses with Reactive Oxygen Species Production from Exposure to Biogenic and Anthropogenic Secondary Organic Aerosols.** FOBANG LIU, Tianchang Xu, Nga Lee Ng, Hang Lu, *Georgia Institute of Technology*

8HA.8 11:15 **Aerosol Composition and Chemistry in Electronic Cigarettes in Response to Coil Temperature and E-liquid Formulation.** Yichen Li, Belinda Ortega, Amanda Burns, Lillian Tran, Karizza Abellar, Morgan Poindexter, Xiaohan Li, Brian Brandley, George Hodgin, Amy Madl, Kent Pinkerton, TRAN NGUYEN, *University of California, Davis*

8HA.9 11:15 **Cokriging With a Low-cost Air Sensor Network to Estimate Spatial Variation of Brake and Tire-wear Related Heavy Metals and Reactive Oxygen Species in Southern California, United States.** JONATHAN LIU, Irish del Rosario, Jonah Lipsitt, Farzan Oroumiyeh, Jiaqi Shen, Suzanne E. Paulson, Beate Ritz, Jason Su, Scott Weichenthal, Yifang Zhu, Michael Jerrett, *University of California, Los Angeles*

8HA.10 11:30 **Health Risk Assessment and Chemical Characterization of Settling Dust Exposed to Children: A Case Study of Primary School at Karachi, Pakistan.** SAIYADA MASOOD, Sumayya Saied, Farheen Anwar, Azhar Siddique, Kamran Khan, Haider Khwaja, *Jinnah University for Women*

8HA.11 11:30 **Association of Short-Term Exposure to Air Pollution and Heart Rate Variability for a Healthy Cohort in a Highly Polluted City of Delhi.** KASHISH JAIN, Gazala Habib, Nisar Ali Baig, Mohammad Yawar, Sandeep Singh, Siddharthan Deepti, *Indian Institute of Technology, Delhi*

8IM INSTRUMENTATION & METHODS V

Cari Dutcher and Shantanu Jathar, chairs

8IM.1 10:45 **Excitation Emission Matrix Fluorescence Spectroscopy for Analysis of Reactive Oxygen Species from Particulate Matter Samples.** ISHRAT SINGH, Jiayang He, Michael Paulsen, Igor Novosselov, Christopher Simpson, *University of Washington*

8IM.2 10:45 **Development of an Inexpensive Spark-Induced Breakdown Spectroscopy Instrument for Measurements of Atmospheric Toxic Metals.** HANYANG LI, Leonardo Mazzei, Christopher Wallis, Anthony S. Wexler, *University of California, Davis*

8IM.3 10:45 **Enhanced Optical- and Atomic Force Microscopy- Photothermal Infrared and Raman Spectroscopy Enables Observation of Individual Ultrafine Aerosol Particles.** YAO XIAO, Ziying Lei, Andrew Ault, *University of Michigan*

8IM.4 11:00 **High-Throughput Microfluidic Device to Study Ice Nucleation Behavior.** MARGARET HOUSE, Priyatanu Roy, Cari Dutcher, *University of Minnesota*

8IM.6 11:00 **Measurement of the Rate and Controls of Small Particle Growth Using Ambient Air Captive Aerosol Chambers.** ZIHAN ZHU, Xuanlin Du, Candice Sirmollo, Diana Ibarra-Gomez, Don Collins, *University of California, Riverside*

8IM.7 11:15 **Design and Laboratory Evaluation of a New Flow Reactor to Study Aerosol Production and Processing through Gas- and Aqueous-phase Chemistry.** NINGJIN XU, Don Collins, *University of California, Riverside*

8IM.8 11:15 **New Insights into Complex Atmospheric Chromatograms Enabled by Advanced Data Processing Techniques.** SUNGWOO KIM, Lindsay Yee, Allen Goldstein, Nathan Kreisberg, Susanne Hering, Gabriel Isaacman-VanWertz, *Virginia Tech*

8IM.9 11:15 **Development and Performance Evaluation of "Chemspot" Instrument for the Characterization of Organic Aerosol.** PURUSHOTTAM KUMAR, James Hurley, Nathan Kreisberg, Braden Stump, Susanne Hering, Pat Keady, Gabriel Isaacman-VanWertz, *Virginia Tech*

8IM.10 11:30 **Optimization Study of a Thermal Ambient Desorption Source to Improve Sensitivity for Fragile Heritage Objects and Conservation.** MICHAEL BUCHANAN, Xi Chen, Viraj Gandhi, Asher Newsome, Carlos Larriba-Andaluz, *IUPUI*

8IM.12 11:30 **Numerical Modeling of the Transport and Fate of Ice Nucleating Particles Inside a Continuous Flow Diffusion Chamber.** JORDAN SPENCER, Russell Perkins, Ezra Levin, Gavin McMeeking, Shantanu Jathar, *Colorado State University*

8SS SPECIAL SYMPOSIUM: AEROSOL STANDARDS I

Chris Zangmeister and Jason Olfert, chairs

8SS.1 10:45 **CPMA-Electrometer Reference Mass Standard (CERMS): A Traceable Calibration Method for Aerosol Mass Concentration Instruments.** GREGORY SMALLWOOD, Joel Corbin, Jason S. Olfert, Prem Lobo, *National Research Council Canada*

8SS.2 10:45 **Optimized Sampling Settings and Reconstructions for Tandem Particle Mass Analyzer and Single Particle-Soot Photometer Measurements.** Arash Naseri, Timothy Sipkens, Steven Rogak, JASON S. OLFERT, *University of Alberta*

8SS.3 10:45 **Matrix-Based Inversion of Humidified Tandem DMA Data.** MARKUS PETTERS, *North Carolina State University*

8SS.4 11:00 **The Particles We Don't Count Can Significantly Bias Optical Measurements.** CHUN-NING MAO, Akua Asa-Awuku, James Radney, Christopher Zangmeister, *University of Maryland*

8SS.5 11:00 **Calibration vs. Validation: Definitions, Best Practices, and Options in the Field.** ANDREA J. TIWARI, Sebastian Schmitt, Torsten Tritscher, Juergen Spielvogel, Axel Zerrath, *TSI Incorporated*

8SS.6 11:00 **Demonstration of a Calibration Standard for Aerosol Absorption Methods.** CHRISTOPHER ZANGMEISTER, James Radney, *National Institute of Standards and Technology*

8SS.7 11:15 **A Comprehensive Test Standard for Indoor Air Quality Low-Cost PM2.5 Sensors.** WILTON MUI, Xiaobi M. Kuang, Sahil Bhandari, Vasileios Papapostolou, Andrea Polidori, *South Coast Air Quality Management District*

8SS.9 11:15 **Performance of Correction Models for Accurate PM2.5 Estimation from Low-Cost Air Quality Sensor Data.** DINUSHANI SENARATHNA, Vijay Kumar, Shantanu Sur, Suresh Dhaniyala, Supraja Gurajala, Sumona Mondal, *Clarkson University, Potsdam*

8SS.10 11:30 **Ammonium Sulfate: Good for Optical Diagnostics but Not Quite Good Enough for Calibration.** JAMES RADNEY, Christopher Zangmeister, Chun-Ning Mao, Akua Asa-Awuku, *National Institute of Standards and Technology*

8SS.11 11:30 **Improvements to the Virkkula Filter Correction Algorithm for Measuring Carbonaceous Aerosol Optical Properties.** THEO PAIK, Patrick Sheridan, Rajan K. Chakrabarty, *Washington University in St. Louis*

8UA URBAN AEROSOLS II

Faye McNeill and Dan Westervelt, chairs

8UA.1 10:45 **New Application of Gaussian Mixture Regression to Bias-Correct Low Cost PM2.5 Monitoring Data in sub-Saharan Africa.** Celeste McFarlane, DANIEL WESTERVELT, *Columbia University*

8UA.2 10:45 **Evaluating the Influence of Residential Wood Burning PM2.5 Emissions throughout the South Coast Air Basin.** XIANG LI, Melissa Maestas, Kyrstin Fornace, Scott A. Epstein, *South Coast Air Quality Management District*

8UA.3 10:45 **Investigating PM2.5 Composition and Sources in the San Joaquin Valley of California Using a ToF-ACSM with the Capture Vaporizer.** Peng Sun, Ryan Farley, Lijuan Li, Deepchandra Srivastava, Christopher Niedek, Jianjun Li, Ningxin Wang, Christopher Cappa, Sally Pusede, Zhenhong Yu, Philip Croteau, QI ZHANG, *University of California, Davis*

8UA.5 11:00 **Spatial Characterization of the Composition and Sources of Submicron Aerosols in the Corpus Christi - San Antonio Area Based on Mobile Measurements.** SHAN ZHOU, Fangzhou Guo, James Flynn, Sascha Usenko, Subin Yoon, Sergio Alvarez, Sujan Shrestha, Rebecca J. Sheesley, Manisha Mehra, Meghan C. Guagenti, Chun-Ying Chao, Robert Griffin, *Rice University*

8UA.6 11:00 **Elucidating Sources of Midday Ultrafine Particles in a Major City.** HOSNA MOVAHHEDINIA, Nathan Hilker, Cheol H. Jeong, Greg J. Evans, *SOCAAR, University of Toronto*

8UA.7 11:15 **Trends of Submicron Atmospheric Aerosol Number Concentrations - Effect of Legislative Regulations and Economic Transformations.** Nadežda Zíková, PETRA POKORNÁ, Zdenek Wagner, Jakub Ondráček, Philip K. Hopke, *ICPF CAS, Prague, Czech Republic*

8UA.8 11:15 **Concentrations of Atmospheric VOCs Emitted from Fireworks in Southwest Mexico City Measured by a Real-time Vocus PTR-TOF-MS.** MARGARITA PALACIOS-ARREOLA, Maribel Hernández-Camarillo, Jessica Ortiz-Gutiérrez, Pawel K. Misztal, Omar Amador-Muñoz, *Universidad Nacional Autónoma de México*

8UA.9 11:15 **Characterization of Urban Aerosol Sulfate Sources in Summer Using High-Resolution Aerosol Mass Spectrometry.** FANGZHOU GUO, Alexander Bui, Benjamin Schulze, Henry Wallace, Matthew H. Erickson, Sergio Alvarez, Sujan Shrestha, Subin Yoon, Rebecca J. Sheesley, Sascha Usenko, James Flynn, Robert Griffin, *Rice University*

8UA.10 11:30 **Enhanced Aerosol Particle Growth Sustained by High Continental Chlorine Emission in India.** Sachin S. Gunthe, PENGFEI LIU, Upasana Panda, Subha S. Raj, Amit Sharma, Eoghan Darbyshire, Ernesto Reyes Villegas, James Allan, Ying Chen, Xuan Wang, Shaojie Song, Mira L. Pöhlker, Liuhua Shi, Yu Wang, Snehitha M. Kommula, Tianjia Liu, R. Ravikrishna, Gordon McFiggans, Loretta Mickley, Scot T. Martin, Ulrich Pöschl, Meinrat O. Andreae, Hugh Coe, *Georgia Institute of Technology*

8UA.11 11:30 **Trends, Performance, and In-Field Calibration for Low Cost Particulate Matter Sensors in West Bengal, India.** V. FAYE MCNEILL, Anindita Dutta, Sandhya Sethuraman, Siddharth Nobell, Rakhi Basu, Sarbani Palit, Daniel Westervelt, Debasis Dasgupta, Shairik Dasgupta, *Columbia University*

8UA.12 11:30 **Intra and Inter-Urban Variability in Chemical Characteristics of Fine Particulate Matter in Metropolitan Cities in India.** PRINCE VIJAY, Shreya Dubey, Harish C Phuleria, *Indian Institute of Technology Bombay*

Wednesday 11:45 AM - 1:00 PM
Lunch Break

Wednesday 1:00 PM - 2:00 PM
Session 9: Platform

9AC AEROSOL CHEMISTRY IX

Andy Lambe and Albert Presto, chairs

9AC.1 1:00 **Evidence that Halogen Bonding Catalyzes the Heterogeneous Chlorination of Alkene Aerosols.** MEIRONG ZENG, Kevin R. Wilson, *Lawrence Berkeley National Laboratory*

9AC.2 1:00 **Volatile Organic Acid Formation from the Aqueous and Heterogeneous Oxidation of Isoprene-Derived Organic Aerosol Compounds.** James Cope, Karizza Abellar, Kelvin Bates, Xuan Fu, TRAN NGUYEN, *University of California, Davis*

9AC.3 1:00 **Acid-Catalyzed Aging of Secondary Organic Aerosols.** CYNTHIA WONG, Sergey Nizkorodov, *University of California, Irvine*

9AC.4 1:15 **Evolving Toxicity Of Heterogeneously Oxidized Benzo[a]pyrene Aerosol Particles.** AMY HRDINA, James Rowe, Simran Kaushal, Bevin Engelward, Jesse Kroll, *MIT*

9AC.5 1:15 **Chemical Modification of Protein Exposed to Urban Air.** RACHEL L. DAVEY, Erick Mattson, J. Alex Huffman, *University of Denver*

9AC.6 1:15 **Quantitative Analysis on the Relationship between Aerosol Optical Properties and Chemical Composition in Urban Areas.** PAULO ARTAXO, Djacinto Monteiro dos Santos, Bruno Backes Meller, Milena Ponczek, *University of Sao Paulo*

9AC.7 1:30 **Observations of Oxidized and Reduced Nitrogen-Containing Gases and Particles via Liquid Chromatography at a Coastal Downwind Site Demonstrate the Prevalence of Reduced Nitrogen Molecular Features.** DREW GENTNER, Jenna Ditto, Jo Machesky, *Yale University*

9AC.8 1:30 **Synergistic Multiphase Chemistry of Isoprene Hydroxy Hydroperoxides (ISOPOOH) with Sulfur Dioxide in Acidic Sulfate Aerosols Leading to Secondary Inorganic and Organic Aerosol Formation.** YUE ZHANG, Jin Yan, Yuzhi Chen, N. Cazimir Armstrong, Zhenfa Zhang, Avram Gold, Barbara Turpin, Jason Surratt, *University of North Carolina at Chapel Hill*

9AC.9 1:30 **Secondary Organic Aerosol Formation and Chemical Composition from Biogenic Oxygenated Terpenes.** FARZANEH KHALAJ, Véronique Perraud, Shan Gu, Celia Faiola, *University of California, Irvine*

9AC.10 1:45 **Low Secondary Organic Aerosol Production from Oxygenated Volatile Chemical Products.** MACKENZIE HUMES, Mingyi Wang, Sunhye Kim, Jo Machesky, Drew Gentner, Allen Robinson, Neil Donahue, Albert A. Presto, *Carnegie Mellon University*

9AC.11 1:45 **Comprehensive Product Characterization in the OH Oxidation of Dimethyl Sulfide: Effects of RO2 Fates on Sulfur Distribution.** QING YE, Matthew Goss, Jordan Krechmer, Yaowei Li, Francesca Majluf, Alexander Zaytsev, Joseph Roscioli, Manjula Canagaratna, Frank Keutsch, Colette L. Heald, Jesse Kroll, *MIT*

9IM INSTRUMENTATION & METHODS VI

Fan Mei and Markus Knoll, chairs

9IM.1 1:00 **A Photothermal Sensor Concept for Black Carbon Mass Concentration Measurement.** ULRICH RADESCHNIG, Markus Knoll, Benjamin Lang, Alexander Bergmann, *Graz University of Technology*

9IM.2 1:00 **Performance of Black Carbon Instruments for Extractive Remote Emission Sensing.** MARKUS KNOLL, Benjamin Lang, Alexander Bergmann, *Graz University of Technology*

9IM.3 1:00 **Performance Assessment and Field Operation of a Portable Optical Particle Spectrometer (POPS).** FAN MEI, Mikhail Pekour, Jason Tomlinson, Beat Schmid, Darielle Dexheimer, Casey Michael Longbottom, *Pacific Northwest National Laboratory*

9IM.4 1:15 **A Simulated Respiratory System for Secondhand Smoke Generation and Aerosol Toxicological Studies.** WEIXING HAO, Kapiamba Kashala Fabrice, Huang Yue-Wern, Yang Wang, *Missouri University of Science and Technology*

9IM.5 1:15 **Using Soft Aerosolization and Sampling Techniques for the Conservation of Virus Infectivity during Airborne Exposure Experiments.** GHISLAIN MOTOS, Kalliopi Violaki, Aline Schaub, Shannon David, Tamar Kohn, Athanasios Nenes, *EPFL, LAPI, Lausanne*

9IM.6 1:15 **Size Distribution and Electrostatic Charge Measurements for Disinfectant Droplets of Electrosprays.** QINGFENG CAO, Seong Chan Kim, Qisheng Ou, Chenxing Pei, David Y. H. Pui, *University of Minnesota*

9IM.7 1:30 **Using CFD Method to Study the Particle Transportation Characteristics through a Critical Orifice.** DA YANG, Suresh Dhaniyala, Pedro Campuzano-Jost, Jose-Luis Jimenez, Dongwook Kim, Hongyu Guo, *Clarkson University*

9IM.8 1:30 **Evaluation of Electro-sprayer Performance by Using Fluorescent Tracer.** DONGBIN KWAK, Seong Chan Kim, Thomas H. Kuehn, David Y. H. Pui, *University of Minnesota*

9IM.10 1:45 **Characterization and Application of a Novel Wide-Range SMPS.** Sebastian Schmitt, AXEL ZERRATH, Torsten Tritscher, Jacob Scheckman, Amine Koched, Juergen Spielvogel, Thomas Krinke, Oliver F. Bischof, *TSI Incorporated*

9IM.11 1:45 **Development of a Humidified Single Scattering Albedometer (H-CAPS-PMssa).** CHRISTIAN CARRICO, Tyler Capek, Kyle Gorkowski, Allison Aiken, Claudio Mazzoleni, Manvendra Dubey, *New Mexico Institute of Mining and Technology*

9IM.12 1:45 **A Laminar Gas Inlet for High-speed Aircraft Sampling.** DA YANG, Suresh Dhaniyala, Rainer Volkamer, Roy Lee III Mauldin, *Clarkson University*

9SS SPECIAL SYMPOSIUM: AEROSOL STANDARDS II

Jimmy Radney and Jim Smith, chairs

9SS.1 1:00 **Improving Quantitative Analysis of Spark-Induced Breakdown Spectroscopy: Multivariate Calibration of Toxic Metal Particles Using Machine Learning.** HANYANG LI, Leonardo Mazzei, Christopher Wallis, Anthony S. Wexler, *University of California, Davis*

9SS.2 1:00 **Characterising the Silver Particle Generator: The New Silver Standard.** MARTIN IRWIN, Jacob Swanson, Vincius Berger, Umesh Sonkamble, Adam M Boies, Hans-Joachim Schulz, *Catalytic Instruments*

9SS.3 1:00 **Developing Particle Standards to Improve Measurement and Model Performance.** JAMES SMITH, Nicole Riemer, Chongai Kuang, Manjula Canagaratna, Philip Croteau, Cassandra Gaston, Jose-Luis Jimenez, Murray Johnston, Arthur J. Sedlacek, Ernie R. Lewis, Christopher Cappa, Yan Feng, Rajan K. Chakrabarty, Markus Petters, Paul DeMott, *University of California, Irvine*

9SS.4 1:15 **Characterization and Quantification of Novel Ambient Organic Aerosol Compounds using Machine Learning and the UCB-GLOBES Mass Spectral Database.** EMILY FRANKLIN, Lindsay Yee, Robert Weber, Paul Grigas, Allen Goldstein, *University of California, Berkeley*

9SS.5 1:15 **Optical and Physical Properties of Manufactured Carbon Black Particles.** TIMOTHY ONASCH, Brian Heffernan, Richard Miake-Lye, Andrew Freedman, *Aerodyne Research, Inc.*

9SS.6 1:15 **Evaluating the Consistency of All Submicron Aerosol Mass Measurements (Total and Speciated) for the NASA Atmospheric Tomography Aircraft Mission (ATom).** HONGYU GUO, Pedro Campuzano-Jost, Benjamin A. Nault, Douglas Day, Jason Schroder, Jack Dibb, Eric Scheuer, Maximilian Dollner, Bernadett Weinzierl, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*

9SS.7 1:30 **An Inter-Laboratory Evaluation of New Multi-Element Reference Materials for Atmospheric Particulate Matter Measurements.** NICOLE HYSLOP, Krystyna Trzepla, Sinan Yatkin, Warren White, Travis Ancelet, Perry Davy, Owen Butler, Michel Gerboles, Steven Kohl, Andrea McWilliams, Laura Saucedo, Marco Van Der Haar, Armand Jonkers, *University of California Davis*

9SS.8 1:30 **Is It Possible to Overcome the Lack of Authentic Standards in Quantification of Biogenic Secondary Organic Aerosol Tracers?** DANIEL BRYANT, Alfred Mayhew, Sri Hapsari Budisulistiorini, David Topping, Andrew Rickard, Jacqueline Hamilton, *University of York*

9SS.9 1:30 **Predicting Glass Transition Temperature and Viscosity of Organic Molecules via Machine Learning and Molecular Embeddings.** TOMMASO GALEAZZO, Manabu Shiraiwa, *University of California, Irvine*

9SW SPECIAL SYMPOSIUM: WILDFIRE AEROSOLS I

Amara Holder and Gregory Schill, chairs

9SW.1 1:00 **Examination of Smoke Marker Ratios from Wildfires.** AMY P. SULLIVAN, Sonia Kreidenweis, Emily Fischer, Bret Schichtel, Jeffrey Collett, *Colorado State University*

9SW.2 1:00 **Photolysis of Biomass Burning Organic Aerosol, Chemical Transformations and Photo-Bleaching.** RACHEL O'BRIEN, Hongmin Yu, Natalie Warren, Marley Adamek, Aron Jaffe, Christopher Lim, Christopher Cappa, Jesse Kroll, Carolyn Jordan, Bruce Anderson, *William & Mary*

9SW.3 1:00 **Dilution and Photooxidation Driven Processes Explain the Evolution of Organic Aerosol in Wildfire Plumes.** ALI AKHERATI, Charles He, Lauren A. Garofalo, Anna Hodshire, Delphine K. Farmer, Sonia Kreidenweis, Wade Permar, Lu Hu, Emily Fischer, Coty Jen, Allen Goldstein, Teresa Campos, Mike Reeves, Darin Toohey, Jeffrey R. Pierce, Shantanu Jathar, *Colorado State University*

9SW.4 1:15 **Using Low-Cost Sensors to Trace Biomass Burning Aerosol Plumes from Wildfires in Southern California.** DANIELLE ROCCO, Esther Morales, Jaebin Ju, Linh Luu, Daniel B. Curtis, *California State University, Fullerton*

9SW.5 1:15 **Using Low-Cost Air Sensors to Assess Community Level PM Exposure from California Wildfires.** AMBER KRAMER, Jonathan Liu, Liqiao Li, Yifang Zhu, *University of California, Los Angeles*

9SW.6 1:15 **Use of a Low-Cost PM Sensor Network to Characterize the Impact of 2020 Washington Wildfire on Indoor Air Quality and Personal Exposure.** CHING-HSUAN HUANG, Nanhsun Yuan, Jiayang He, Mei-Yu Liao, Selina Teng, Igor Novosselov, *University of Washington*

9SW.7 1:30 **Effects of Wildfires on Outdoor Black Carbon Level to Indoor Air Quality.** DARIA PASHNEVA, Julija Pauraite, Agnė Minderytė, Inga Garbarienė, Vadimas Dudoitis, Kristina Plauškaitė, Simonas Kecorius, Gediminas Mainelis, Jurgita Ovadnevaite, Steigvilė Byčenkienė, *SRI Center for Physical Sciences and Technology*

9SW.8 1:30 **Quantifying the Impacts of Traffic-Related Air Pollution (TRAP) and Wildfire Smoke on Indoor and Outdoor Air Quality in Daycare Settings: A Pilot Study.** Melanie MacArthur, Emily Peterson, Linda Dix-Cooper, NAOMI ZIMMERMAN, *University of British Columbia*

9SW.9 1:30 **Toxic Emissions from Fires at the Wildland Urban Interface: Laboratory Measurement of Formaldehyde and Aerosol from Building Materials.** KATHERINE BENEDICT, James E. Lee, Kyle Gorkowski, Manvendra Dubey, Allison Aiken, *Los Alamos National Laboratory*

9SW.10 1:45 **Quantifying the Health Benefits of Respirators and Face Coverings to Mitigate Exposure to Wildfire Air Pollution.** JACK KODROS, Kate O'Dell, Jon Samet, Christian L'Orange, Jeffrey R. Pierce, John Volckens, *Colorado State University*

9SW.11 1:45 **2020 California Wildfire Smoke in New Mexico: Characterization and Toxicological Studies Reveal Signs of Neurological Aging and Inflammation.** David Scieszka, Russell Hunter, Jessica Begay, Marsha Bitsui, Yan Lin, Joseph Galewsky, Masako Morishita, Zachary Klaver, James Wagner, Jack Harkema, Guy Herbert, Selita Lucas, Charlotte McVeigh, Alicia Bolt, Barry Bleske, Andrew Ottens, Haiwei Gu, Shahani Noor, MATTHEW CAMPEN, *University of New Mexico*

9SW.12 1:45 **Assessing the Impact of Wildfire PM2.5 on Indoor Air Quality with Crowdsourced PurpleAir Sensor Data in California.** YUTONG LIANG, Deep Sengupta, Mark Campmier, Joshua S. Apte, Allen Goldstein, *University of California, Berkeley*

9UA URBAN AEROSOLS III

Jean Rivera Rios and Marwa El-Sayed, chairs

9UA.1 1:00 **Using Rain Washoff to Estimate Dry Deposition of Atmospheric Aerosols to Horizontal Urban Surfaces.** ALEXANDER JOHNSON, Cliff Davidson, *Syracuse University*

9UA.2 1:00 **Impact of Forest Belts on Reducing Desert Dust Concentration in Urban and Suburban Areas.** OFIR VADAS, Boris Krasovitov, Andrew Fominykh, Avi Levy, Itzhak Katra, *Ben-Gurion University of the Negev, Israel*

9UA.3 1:00 **The Impact of Sea Breeze and Precipitation on Particulate Matter Concentrations in Houston.** CHUN-YING CHAO, Marina Karki, Wei Li, Yuxuan Wang, Robert Griffin, *Rice University*

9UA.5 1:15 **The Relative Influence of Roadway and Harbor Particle Sources before and during COVID-19 Related Lockdown in Charleston, South Carolina.** ROBY GREENWALD, Eleanor Clarke, *Georgia State University*

9UA.6 1:15 **Ultrafine Particle Ground-Level Impacts during Aircraft Approach and Climb Out Operations at a Major Cargo Hub.** MARYSSA LOEHR, Jay R. Turner, *Washington University in St. Louis*

9UA.7 1:30 **Effect of the COVID-19 Pandemic on Aerosol Composition in Atlanta, GA.** JEAN RIVERA-RIOS, Taekyu Joo, Tianchang Xu, Masayuki Takeuchi, Chris Peng, Leah Williams, Philip Croteau, John Jayne, Jennifer Kaiser, Nga Lee Ng, *Georgia Institute of Technology*

9UA.8 1:30 **Assessing the Impact of Industrial Activities on Ambient Air Particulate Matter in East Java, Indonesia.** MUHAYATUN SANTOSO, Philip K. Hopke, Diah Dwiana Lestiani, Endah Damastuti, Syukria Kurniawati, Didin Agustian Permadi, Arie Dipareza Syafei, *Center for Applied Nuclear Science and Technology, BATAN*

9UA.9 1:30 **Contrasting the Impact of Traffic Changes on Air Quality During the COVID-19 Lockdowns in Maryland and Florida.** KIARA MEGGITT-GOFF, Mariel Judd, Tate Grant, Scott Parr, Marwa El-Sayed, *Embry-Riddle Aeronautical University*

9UA.10 1:45 **Multi-dimensional Characterization of Particulate Matter Low-cost Sensors in Florida.** Jasper Bowles, Marc Compere, Kevin Adkins, MARWA EL-SAYED, *Embry-Riddle Aeronautical University*

9UA.11 1:45 **Discovery of Atmospheric Microplastic Particles in Urban Emissions.** ANA MORALES, Jay Tomlin, Christopher West, Yoorae Noh, Andrew Whelton, Alexander Laskin, *Purdue University*

9UA.12 1:45 **Identifying Patterns and Sources of Urban Ultrafine Particulate Matter Using Mobile Measurements of Lung-Deposited Surface Area.** RISHABH SHAH, Lauren Padilla, Daniel Peters, Megan Dupuy-Todd, Elizabeth Fonseca, Geoff Ma, Rod Jones, Jim Mills, Nick Martin, Ramon Alvarez, *Environmental Defense Fund*

Wednesday 2:00 PM - 4:00 PM
Chatroom Open

Thursday

Thursday 8:00 AM - 9:15 AM
Plenary IV

8:00 **Mechanisms of Nanoparticle Formation and their Health Effects** Angela Violi, *University of Michigan*

Moderator Matti Maricq, *Ford Motor Company*

9:00 **Sinclair Award Presentation, Liu Award Presentation** Sheryl Ehrman, Awards Committee Chair, *San Jose State University*

Thursday 9:30 AM - 10:30 AM
Session 10: Platform

10BA BIOAEROSOLS I

Gediminas Mainelis and Tiina Reponen, chairs

10BA.2 9:30 **Tracking Antimicrobial Resistance Genes across Canada: Coast-to-Coast-to-Coast.** PAUL GEORGE, Marc Veillette, Amélia Bélanger Cayouette, Mahsa Baghdadi, Maosheng Yao, Nathalie Turgeon, Jacques Corbeil, Caroline Duchaine, *Université Laval*

10BA.3 9:30 **Investigating the Effects of Environmental Factors on the Spread of Antibiotic Resistant Bacteria in a Dairy Facility.** HYOUNGMOOK PAK, Maria King, *Texas A&M University*

10BA.5 9:45 **Passive Bioaerosol Samplers: Efficient Tools for Long-Term and Spatially Distributed Sampling.** SYDONIA MANIBUSAN, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

10BA.6 9:45 **Rapid Detection of Single Bioaerosol Particles Using Circular Intensity Differential Scattering (CIDS).** YONG-LE PAN, Aimable Kalume, Jessica Arnold, Chuji Wang, Joshua Santarpia, *U.S. Army Research Laboratory*

10BA.8 10:00 **Environmental Effects Triggering Antibiotic Resistance in Bacteria.** BROOKE SMITH, Maria King, *Texas A&M University*

10BA.9 10:00 **Exposure to Bacterial Aerosols with Antimicrobial Resistance Surrounding Septic Systems.** GABRIELA RAMOS, Maria King, *Texas A&M University*

10BA.10 10:15 **Estimating SARS-CoV-2 Infection Risk in University Residence Halls Using CO2 Pulse Injections.** Daniel Amparo, RYAN MORAVEC, Barbara Turpin, Glenn Morrison, *UNC-Chapel Hill*

10BA.11 10:15 **SARS-CoV-2 in Residential Rooms of Two Self-Isolating Young Persons with COVID-19.** SRIPRIYA NANNU SHANKAR, Chiran Witanachchi, Alyssa Morrea, John Lednicky, Julia Loeb, Md. Mahbubul Alam, Z. Hugh Fan, Arantzazu Eiguren-Fernandez, Chang-Yu Wu, *University of Florida*

10CC AEROSOLS, CLOUDS, AND CLIMATE I

Miriam Freedman and Markus Petters, chairs

10CC.1 9:30 **How Do Measurements of Single Particle Composition Constrain Gas-Particle Exchange?** DANIEL MURPHY, Karl D. Froyd, Charles Brock, Agnieszka Kupc, Gregory Schill, Christina Williamson, *NOAA CSL*

10CC.2 9:30 **Estimation of Aerosol Direct Radiative Effect through CATCH-derived Aerosol Types.** BETHANY SUTHERLAND, Nicholas Meskhidze, *NC State University*

10CC.4 9:45 **Characterizing the Vertical Transport of Aerosols During Deep Convective Events.** CHANAKYA BAGYA RAMESH, Dié Wang, Scott Giangrande, Jian Wang, Yang Wang, *Missouri University of Science and Technology*

10CC.5 9:45 **Turbulent Flux Measurements of the Near-surface and Residual-layer Nucleation Particles.** NICHOLAS MESKHIDZE, Markus Petters, Mohammad Maksimul Islam, *North Carolina State University*

10CC.7 10:00 **Aircraft Measurements of Single Particle Size and Composition Reveals Real-world Mixing State Necessary to Explain Activation Fraction during HI-SCALE.** GEORGES SALIBA, David Bell, Kaitlyn J. Suski, John Shilling, Fan Mei, Gourihar Kulkarni, Adam Varble, Johannes Muelmenstaedt, Jian Wang, Jason Tomlinson, Jerome Fast, Alla Zelenyuk, *Pacific Northwest National Laboratory*

10CC.8 10:00 **Measurements of Hygroscopic and Optical Properties of Size Selected Gray Carbon Aerosols: A New Empirical Function to Estimate Radiative Forcing.** TYLER CAPEK, Christian Carrico, Kyle Gorkowski, James E. Lee, Katherine Benedict, Claudio Mazzoleni, Allison Aiken, Manvendra Dubey, *Michigan Technological University*

10CC.9 10:00 **Comparing Online and Offline Measurements of Ice-Nucleating Particles from Two Autumn Field Campaigns.** ELISE WILBOURN, Larissa Lacher, Hemanth Sandeep Kumar Vepuri, Jens Nadolny, Ottmar Möhler, Naruki Hiranuma, *West Texas A&M University*

10CC.10 10:15 **Dynamic Mixing State Effects on the Hygroscopicity of Ammonium Sulfate – Water Soluble Organic Compound Mixtures.** PATRICIA RAZAFINDRAMBININA, Kotiba A. Malek, Kristin DiMonte, Tim Raymond, Dabrina Dutcher, Miriam Freedman, Akua Asa-Awuku, *University of Maryland*

10CC.11 10:15 **Phase Behaviour of Mixtures of Primary and Secondary Organic Aerosols.** FABIAN MAHRT, Elli Newman, Yuanzhou Huang, Julia Zaks, Yiming Qin, Paul Ohno, Scot T. Martin, Markus Ammann, Allan Bertram, *University of British Columbia*

10CC.12 10:15 **Atmospheric New Particle Formation from Gas Phase Reactions of Alkanolamines with Sulfuric Acid.** SANDRA FOMETE, Jack Johnson, Nanna Myllys, Coty Jen, *Carnegie Mellon University*

10IM INSTRUMENTATION & METHODS VII

Andrew Freedman and Brent Williams, chairs

10IM.1 9:30 **Beyond Positive Matrix Factorization: The Strengths and Weaknesses of 3D Factor Analysis Methods.** MICHAEL WALKER, Brent Williams, *Washington University in St. Louis*

10IM.2 9:30 **Airborne Flux Measurements of Ammonia over the Southern Great Plains.** SIEGFRIED SCHOBESBERGER, Emma D'Ambro, Ben H. Lee, Qiaoyun Peng, Mikhail Pekour, Jerome Fast, Joel A. Thornton, *University of Eastern Finland*

10IM.3 9:45 **Using Dynamic Principal Components to Analyze Mobile Particulate Matter Measurements.** BLAKE ACTKINSON, Robert Griffin, Katherine Ensor, *Rice University*

10IM.4 9:45 **Introducing the Culebra Aerosol Research Lidar Project.** JENS LAUTENBACH, Pedrina Terra, Josef Hoeffner, *Arecibo Observatory - UCF*

10IM.5 10:00 **Re-examination of the CAPS PMssa Monitor Scattering Channel Truncation.** Brian Heffernan, Stephen Jones, Timothy Onasch, ANDREW FREEDMAN, *Aerodyne Research, Inc.*

10IM.6 10:00 **Comparison of Particle Phase Data from FIGAERO CIMS and LTOF-AMS from Formation of Biogenic Particles in the CERN CLOUD Chamber.** BRANDON LOPEZ, Mingyi Wang, The CLOUD Collaboration, Neil Donahue, *Carnegie Mellon University*

10IM.7 10:15 **Sensor Environmental Test Chamber-2 (SEnTEc-2): Advancing Today's Sensor Testing to Meet Tomorrow's Sensor Needs.** DAVID HERMAN, Wilton Mui, Vasileios Papapostolou, Andrea Polidori, *South Coast Air Quality Management District*

10IM.8 10:15 **Assessment of Children's Personal and Land Use Regression Model-Estimated Exposure to NO2 in Springfield, Massachusetts.** DONG GAO, Sarah Esenther, Laura Minet, Alexander De Jesus, Tina Savvaides, Marianne Hatzopoulou, Krystal Godri Pollitt, *Yale University*

10SW SPECIAL SYMPOSIUM: WILDFIRE AEROSOLS II

Yongho Kim and Rachel O'Brien, chairs

10SW.1 9:30 **Optical Properties of Absorbing Aerosol Emitted from Biomass Burning.** YINGJIE SHEN, Rudra Pokhrel, Shane Murphy, Ezra Levin, Amy P. Sullivan, *University of Wyoming*

10SW.2 9:30 **Investigating Carbonaceous Aerosol and its Absorption Properties from Fires in the Western US (WE-CAN) and Southern Africa (ORACLES and CLARIFY).** THERESE CARTER, Colette L. Heald, Christopher Cappa, Jesse Kroll, Teresa Campos, Hugh Coe, Michael Cotterell, Nicholas Davies, Delphine K. Farmer, Cathryn Fox, Lauren A. Garofalo, Lu Hu, Justin Langridge, Ezra Levin, Shane Murphy, Rudra Pokhrel, Yingjie Shen, Kate Szpek, Jonathan Taylor, HuiHui Wu, *MIT*

10SW.3 9:30 **Investigating the Southeast Asian Haze Impacts on Urban Organic Aerosol Composition Using a High-Mass Resolution Spectrometry and Factor Analysis.** SRI HAPSARI BUDISULISTIORINI, Katie Balmer, Daniel Bryant, Liudongqing Yang, Jing Chen, Mikinori Kuwata, Jacqueline Hamilton, *University of York*

10SW.5 9:45 **Using Model Particle Systems to Constrain Atmospheric Particle "Glassiness" and Mixing Limitations.** LUKE HABIB, Neil Donahue, *Carnegie Mellon University*

10SW.7 10:00 **Transported African Wildfire Smoke Acts as Cloud Condensation Nuclei in the Tropical Atlantic Marine Boundary Layer.** HALEY ROYER, Mira L. Pöhlker, Ovid O. Krüger, Edmund Blades, Peter Sealy, Nurun Nahar Lata, Zezhen Cheng, Swarup China, Andrew Ault, Patricia Quinn, Hope Elliott, Patricia Blackwelder, Cassandra Gaston, *University of Miami*

10SW.9 10:00 **Aerosol Size Distribution Changes in Biomass Burning Plumes: The Competing Roles of Coagulation and OA Condensation/Evaporation.** NICOLE JUNE, Anna Hodshire, Elizabeth Wiggins, Richard Moore, Edward Winstead, Claire Robinson, Kenneth Thornhill, Kevin Sanchez, Demetrios Pagonis, Hongyu Guo, Pedro Campuzano-Jost, Jose-Luis Jimenez, Matthew Coggon, Sonia Kreidenweis, Shantanu Jathar, Jeffrey R. Pierce, *Colorado State University*

10SW.10 10:15 **High-intensity Forest Fires Emit High Concentrations of Diverse, Viable, and Ice-Nucleating Bioaerosols.** LEDA KOBZIAR, David Vuono, Rachel Moore, Timothy Dean, Doris Betancourt, Adam Watts, Brent Christner, Johanna Aurell, Brian Gullett, Adam Kochanski, Ali Tohidi, *University of Idaho College of Natural Resources*

10SW.11 10:15 **Impact of Wildfire Smoke and Biomass Burning on PAHs and Quinones.** ELIZABETH NOTH, Frederick Lurmann, Charles Perrino, David Vaughn, S. Katharine Hammond, *Environmental Health Sciences, SPH, UC Berkeley*

10SW.12 10:15 **Photolytic Mass Loss of Secondary Organic Aerosol (SOA) Derived from Furan Species.** NARA SHIN, Yuchen Wang, Taekyu Joo, Nga Lee Ng, Pengfei Liu, *Georgia Institute of Technology*

10UA URBAN AEROSOLS IV

R Subramanian and Jacqui Hamilton, chairs

10UA.1 9:30 **Simulation of SOA Formation from the Photooxidation of Long-chain Alkanes via Multiphase Reactions.** AZAD MADHU, Myoseon Jang, David Deacon, *University of Florida*

10UA.2 9:30 **Watching Paint Dry: Understanding I/VOC Emissions from Architectural Coatings and their Impact on SOA Formation.** Rebecca Tanzer Gruener, Liam D. Dugan, Mark E. Bier, Allen Robinson, ALBERT A. PRESTO, *Carnegie Mellon University*

10UA.3 9:30 **Key Role of NO3 Radicals in the Production of Isoprene Nitrates and Particulate Nitrooxyorganosulfates in Beijing.** JACQUELINE HAMILTON, Daniel Bryant, Peter Edards, Archit Mehra, Thomas J. Bannan, Alfred Mayhew, James Hopkins, James Lee, Mike Newland, Bin Ouyang, Andrew Rickard, *University of York*

10UA.4 9:45 **Air inequality: Global Divergence in Urban Fine Particulate Matter.** JOSHUA S. APTE, Sarah Seraj, Sarah Chambliss, Melanie Hammer, Veronica Southerland, Susan Anenberg, Aaron van Donkelaar, Randall Martin, Michael Brauer, *University of California, Berkeley*

10UA.5 9:45 **High-latitude Urban Air Quality: 20 Months of Aerosol Composition Data from Fairbanks, Alaska.** ELLIS ROBINSON, Michael Battaglia, Meeta Cesler-Maloney, James Campbell, Athanasios Nenes, Jason St. Clair, Jingqiu Mao, Rodney J. Weber, William Simpson, Peter F. DeCarlo, *Johns Hopkins University*

10UA.6 9:45 **Size-Segregated Ions and Carbonaceous Fractions of Ambient Aerosol in Bogota.** LADY MATEUS, Nestor Rojas, Kelly Burbano, Rodrigo Jimenez, *Universidad Nacional de Colombia*

10UA.7 10:00 **Aerosol Properties and Processing during Wintertime under Hazy Condition.** SUSAN MATHAI, Zezhen Cheng, Rhenton Brimberry, Nurun Nahar Lata, Swarup China, *Pacific Northwest National Laboratory*

10UA.8 10:00 **Seasonal Influence on Urban Particulate and Black Carbon Pollution: Winter, Summer, and Wildfire.** REBECCA A. SUGRUE, Chelsea V. Preble, James D.A. Butler, Thomas W. Kirchstetter, *University of California, Berkeley*

10UA.9 10:00 **Residential Wood Burning Aerosol Emissions and Secondary Aerosol Formation in the Wintertime Urban Atmosphere.** ANDREW HOLEN, Ryan Cook, Matthew Gunsch, Nathaniel May, Kathryn Kolesar, Kerri Pratt, *University of Michigan*

10UA.10 10:15 **What is the Value of Information from Low Cost Sensor Networks? Balancing Sampling and Instrument Uncertainty.** ROSE EILENBERG, R. Subramanian, Aliaksei Hauryliuk, Carl Malings, Albert Presto, Allen Robinson, *Carnegie Mellon University*

10UA.11 10:15 **Aerosol Loadings across Africa - Results and Lessons from the AfriqAir Network.** Michael R. Giordano, Julien Bahino, Matthias Beekmann, Thomas Bigala, Jimmy Gasore, Theobald Habineza, Aliaksei Hauryliuk, Carl Malings, Stuart Piketh, Albert A. Presto, Daniel Westervelt, Veronique Yoboue, Kofi Amegah, Emmanuel Appoh, Allison Hughes, Michael Gatari, Ezekiel Waiguru, James Nimo, Rebecca Garland, Pieter G. van Zyl, Miroslav Josipovic, R. SUBRAMANIAN, *OSU-EFLUVE, LISA/CNRS, UPEC, ENPC, UP*

10UA.12 10:15 **Characterization and Variability of Urban Cooking Emissions Sources.** SUNHYE KIM, Jo Machesky, Drew Gentner, Albert A. Presto, *Carnegie Mellon University*

Thursday 10:45 AM - 11:45 AM
Session 11: Platform

11BA BIOAEROSOLS II

Kerry Kinney and Suresh Dhaniyala, chairs

11BA.1 10:45 **No SARS-CoV-2 Detected in Environmental Samples Collected at a Fitness Center That Reopened Following CDC Guidelines.** HONGWAN LI, Sripriya Nannu Shankar, Chiran Witanachchi, John Lednicky, Julia Loeb, Md. Mahbubul Alam, Z. Hugh Fan, Karim Mohamed, Arantzazu Eiguren-Fernandez, Chang-Yu Wu, *University of Florida*

11BA.3 10:45 **Measuring Short Time Course Reduction of SARS-CoV-2 Infectivity in Aerosol.** HENRY OSWIN, Allen E. Haddrell, Mara Otero, Jamie Mann, Tristan Cogan, Andrew Davidson, Jonathan P. Reid, *University of Bristol*

11BA.6 11:00 **Size Distribution of Chemical and Biological Particles during the Saharan Dust Episodes over Europe in February 2021.** KALLIOPI VIOLAKI, Andrea Mario Arangio, Athanasios Nenes, *EPFL, Switzerland*

11BA.7 11:15 **Environmental Surveillance for SARS-CoV-2 from September 2020-February 2021 on a University Campus that Followed CDC Reopening Guidance.** HONGWAN LI, Sripriya Nannu Shankar, Chiran Witanachchi, John Lednicky, Julia Loeb, Md. Mahbubul Alam, Z. Hugh Fan, Michael Lauzardo, Karim Mohamed, Arantzazu Eiguren-Fernandez, Chang-Yu Wu, *University of Florida*

11BA.8 11:15 **Direct-Read Fluorescence Based Measurements of Bioaerosols Produced during Activities of Daily Living.** VISHAL D. NATHU, Jurate Virkutyte, M.B. Rao, Marina Nieto-Caballero, Mark T. Hernandez, Tiina Reponen, *University of Cincinnati*

11BA.9 11:15 **Surface Virus Inactivation Using Compact Non-Thermal Plasma Reactors.** ANTHONY TANG, Igor Novosselov, Scott Meschke, Angelo Ong, Ivy Terry, *University of Washington*

11BA.10 11:30 **Study of Airborne Microbial Diversity in a University Campus Using a Portable Electrostatic Bioaerosol Sampler.** KAVINDRA KUMARAGAMA, Shane Rogers, Shantanu Sur, Suresh Dhaniyala, *Clarkson University*

11BA.11 11:30 **Effect of Sampling Duration on Bioaerosol Culturability When Using Passive Sampling Devices.** SYDONIA MANIBUSAN, Gediminas Mainelis, *Rutgers, The State University of New Jersey*

11CC AEROSOLS, CLOUDS, AND CLIMATE II

Akua Asa Awuku and Nicholas Meshkidze, chairs

11CC.1 10:45 **Water Uptake of Atmospheric Organosulfates at Sub and Supersaturated Conditions.** Chao Peng, Patricia Razafindrambinina, KOTIBA A. MALEK, Lanxiadi Chen, Weigang Wang, Rujin Huang, Yuqing Zhang, Xiang Ding, Maofa Ge, Xinming Wang, Akua Asa-Awuku, Mingjin Tang, *University of Maryland*

11CC.2 10:45 **Viscosity of Secondary Organic Aerosol: Effects of Composition and Oxidation Method.** GIUSEPPE CRESCENZO, Vahe Baboomian, Natalie R. Smith, Sergey Nizkorodov, Allan Bertram, *University of British Columbia*

11CC.3 10:45 **Is Black Carbon the 2nd Largest Contributor to Climate Change?** GEORGIOS A. KELESIDIS, David Neubauer, Liang-Shih Fan, Ulrike Lohmann, Sotiris Pratsinis, *ETH Zurich, Switzerland*

11CC.4 11:00 **Annual Variability of Particle Size, Cloud Condensation Nuclei and Particle Hygroscopicity in the Central Arctic.** XIANDA GONG, Jiaoshi Zhang, Heike Wex, Chongai Kuang, Janek Uin, Matthew Shupe, Jian Wang, *Washington University in St. Louis*

11CC.6 11:00 **Mixing State and Properties of Aged Aerosols in the North Atlantic Free Troposphere.** MEGAN MORGENSTERN, Rhenton Brimberry, Nurun Nahar Lata, Swarup China, Lynn Mazzoleni, Paulo Fiahlo, Diamantino Henriques, Andrea Baccarini, Silvia Henning, Birgit Wehner, Bo Zhang, Simeon Schum, Claudio Mazzoleni, *Michigan Technological University*

11CC.7 11:15 **Compositional Analysis of Cloud Droplet Residuals by High Resolution Time-of-Flight Aerosol Mass Spectrometry: A CAMP2Ex Case Study.** CLAIRE ROBINSON, Rachel O'Brien, Matthew Brown, Ewan Crosbie, Francesca Gallo, Carolyn Jordan, Richard Moore, Kevin Sanchez, Taylor Shingler, Michael Shook, Kenneth Thornhill, Elizabeth Wiggins, Edward Winstead, Bruce Anderson, Luke Ziemba, *NASA, SSAI*

11CC.8 11:15 **An Overview of Aerosol Measurements and Process Studies During the TRacking Aerosol Convection interactions ExpeRiment (TRACER) and Partner Field Campaigns.** MICHEL JENSEN, James Flynn, Laura Judd, Pavlos Kollias, Chongai Kuang, Greg McFarquhar, Raj Nadkarni, Heath Powers, John Sullivan, Allison Aiken, Brian Argrow, Sarah Brooks, Christopher Cappa, Rajan K. Chakrabarty, Philip Chilson, Don Collins, Gijs de Boer, Darielle Dexheimer, Manvendra Dubey, Jiwen Fan, Robert Griffin, Petra Klein, Alex Kotsakis, Markus Petters, et al., *Brookhaven National Laboratory*

11CC.9 11:15 **Black Carbon Aerosol-Cloud Effects over the Eastern North Pacific Ocean.** Nilima Sarwar, Dongli Wang, Walt Williams, Armin Sorooshian, Haflidi Jonsson, Richard Flagan, John Seinfeld, ANDREW METCALF, *Clemson University*

11CC.10 11:30 **On the Effects of Wet vs. Dry and Seeded vs. Unseeded Conditions on SOA Hygroscopicity.** Patricia Razafindrambinina, Kotiba A. Malek, Joseph Dawson, Miriam Freedman, Akua Asa-Awuku, Tim Raymond, DABRINA DUTCHER, *Bucknell University*

11CC.11 11:30 **Water Uptake of Alginic Acid Sodium Salt as a Proxy for Marine Hydrogels and Its Mixtures with Different Inorganic Salts.** BEHNAZ ASADZADEH, Hichem Bouzidi, Jakub Ondráček, Jaroslav Schwarz, Vladimír Ždímal, *ICPF of CAS, Prague, Czech Republic*

11CC.12 11:30 **Secondary Organic Aerosol and Brown Carbon Formation from Furanoid Oxidation via OH Radicals: Important Precursors from Biomass Burning.** TAEKYU JOO, Linghan Zeng, Yuchen Wang, Tori Hass-Mitchell, Rodney J. Weber, Drew Gentner, Benjamin Brown-Steiner, Matthew Alvarado, Nga Lee Ng, *Georgia Institute of Technology*

11SA SOURCE APPORTIONMENT I

Qi Zhang and Jay Slowik, chairs

11SA.2 10:45 **Characterization of Vehicular Emissions of Ammonia and Other Nitrogen-Containing Volatile Organic Compounds under Real-World Driving Conditions.** JUN ZHENG, Dongsen Yang, Yan Ma, *Nanjing University of*

Information Science and Technology

11SA.4 11:00 **Organic Aerosol Components across Europe Using 22 ACSM/AMS Year-long Datasets and a Harmonized Source Apportionment Protocol.** GANG CHEN, MariCruz Minguillon, André S. H. Prévôt, Team COLOSSAL, *Paul Scherrer Institute*

11SA.6 11:00 **A Coupled Volatility and Molecular Composition Based Source Apportionment of Atmospheric Organic Aerosol.** PHILIP RUND, Ben H. Lee, Claudia Mohr, Daniel Jaffe, Noah Bernays, Qi Zhang, Ryan Farley, Tuukka Petäjä, Joel A. Thornton, *University of Washington*

11SA.7 11:15 **Source Apportionment and Real-Time Measurement of pm10 Trace Metals Released from Car Brakes, Tire Wear and Construction Dust.** ZAINAB BIBI, James Allan, Hugh Coe, Nicholas Marsden, Michael Flynn, *University of Manchester, UK*

11SA.9 11:15 **Spatiotemporal Analysis of PM2.5 in Chicago Using Data from EPA and Low-Cost Sensor Network.** VIJAY KUMAR, Dinushani Senarathna, Suresh Dhaniyala, Shantanu Sur, Supraja Gurajala, Sumona Mondal, *Department of Mathematics, Clarkson University, Potsdam-NY*

11SA.11 11:30 **Impacts of Residential Wood Burning Curtailment Program on Wintertime PM Pollution in the San Joaquin Valley of California.** JUSTIN TROUSDELL, Caroline Parworth, Ryan Farley, Deepchandra Srivastava, Qi Zhang, *University of California, Davis*

11SA.12 11:30 **One-year ACSM Source Apportionment Analysis at the Central European Research Station Melpitz.** SAMIRA ATABAKHSH, Laurent Poulain, Gang Chen, André S. H. Prévôt, Alfred Wiedensohler, Hartmut Herrmann, *Leibniz Institute for Tropospheric Research*

11SW SPECIAL SYMPOSIUM: WILDFIRE AEROSOLS III

Jeffrey Pierce and John Kodros, chairs

11SW.1 10:45 **Intercomparison of Spectroscopic Measurements of Biomass Burning Aerosol Optical Properties during a Wildfire in Southern California.** ESTHER MORALES, Danielle Rocco, Jaebin Ju, Jorge Gonzales, Anissa Barrera, Stephanie Salas, Daniel B. Curtis, *California State University, Fullerton*

11SW.2 10:45 **Plume Heights Affect the Evolution of Organic Aerosol Optical Properties: Insights from FIREX-AQ Field Measurements.** CHENCHONG ZHANG, Benjamin Sumlin, Nishit Shetty, Pai Liu, Rajan K. Chakrabarty, *Washington University in St. Louis*

11SW.3 10:45 **Ground-based in Situ Hyperspectral Optical Measurements of Smoke Aerosols during FIREX-AQ, Relating Spectral Characteristics to Aerosol Composition, Fuels, and Fire State.** CAROLYN JORDAN, Bruce Anderson, John Barrick, Kathleen Brunke, Jiajue Chai, Gao Chen, Ewan Crosbie, Jack Dibb, Ann Dillner, Emily Gargulinski, Jackson Kaspari, Robert Martin, Richard Moore, Rachel O'Brien, Claire Robinson, Gregory Schuster, Taylor Shingler, Michael Shook, Amber Soja, Kenneth Thornhill, Andrew Weakley, Elizabeth Wiggins, Edward Winstead, Luke Ziemba, et al., *NASA*

11SW.4 11:00 **Characterizing the Physical and Chemical Evolution of Organic Aerosol in Biomass Burning Smoke using Gas- and Particle-phase Molecular Tracers from Laboratory and FIREX-AQ Observations.** MELINDA SCHUENEMAN, Douglas Day, Demetrios Pagonis, Seonsik Yun, Olivia Jenks, Pedro Campuzano-Jost, Hongyu Guo, Benjamin A. Nault, Wyatt Brown, Julia Lee-Taylor, Joost de Gouw, Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*

11SW.5 11:00 **Physicochemical and Toxicological Profiles of Particles from the Combustion of Individual California Biomass Species.** AMBER KRAMER, Tiancong Ma, Tian Xia, Yifang Zhu, *University of California, Los Angeles*

11SW.6 11:00 **Quantifying Emission Factors from Mixed Conifer Forest Controlled Burns Aimed to Reduce Wildfire Risk at Blodgett Forest Research Station California.** DEEP SENGUPTA, Nathan Kreisberg, Coty Jen, Yutong Liang, James D.A. Butler, Rebecca A. Sugrue, Robert Weber, Paul Van Rooy, Afsara Tasnia, Emre Ozen, Edward Gonzalez, Jason Kriesel, Kevin K. Schwarm, Mitchell R. Spearrin, Thomas W. Kirchstetter, Robert York, Daniel Foster, John Battles, Scott Stephens, Kelley Barsanti, Allen Goldstein, *University of California, Berkeley*

11SW.7 11:15 **Chemical Transformations of Biomass Burning Organic Aerosol within Wildfire Plumes - From Near-source to the Regional Scale.** RYAN FARLEY, Timothy Onasch, John Shilling, Shan Zhou, Sonya Collier, Lawrence Kleinman, Arthur J. Sedlacek, Qi Zhang, *University of California, Davis*

11SW.8 11:15 **Reconciling Assumptions in Bottom Up and Top Down Approaches for Estimating Aerosol Emissions from Wildland Fires in the Western US Using Observations from FIREX-AQ.** ELIZABETH WIGGINS, Bruce Anderson, Matthew Brown, Gao Chen, Ewan Crosbie, Josh DiGangi, Glenn Diskin, Marta Fenn, Michael Shook, Amber Soja, Francesca Gallo, Emily Gargulinski, Hongyu Guo, Johnathan Hair, Demetrios Pagonis, Anne Perring, Claire Robinson, Kevin Sanchez, Melinda Schueneman, Chelsea Stockwell, Kenneth Thornhill, Carsten Warneke, Joshua P. Schwarz, Taylor Shingler, et al., *NASA*

Thursday 11:45 AM - 1:00 PM
Lunch Break

Thursday 1:00 PM - 2:00 PM
Session 12: Platform

12BA BIOAEROSOLS III

Maria King and Caroline Duchaine, chairs

12BA.1 1:00 **Determining the Composition of Ice Nucleating Particles from Marine Phytoplankton.** ALYSSA ALSANTE, Daniel Thornton, Sarah Brooks, *Texas A&M University*

12BA.2 1:00 **Species-Specific Chemical Analysis of Pollen for Source Identification of Atmospheric Aerosol.** KEVIN AXELROD, Vera Samburova, Andrey Khlystov, *Desert Research Institute*

12BA.3 1:00 **Pollen as a Source of Atmospheric Particles and Ice Nucleating Particles.** BRIANNA HENDRICKSON, Alyssa Alsante, Sarah Brooks, *Texas A&M University*

12BA.4 1:15 **Miniature High-Flowrate Biosampler for Distributed Deployment.** DAVID ALBURTY, Andrew Page, Ann Packingham, David Goad, *InnovaPrep LLC*

12BA.5 1:15 **Airborne Dust and Bioaerosol Concentrations in Canadian Laying Hen Facilities Using Battery Cages, Enriched Cages and Aviaries.** MAGALI-WEN ST-GERMAIN, Valérie Létourneau, Araceli Dalila Larios Martínez, Stéphane Godbout, Caroline Duchaine, *Laval University, Quebec Heart and Lung Institute*

12BA.6 1:15 **Development and Characterization of an Environmental Rotating Aerosol Chamber for Long-term Bioaerosol Suspension.** ESTHER MONROE, Nishit Shetty, Benjamin Sumlin, Joshin Kumar, Rajan K. Chakrabarty, *Washington University in St. Louis*

12BA.7 1:30 **Application of Long-read Nanopore Sequencing for the Analysis of Airborne Microbes.** AUSTIN MARSHALL, Daniel Fuller, Kavindra Kumaragama, Suresh Dhaniyala, Shantanu Sur, *Clarkson University - Potsdam, NY*

12BA.8 1:30 **Measuring the Viability of Airborne Virus under Different Environmental Conditions and Fomites.** ROBERT ALEXANDER, Mara Otero-Fernandez, Henry Oswin, Allen E. Haddrell, Jamie Mann, Adam Finn, Tristan Cogan, Andrew Davidson, Richard J. Thomas, Jonathan P. Reid, *University of Bristol*

12BA.9 1:45 **Characterization of Sub-Pollen Particles in Atmospheric Aerosol During Summer Rain Events.** CHAMARI MAMPAGE, Dagen Hughes, Lillian Jones, Nervana Metwali, Peter Thorne, Elizabeth Stone, *University of Iowa*

12BA.10 1:45 **Carbonyls in Cloud Water: Their Biodegradation by Bacteria.** THUONG CAO, Pierre Herckes, Ferran Garcia-Pichel, *Arizona State University*

12CA CARBONACEOUS AEROSOL I

Kyle Gorkowski and Gabriel Isaacman-VanWertz, chairs

12CA.1 **Physical and Optical Properties of Aerodynamically Classified BC and BrC.** JAMES ALLAN, Dawei Hu, Rami

1:00 Alfarra, Kate Szpek, Justin Langridge, Michael Cotterell, Claire Belcher, Ian Rule, Zixia Liu, Chenjie Yu, Yunqi Shao, Aristeidis Voliotis, Mao Du, Brett Smith, Gregory Smallwood, Prem Lobo, Dantong Liu, Jim Haywood, Hugh Coe, *University of Manchester and NCAS*

12CA.2 1:00 **A Novel Approach for Carbon Constant Calibration and Validation of the Magee Scientific Total Carbon Analyzer TCA08.** Gašper Lavrič, KLEMEN KUNSTELJ, Martin Rigler, *Aerosol d.o.o.*

12CA.3 1:00 **High-time Resolution Apportionment of Primary and Secondary Carbonaceous Aerosols Using Advanced TC-BC Method.** MARTIN RIGLER, Matic Ivančič, Jerzy Debosz, Uwayemi Sofowote, Jonathan Wang, Robert Healy, *Aerosol d.o.o.*

12CA.4 1:15 **Connecting Composition to Reactivity for Fragrances and Their Emissions.** JAMES HURLEY, Jessica Gilman, Brian McDonald, Matthew Coggon, Gabriel Isaacman-VanWertz, *Virginia Tech*

12CA.5 1:15 **Molecular Characterization of Aerosolized Bio-Oil.** EMILY HALPERN, Christopher West, Anusha P.S. Hettiyadura, Alexander Laskin, *Purdue University*

12CA.6 1:15 **Secondary Organic Aerosol Formation from the Oxidation of Volatile Organic Compound Mixtures.** YUMENG CUI, Kunpeng Chen, Ying-Hsuan Lin, Roya Bahreini, *University of California, Riverside*

12CA.7 1:30 **Fine Particulate Matter and Black Carbon Emissions from Non-Cooking Residential Sector Activities over Rural India.** CHIMURKAR NAVINYA, Harish C Phuleria, Gupta Anurag, Pradnya Lokhande, Gazala Habib, Chandra Venkataraman, Abhijit Chatterjee, D. Abisheg, Anubha Goel, Arshid Jehangir, Yang Lian, Tuhin Kumar Mandal, Shiva Nagendra, Asif Qureshi, Ramya Sunder Raman, Binoy K. Saikia, Baerbel Sinha, *Indian Institute of Technology Bombay*

12CA.8 1:30 **Molecular-Specific Photolysis of Atmospheric Brown Carbon.** DIEGO CALDERON-ARRIETA, Ana Morales, Anusha P.S. Hettiyadura, Chunlin Li, Yinon Rudich, Alexander Laskin, *Purdue University*

12CA.9 1:30 **Elemental Versus Black Carbon: Are They Interchangeable? Insights from Extensive Measurement Campaigns in Southern California.** FARAZ AHANGAR, Payam Pakbin, Sina Hasheminassab, Mohammad Sowlat, Avi Lavi, Christopher Lim, *South Coast Air Quality Management District*

12CA.10 1:45 **Humidity-Dependent Brown Carbon Light Absorption and Photobleaching: Laboratory and Model Synthesis of Organic Dyes.** KYLE GORKOWSKI, Katherine Benedict, James E. Lee, Allison Aiken, Christian Carrico, Tyler Capek, Manvendra Dubey, *Los Alamos National Laboratory*

12CA.11 1:45 **The Determination of Source-separated Black Carbon Emission Rates Using Radon as a Tracer of Atmospheric Dynamics.** ASTA GREGORIČ, Luka Drinovec, Janja Vaupotič, Irena Jezek, Matic Ivančič, Janja Tursic, Griša Močnik, *Aerosol d.o.o.*

12CA.12 1:45 **Evaluation of Regional Model Predictions of Secondary Organic Aerosol from Aromatic Compounds and Monoterpenes with Precursor-Specific Tracers.** JIE ZHANG, Xiao He, Yaqin Gao, Shuhui Zhu, Shenggao Jing, Hongli Wang, Jian Zhen Yu, Qi Ying, *Texas A&M University*

12CC AEROSOLS, CLOUDS, AND CLIMATE III

Roya Bahreini and Qi Ying, chairs

12CC.1 1:00 **Organosulfates in Primary and Secondary Sea Spray Aerosols.** DILINI KIRINDIGODA GAMAGE, Elias Hasenecz, Glorianne Dorcé, Kathryn Mayer, Jon Sauer, Chris Lee, Timothy Bertram, Christopher Cappa, Kimberly Prather, Elizabeth Stone, *University of Iowa*

12CC.2 1:00 **Synergistic Particle Formation in the Upper Troposphere by Nitric Acid, Sulfuric Acid, and Ammonia.** MINGYI WANG, The CLOUD Collaboration, Neil Donahue, *Carnegie Mellon University*

12CC.3 1:00 **Measuring Brown Carbon Aerosol Deliquescence: Effect of Reaction Time and Composition.** RACHEL M. HESGARD, Ariana Cruz Cruz, Paula K. Hudson, *California State University, Fullerton*

12CC.6 1:15 **Evaluating Machine Learning Models for Estimating Submicron Aerosol Mixing State at the Global Scale.** REETAHAN MUKHOPADHYAY, Zhonghua Zheng, Matthew West, Robert Healy, Laurent Poulain, Valerie Gros, Nicole Riemer, *University of Illinois at Urbana-Champaign*

12CC.7 1:30 **Sensitivity of the Hydrological Cycle to Aerosol Type and Amount Using High Resolution Weather Research and Forecasting Model over India.** SAUVIK SANTRA, Shubha Verma, Roxy Mathew Koll, Olivier Boucher, *Indian Institute of Technology Kharagpur*

12CC.8 1:30 **A Review of Satellite Cloud Condensation Nuclei Retrieval Methods for Evaluation with In-situ Measurements from Aircraft-Based Observations in the Marine Boundary Layer.** KEVIN SANCHEZ, David Painemal, Matthew Brown, Ewan Crosbie, Francesca Gallo, Carolyn Jordan, Claire Robinson, Taylor Shingler, Michael Shook, Kenneth Thornhill, Elizabeth Wiggins, Edward Winstead, Luke Ziemba, Bruce Anderson, Richard Moore, *NASA*

12CC.9 1:30 **Physicochemical Properties of Vertically Resolved Aerosols Collected over the Arctic via Tethered Balloon System.** NURUN NAHAR LATA, Darielle Dexheimer, Fan Mei, Zezhen Cheng, Rhenton Brimberry, Swarup China, *Michigan Technological University*

12CC.10 1:45 **New Particle Formation during the CAMP2Ex Campaign: Statistics and Impact of Emission Sources.** QIAN XIAO, Jiaoshi Zhang, Yang Wang, Luke Ziemba, Ewan Crosbie, Edward Winstead, Claire Robinson, Jeffrey Reid, Josh DiGangi, Glenn Diskin, Sebastian Schmidt, Armin Sorooshian, Miguel Hilario, Sara Woods, Paul Lawson, Ryan Bennett, Jian Wang, *Washington University in St. Louis*

12CC.11 1:45 **Entrainment of Long-Range Transported Aerosols in the Marine Boundary Layer in the Azores.** SHREYA JOSHI, Paulo Fialho, Diamantino Henriques, Renato Pinto Reveggino, Andrea Baccarini, Silvia Henning, Birgit Wehner, Lynn Mazzoleni, Simeon Schum, Bo Zhang, Raymond Shaw, Jian Wang, Claudio Mazzoleni, *Michigan Technological University*

12SA SOURCE APPORTIONMENT II

Lelia Hawkings and Sandra Fomete, chairs

12SA.3 1:00 **Comprehensive Analysis of Marine Particulate Matter Impacts to Atmospheric Pollution in Coastal Communities.** RYAN DROVER, David R. Cocker III, J. Wayne Miller, *University of California, Riverside*

12SA.5 1:15 **Quantifying Linear and Non-Linear Influences of Aerosol Precursor Emissions on Pollutant Concentrations Using CMAQ-hyd.** JIACHEN LIU, Eric Chen, Ryan Russell, Shannon Capps, *Drexel University*

12SA.6 1:15 **Real-time Source Apportionment of Organic Aerosols in Three European Cities.** GANG CHEN, Francesco Canonaco, Jay G. Slowik, Kaspar R. Daellenbach, Iasonas Stavroulas, Nikolaos Mihalopoulos, Evangelos Gerasopoulos, Jean-Eudes Petit, Olivier Favez, Urs Baltensperger, André S. H. Prévôt, *Paul Scherrer Institute*

12SA.7 1:30 **Estimation of Local and Transboundary Impacts on PM2.5 Source Contributions by Unprecedented Cross-Country Experiment during the COVID-19 Outbreak.** YOUNGKWON KIM, Eunhwa Choi, Kwon Ho Jeon, Jae-Hyun Lim, Sang-Woo Kim, Hye-Jung Shin, Jieun Park, Ilhan Ryoo, Taeyeon Kim, Jiwon Ryu, Yeonseung Cheong, Seung-Muk Yi, *Seoul National University*

12SA.8 1:30 **Using Constrained Source Apportionment to Characterize Water Soluble Brown Carbon in Los Angeles Summertime Organic Aerosol.** LELIA HAWKINS, Sarah Kavassalis, Christopher Wright, Jason Casar, Benjamin Moul, *Harvey Mudd College*

12SA.9 1:30 **Impacts of Stay-at-home Orders on Ozone in California Using an Ozone Source Apportionment Technique.** YUSHENG ZHAO, Michael Kleeman, Shenglun Wu, *University of California, Davis*

12SA.10 1:45 **Quantitative Source Apportionment of Organic Aerosol by Combined Factor Analysis: Extractive Electrospray Ionization and Aerosol Time-of-Flight Mass Spectrometry (EESI-TOF/AMS).** Yandong Tong, Lu Qi, Giulia Stefenelli, Dongyu S. Wang, Francesco Canonaco, Urs Baltensperger, André S. H. Prévôt, JAY G. SLOWIK, *Paul Scherrer Institute*

12SA.11 1:45 **Chemical Characterization of Organic Nitrogen Aerosol Particles from Prescribed Burns of U.S. Wildland Forests.** FARRAH HAERI, Daniel Foster, Deep Sengupta, Afsara Tasnia, Paul Van Rooy, Nathan Kreisberg, Scott Stephens, John Battles, Robert York, Kelley Barsanti, Allen Goldstein, Coty Jen, *Carnegie Mellon University*

12SW SPECIAL SYMPOSIUM: WILDFIRE AEROSOLS IV

Naomi Zimmerman and Amy Sullivan, chairs

12SW.1 1:00 **Lessons Learned from Deployment of a Novel Multiwavelength Photoacoustic Spectrometer to FIREX-AQ.** BENJAMIN SUMLIN, Rajan K. Chakrabarty, *Washington University in St. Louis*

12SW.2 1:00 **Submicron Particle Composition and Acidity in Fire Plumes during FIREX-AQ Aircraft Study.** HONGYU GUO, Pedro Campuzano-Jost, Demetrios Pagonis, Melinda Schueneman, Douglas Day, Benjamin A. Nault, Dongwook Kim, Wyatt Brown, Kyla Siemens, Jack Dibb, Eric Scheuer, Laura Tomsche, Felix Piel, John Nowak, Armin Wisthaler, Lu Xu, Krystal Vasquez, John Crounse, Paul Wennberg, Pamela Rickly, Andrew Rollins, Caroline Womack, Joseph Katich, et al., Jose-Luis Jimenez, *CIRES, University of Colorado, Boulder*

12SW.3 1:15 **A Bird's Eye View of Sampling Forest Fire Smoke: Using Drone-Based Measurements of Prescribed Burning to Help Close the Gap between Laboratory and Wild-Fire Smoke Studies.** NATHAN KREISBERG, Deep Sengupta, Robert Weber, James D.A. Butler, Yutong Liang, Paul Van Rooy, Afsara Tasnia, Farrah Haeri, Coty Jen, Emre Ozen, Edward Gonzalez, Jason Kriesel, Kevin K. Schwarm, Daniel Foster, Rebecca A. Sugrue, Mitchell R. Spearrin, Thomas W. Kirchstetter, Kelley Barsanti, Allen Goldstein, *Aerosol Dynamics Inc.*

12SW.4 1:15 **Size Distributions of Biomass Burning Aerosol as a Function of Age and Comparisons to Models.** GREGORY SCHILL, Karl D. Froyd, Daniel Murphy, Charles Brock, Christina Williamson, Agnieszka Kupc, Eric Ray, Huisheng Bian, Mian Chin, Peter Colarco, *NOAA ESRL and CIRES, University of Colorado Boulder*

12SW.6 1:30 **Mixing State of Urban Aerosol under the Influences of Biomass Burning and Transboundary Smoke Haze in Southeast Asia.** LAURA-HELENA RIVELLINI, Nethmi Kasthuriarachchi, Mutian Ma, Alex Lee, *National University of Singapore*

Thursday 2:15 PM - 3:30 PM
Plenary V

14:15 **Fine Particulate Matter: Interpreting Satellite Observations to Advance Understanding for Health Applications** Randall Martin, *Washington University*

Moderator Pratim Biswas, *University of Miami*

15:25 **Concluding Remarks and Preview for 2022** Chris Hogan and Amy Sullivan, 2021 & 2022 Conference Chairs, *University of Minnesota and Colorado State University*

Friday

Friday 8:00 AM - 9:15 AM
Working Meetings 1

Friday 9:30 AM - 10:45 AM
Working Meetings 2

Friday 11:00 AM - 12:15 PM
Working Meetings 3