

Curriculum Vitae

Kimberly A. Prather

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RESEARCH SUMMARY

Professor Kimberly A. Prather is the Distinguished Chair in Atmospheric Chemistry and Distinguished Professor at Scripps Institution of Oceanography and the Department of Chemistry and Biochemistry at University of California, San Diego. Over the course of her career, Professor Prather has authored over 220 publications in a wide range of prestigious scientific journals. A primary focus of her research involves understanding how aerosols impact climate, with a major emphasis on their role in modifying clouds and precipitation processes. Professor Prather invented a technique known as aerosol time-of-flight mass spectrometry (ATOFMS) that enables the real-time measurements of the evolution of the size and chemical composition of individual aerosol particles. This instrument is being used in atmospheric field studies worldwide to determine the major sources of atmospheric aerosols which are impacting human health, air quality, and climate.

She is the founding Director of the NSF Center for Aerosol Impacts on Chemistry of the Environment (CAICE: <https://caice.ucsd.edu>), a \$40M 10-year NSF Center for Chemical Innovation. CAICE has transferred the full complexity of the ocean-atmosphere system into the laboratory to investigate how phytoplankton, bacteria, and viruses in the ocean influence atmospheric chemistry, clouds, and climate.

EDUCATION

Ph.D.	Chemistry University of California, Davis	1990
B.S.	Chemistry University of California, Davis	1985

ACADEMIC AND PROFESSIONAL APPOINTMENTS

2017 – Present	Distinguished Professor
2009 – Present	Founding Director, NSF Center for Aerosol Impacts on Chemistry of the Environment
2010 – Present	Distinguished Chair in Atmospheric Chemistry
2001 – Present	Professor, Dept. of Chemistry and Biochemistry, Scripps Institution of Oceanography, Univ. of Calif., San Diego,
2000 – 2001	Professor, Univ. of California, Riverside
1996 – 2000	Associate Professor, Univ. of California, Riverside
1992 – 1996	Assistant Professor, Univ. of California, Riverside
1990 – 1992	Postdoctoral Fellow, Univ. of California, Berkeley

HONORS AND AWARDS

2020	Elected to the National Academy of Sciences
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- 2020 ACS Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry
- 2019 Elected to the National Academy of Engineering
- 2019 NSF Big Ideas Contest Finalist (Top 33): Global Microbiome in a Changing Climate (used to guide research over the next decade)
- 2018 Chancellor's Associates Excellence Award in Research in Science and Engineering
- 2016 Top 50 Women in the Analytical Sciences, The Analytical Scientist Power List
- 2015 Top "Environmental Science" publication in Environmental Science and Technology
- 2015 Haagen-Smit Clean Air Award
- Citation: "For her pioneering work that has transformed our understanding of atmospheric aerosols and their impacts on atmospheric chemistry, climate, and the hydrologic cycle. Her innovations in aerosol measurement techniques, contributions to aerosol science, and her commitment to training the next generation of researchers will have scientific impacts for years to come."*
- 2014 UC San Diego Faculty Research Lecturer
- 2012 American Chemical Society Eminent Scientist Lecturer
- 2011 American Chemical Society, San Diego, Distinguished Scientist of the Year
- 2010 Elected Fellow, American Academy of Arts and Sciences
- 2010 ACS Award for Creative Advances in Environmental Science & Technology
- 2010 Elected Fellow, American Association for the Advancement for Science
- 2009 Elected Fellow, American Geophysical Union
- 2000 R&D Magazine Top 100 Invention Awards
- 1999 UC CONNECT Most Innovative New Product Award (ATOFMS)
- 1999 Kenneth T. Whitby Award (American Association for Aerosol Research)
- 1998 Smoluchowski Award (GaeF, German Aerosol Society)
- 1997 Special Creativity Award, National Science Foundation
- 1994 American Society for Mass Spectrometry Research Award
- 1994 National Science Foundation Young Investigator Award

SYNERGISTIC ACTIVITIES

- 2010-2023 Founding Director of the NSF Center for Aerosol Impacts on Chemistry of the Environment (CAICE).
- 2020-2021 National Academies Planning Committee on Indoor Exposure to Fine PM.
- 2020-2021 Max Planck Institute for Chemistry, Scientific Advisory Board
- 2020 SARS-CoV-2 Science Communication: Wrote Science Perspective on "Airborne Transmission of SARS-CoV-2" summarizing the airborne nature of this virus and the importance of masks for reducing the spread. Since being published in May of 2020, it has been downloaded nearly 1.6M times.
- 2020 Co-organizer and session chair, National Academies virtual workshop on the "Airborne Transmission of SARS-CoV-2", Environmental Health Matters Initiative.
- 2020 NAS Awards Committee

2009-2018 Co-chief scientist of CalWater study focusing on aerosol impacts on the hydrological cycle and Atmospheric Rivers.

2017 Member of NCAR/ACOM Blue Ribbon Review Panel

2017-2020 American Geophysical Union (AGU) Fellows Committee

2017-2019 ACS National Award Selection Committee

2018-2019 American Academy Fellow Selection Committee

2017-2020 Advisory Board for National Center for Atmospheric Research (NCAR/ACOM)

2017 Chaired and organized Gordon Research Conference on “Atmospheric Chemistry”.

2016 Co-author of National Academies Report "The Future of Atmospheric Chemistry Research"

2016 Co-chaired Committee of Visitors to AGS at NSF

2016 Co-organizer of National Academies Sackler Symposium on “Improving our fundamental understanding of the role of aerosol–cloud interactions in the climate system”.

2009-2015 Member for two terms on the National Academy of Sciences Board for Atmospheric Science and Climate (BASC).

2013-2015 External advisor to the Associate Director of Geosciences at the National Science Foundation.

INNOVATIONS IN ENVIRONMENTAL CHEMISTRY

Five patents for developments in on-line mass spectrometry for environmental chemistry lab and field studies:

Aerosol time-of-flight mass spectrometry (ATOFMS) (US Patent 5,681,752)

Development of transportable ATOFMS (US Patent 5,998,215)

MALDI-IM-ortho-TOF Mass Spectrometry with Simultaneous Positive and Negative Mode Detection (US Patent: 7,170,052)

Compact Aerosol Time- of-Flight Mass Spectrometer (US Patent: 8,648,294)

Biological Cell Sorting and Characterization Using Aerosol Mass Spectrometry (US Patent: 8,626,449)

FUNDING SOURCES

National Science Foundation, California Air Resources Board, California Energy Commission, National Cancer Institute, NOAA, Dept. of Energy, Pacific Northwest National Laboratory.

PUBLIC SERVICE

Dedicates significant time educating the public on climate and air pollution issues by giving lectures at the SIO Birch Aquarium, San Diego Natural History Museum, radio (NPR), TV broadcasts (CBS, NBC, ABC, KPBS, CNN), local schools. She and members of her research group are heavily involved in science communication. Examples of public lectures and videos include an ACS Webinar on Earth Day (April 2015: <https://youtu.be/rVHiWByxqC4>), and an ACS YouTube Video on CAICE research (<https://youtu.be/qBX4V16-SMM>). Highlights of her research have appeared in the popular press including the LA Times, CBS Evening News, Discover, Scientific American, Al Jazeera, CNN, PBS, and National Geographic.

During the pandemic, Prather has been heavily involved in helping local San Diego K-12 schools and UC San Diego reopen safely by considering the airborne transmission of the SARS-CoV-2 virus. She has now conducted over 600 national and international media interviews on how to protect oneself from airborne exposure to this virus. She was involved in writing a FAQ that has been translated into numerous languages and used worldwide on “How to protect yourself from SARS-CoV-2”.

CONTRIBUTIONS TO EDUCATION IN ENVIRONMENTAL CHEMISTRY

Prather has graduated 39 PhD students and mentored hundreds of undergraduates. She teaches courses on Instrument Development, Environmental Chemistry, Chemistry and Climate, and Atmospheric Aerosols. She works extensively with graduate students and postdocs on effective science communication, as well as how to design and build scientific instrumentation to address complex environmental chemistry problems. Through CAICE, she has developed new curricula for K-12 science education and "Traveling Trunks" used to educate K-12 students on climate and atmospheric chemistry. These trunks are being used all over the United States, as well as Mexico, and in several tribal nations.

SELECT CHEMISTRY GRADUATE STUDENTS GS) and POSTDOCS (PD)

Kerri Pratt (Assoc. Prof.; Univ. of Michigan; GS), Andrew Ault (Asst. Prof.; Univ. of Michigan; GS), Deborah Gross (Professor; Carleton College; PD), Doug Collins (Asst. Prof. Bucknell Univ., GS); Jack Cahill (Research Scientist, Oak Ridge National Labs, GS); Sergio Guazzotti (Manager, Thermo Fisher, GS/PD); Markus Gaelli (Research Scientist; TSI, Inc.; PD), Cassandra Gaston (Asst. Prof.; University of Miami; GS), Ryan Sullivan (Asst. Prof.; Carnegie Mellon University; GS), Eric Gard (Research Director; LLNL; PD), Jessie Creamean (Research Scientist; Colorado State; GS)

PUBLICATIONS

1. Weiner, B. R.; Pasternack, L.; Nelson, H. H.; Prather, K. A.; Rosenfeld, R. N., Photodissociation Dynamics of BH_3CO at 193-nm. *Journal of Physical Chemistry* **1990**, *94* (10), 4138-4142.
2. Prather, K. A.; Rosenfeld, R. N., Photodissociation Dynamics of 3-Cyclopentenone Using a Tunable Diode-Laser. *Journal of Physical Chemistry* **1991**, *95* (17), 6544-6548.
3. Prather, K. A.; Lee, Y. T., Primary Processes Involved in the Photodissociation of Saturated-hydrocarbons at 157 nm. *Optical Methods for Time and State-Resolved Chemistry* **1992**, *1638*, 179-184.
4. Prather, K. A.; Lee, Y. T., The Photodissociation of Pyridine at 193-nm. *Israel Journal of Chemistry* **1994**, *34* (1), 43-53.
5. Noble, C. A.; Nordmeyer, T.; Salt, K.; Morrical, B.; Prather, K. A., Aerosol Characterization Using Mass-Spectrometry. *Trac-Trends in Analytical Chemistry* **1994**, *13* (5), 218-222.
6. Prather, K. A.; Nordmeyer, T.; Salt, K., Real-Time Characterization of Individual Aerosol- Particles Using Time-of-Flight Mass-Spectrometry. *Analytical Chemistry* **1994**, *66* (9), 1403-1407.
7. Nordmeyer, T.; Prather, K. A., Real-Time Measurement Capabilities Using Aerosol Time- of-Flight Mass-Spectrometry. *Analytical Chemistry* **1994**, *66* (20), 3540-3542.
8. Salt, K.; Noble, C. A.; Prather, K. A., Aerodynamic Particle Sizing Versus Light Scattering Intensity Measurement as Methods for Real Time Particle Sizing Coupled with Time-of- Flight Mass Spectrometry. *Analytical Chemistry* **1996**, *68* (1), 230-234.
9. Noble, C. A.; Prather, K. A., Real-Time Measurement of Correlated Size and Composition Profiles of Individual Atmospheric Aerosol Particles. *Environmental Science & Technology* **1996**, *30* (9), 2667-2680.
10. Fergenson, D. P.; Liu, D. Y.; Silva, P. J.; Prather, K. A., Spectrasort: A Data Analysis Program for Real-Time Aerosol Analysis by Aerosol Time-of-Flight Mass Spectrometry. *Chemometrics and Intelligent Laboratory Systems* **1997**, *37* (1), 197-203.
11. Liu, D. Y.; Rutherford, D.; Kinsey, M.; Prather, K. A., Real-Time Monitoring of Pyrotechnically Derived Aerosol Particles in the Troposphere. *Analytical Chemistry* **1997**, *69* (10), 1808-1814.
12. Gard, E.; Mayer, J. E.; Morrical, B. D.; Dienes, T.; Fergenson, D. P.; Prather, K. A., Real- Time Analysis of Individual Atmospheric Aerosol Particles: Design and Performance of a Portable ATOFMS. *Analytical Chemistry* **1997**, *69* (20), 4083-4091.
13. Silva, P. J.; Prather, K. A., On-Line Characterization of Individual Particles from Automobile Emissions. *Environmental Science & Technology* **1997**, *31* (11), 3074-3080.
14. Noble, C. A.; Prather, K. A., Real-Time Single Particle Monitoring of a Relative Increase in Marine

- Aerosol Concentration During Winter Rainstorms. *Geophysical Research Letters* **1997**, *24* (22), 2753-2756.
15. Noble, C. A.; Prather, K. A., Aerosol Time-of-Flight Mass Spectrometry: A New Method for Performing Real-Time Characterization of Aerosol Particles. *Applied Occupational and Environmental Hygiene* **1998**, *13* (6), 439-443.
 16. Noble, C.; Prather, K., Air Pollution: The Role of Particles. *Physics World* **1998**, *11* (1), 39- 43.
 17. Gard, E. E.; Kleeman, M. J.; Gross, D. S.; Hughes, L. S.; Allen, J. O.; Morrical, B. D.; Fergenson, D. P.; Dienes, T.; Galli, M. E.; Johnson, R. J.; Cass, G. R.; Prather, K. A., Direct Observation of Heterogeneous Chemistry in the Atmosphere. *Science* **1998**, *279* (5354), 1184-1187.
 18. Wood, S. H.; Prather, K. A., Time-of-Flight Mass Spectrometry Methods for Real Time Analysis of Individual Aerosol Particles. *Trac-Trends in Analytical Chemistry* **1998**, *17* (6), 346-356.
 19. Noble, C. A.; Prather, K. A., Single Particle Characterization of Albuterol Metered Dose Inhaler Aerosol in near Real-Time. *Aerosol Science and Technology* **1998**, *29* (4), 294-306.
 20. Morrical, B. D.; Fergenson, D. P.; Prather, K. A., Coupling Two-Step Laser Desorption/Ionization with Aerosol Time-of-Flight Mass Spectrometry for the Analysis of Individual Organic Particles. *Journal of the American Society for Mass Spectrometry* **1998**, *9* (10), 1068-1073.
 21. Song, X. H.; Hopke, P. K.; Fergenson, D. P.; Prather, K. A., Classification of Single Particles Analyzed by ATOFMS Using an Artificial Neural Network, Art-2a. *Analytical Chemistry* **1999**, *71* (4), 860-865.
 22. Suess, D. T.; Prather, K. A., Mass Spectrometry of Aerosols. *Chemical Reviews* **1999**, *99* (10), 3007-3036.
 23. Silva, P. J.; Liu, D. Y.; Noble, C. A.; Prather, K. A., Size and Chemical Characterization of Individual Particles Resulting from Biomass Burning of Local Southern California Species. *Environmental Science & Technology* **1999**, *33* (18), 3068-3076.
 24. Hughes, L. S.; Allen, J. O.; Kleeman, M. J.; Johnson, R. J.; Cass, G. R.; Gross, D. S.; Gard, E. E.; Galli, M. E.; Morrical, B. D.; Fergenson, D. P.; Dienes, T.; Noble, C. A.; Silva, P. J.; Prather, K. A., Size and Composition Distribution of Atmospheric Particles in southern California. *Environmental Science & Technology* **1999**, *33* (20), 3506-3515.
 25. Silva, P. J.; Carlin, R. A.; Prather, K. A., Single Particle Analysis of Suspended Soil Dust from Southern California. *Atmospheric Environment* **2000**, *34* (11), 1811-1820.
 26. Gross, D. S.; Galli, M. E.; Silva, P. J.; Wood, S. H.; Liu, D. Y.; Prather, K. A., Single Particle Characterization of Automobile and Diesel Truck Emissions in the Caldecott Tunnel. *Aerosol Science and Technology* **2000**, *32* (2), 152-163.
 27. Gross, D. S.; Galli, M. E.; Silva, P. J.; Prather, K. A., Relative Sensitivity Factors for Alkali Metal and Ammonium Cations in Single Particle Aerosol Time-of-Flight Mass Spectra. *Analytical Chemistry* **2000**, *72* (2), 416-422.
 28. Allen, J. O.; Fergenson, D. P.; Gard, E. E.; Hughes, L. S.; Morrical, B. D.; Kleeman, M. J.; Gross, D. S.; Galli, M. E.; Prather, K. A.; Cass, G. R., Particle Detection Efficiencies of Aerosol Time of Flight Mass Spectrometers under Ambient Sampling Conditions. *Environmental Science & Technology* **2000**, *34* (1), 211-217.
 29. Liu, D. Y.; Prather, K. A.; Hering, S. V., Variations in the Size and Chemical Composition of Nitrate-Containing Particles in Riverside, CA. *Aerosol Science and Technology* **2000**, *33* (1-2), 71-86.
 30. Silva, P. J.; Prather, K. A., Interpretation of Mass Spectra from Organic Compounds in Aerosol Time-of-Flight Mass Spectrometry. *Analytical Chemistry* **2000**, *72* (15), 3553-3562.
 31. Hughes, L. S.; Allen, J. O.; Bhave, P.; Kleeman, M. J.; Cass, G. R.; Liu, D. Y.; Fergenson, D. F.; Morrical, B. D.; Prather, K. A., Evolution of Atmospheric Particles Along Trajectories Crossing the Los Angeles Basin. *Environmental Science & Technology* **2000**, *34* (15), 3058- 3068.
 32. Noble, C. A.; Prather, K. A., Real-Time Single Particle Mass Spectrometry: A Historical Review of a Quarter Century of the Chemical Analysis of Aerosols. *Mass Spectrometry Reviews* **2000**, *19* (4), 248-274.
 33. Lelieveld, J.; Crutzen, P. J.; Ramanathan, V.; Andreae, M. O.; Brenninkmeijer, C. A. M.; Campos, T.; Cass, G. R.; Dickerson, R. R.; Fischer, H.; de Gouw, J. A.; Hansel, A.; Jefferson, A.; Kley, D.; de Laat, A. T. J.; Lal, S.; Lawrence, M. G.; Lobert, J. M.; Mayol-Bracero, O. L.; Mitra, A. P.; Novakov, T.; Oltmans, S. J.; Prather, K. A.; Reiner, T.; Rodhe, H.; Scheeren, H. A.; Sikka, D.; Williams, J., The Indian Ocean Experiment: Widespread Air Pollution from South and Southeast Asia. *Science* **2001**,

- 291 (5506), 1031-1036.
34. Galli, M.; Guazzotti, S. A.; Prather, K. A., Improved Lower Particle Size Limit for Aerosol Time-of-Flight Mass Spectrometry. *Aerosol Science and Technology* **2001**, *34* (4), 381-385.
 35. Bhave, P. V.; Fergenson, D. P.; Prather, K. A.; Cass, G. R., Source Apportionment of Fine Particulate Matter by Clustering Single-Particle Data: Tests of Receptor Model Accuracy. *Environmental Science & Technology* **2001**, *35* (10), 2060-2072.
 36. Guazzotti, S. A.; Whiteaker, J. R.; Suess, D.; Coffee, K. R.; Prather, K. A., Real-Time Measurements of the Chemical Composition of Size-Resolved Particles During a Santa Ana Wind Episode, California USA. *Atmospheric Environment* **2001**, *35* (19), 3229-3240.
 37. Cantrell, W.; Shaw, G.; Cass, G. R.; Chowdhury, Z.; Hughes, L. S.; Prather, K. A.; Guazzotti, S. A.; Coffee, K. R., Closure between Aerosol Particles and Cloud Condensation Nuclei at Kaashidhoo Climate Observatory. *Journal of Geophysical Research-Atmospheres* **2001**, *106* (D22), 28711-28718.
 38. Guazzotti, S. A.; Coffee, K. R.; Prather, K. A., Continuous Measurements of Size-Resolved Particle Chemistry During INDOEX-Intensive Field Phase 99. *Journal of Geophysical Research-Atmospheres* **2001**, *106* (D22), 28607-28627.
 39. Song, X. H.; Faber, N. M.; Hopke, P. K.; Suess, D. T.; Prather, K. A.; Schauer, J. J.; Cass, G. R., Source Apportionment of Gasoline and Diesel by Multivariate Calibration Based on Single Particle Mass Spectral Data. *Analytica Chimica Acta* **2001**, *446* (1-2), 329-343.
 40. Ramanathan, V.; Crutzen, P. J.; Lelieveld, J.; Mitra, A. P.; Althausen, D.; Anderson, J.; Andreae, M. O.; Cantrell, W.; Cass, G. R.; Chung, C. E.; Clarke, A. D.; Coakley, J. A.; Collins, W. D.; Conant, W. C.; Dulac, F.; Heintzenberg, J.; Heymsfield, A. J.; Holben, B.; Howell, S.; Hudson, J.; Jayaraman, A.; Kiehl, J. T.; Krishnamurti, T. N.; Lubin, D.; McFarquhar, G.; Novakov, T.; Ogren, J. A.; Podgorny, I. A.; Prather, K.; Priestley, K.; Prospero, J. M.; Quinn, P. K.; Rajeev, K.; Rasch, P.; Rupert, S.; Sadourny, R.; Satheesh, S. K.; Shaw, G. E.; Sheridan, P.; Valero, F. P. J., Indian Ocean Experiment: An Integrated Analysis of the Climate Forcing and Effects of the Great Indo-Asian Haze. *Journal of Geophysical Research-Atmospheres* **2001**, *106* (D22), 28371-28398.
 41. Angelino, S.; Suess, D. T.; Prather, K. A., Formation of Aerosol Particles from Reactions of Secondary and Tertiary Alkylamines: Characterization by Aerosol Time-of-Flight Mass Spectrometry. *Environmental Science & Technology* **2001**, *35* (15), 3130-3138.
 42. Fergenson, D. P.; Song, X. H.; Ramadan, Z.; Allen, J. O.; Hughes, L. S.; Cass, G. R.; Hopke, P. K.; Prather, K. A., Quantification of ATOFMS Data by Multivariate Methods. *Analytical Chemistry* **2001**, *73* (15), 3535-3541.
 43. Whiteaker, J. R.; Suess, D. T.; Prather, K. A., Effects of Meteorological Conditions on Aerosol Composition and Mixing State in Bakersfield, CA. *Environmental Science & Technology* **2002**, *36* (11), 2345-2353.
 44. Bhave, P. V.; Allen, J. O.; Morrical, B. D.; Fergenson, D. P.; Cass, G. R.; Prather, K. A., A Field-Based Approach for Determining ATOFMS Instrument Sensitivities to Ammonium and Nitrate. *Environmental Science & Technology* **2002**, *36* (22), 4868-4879.
 45. Bhave, P. V.; Kleeman, M. J.; Allen, O. J.; Hughes, L. S.; Prather, K. A.; Cass, G. R., Evaluation of an Air Quality Model for the Size and Composition of Source-Oriented Particle Classes. *Environmental Science & Technology* **2002**, *36* (10), 2154-2163.
 46. Suess, D. T.; Prather, K. A., Reproducibility of Single Particle Chemical Composition During a Heavy Duty Diesel Truck Dynamometer Study. *Aerosol Science and Technology* **2002**, *36* (12), 1139-1141.
 47. Pastor, S. H.; Allen, J. O.; Hughes, L. S.; Bhave, P.; Cass, G. R.; Prather, K. A., Ambient Single Particle Analysis in Riverside, California by Aerosol Time-of-Flight Mass Spectrometry During the SCOS97-NARSTO. *Atmospheric Environment* **2003**, *37*, S239- S258.
 48. Guazzotti, S. A.; Suess, D. T.; Coffee, K. R.; Quinn, P. K.; Bates, T. S.; Wisthaler, A.; Hansel, A.; Ball, W. P.; Dickerson, R. R.; Neususs, C.; Crutzen, P. J.; Prather, K. A., Characterization of Carbonaceous Aerosols Outflow from India and Arabia: Biomass/Biofuel Burning and Fossil Fuel Combustion. *Journal of Geophysical Research- Atmospheres* **2003**, *108* (D15).
 49. Whiteaker, J. R.; Prather, K. A., Detection of Pesticide Residues on Individual Particles. *Analytical Chemistry* **2003**, *75* (1), 49-56.
 50. Middlebrook, A. M.; Murphy, D. M.; Lee, S. H.; Thomson, D. S.; Prather, K. A.; Wenzel,

- R. J.; Liu, D. Y.; Phares, D. J.; Rhoads, K. P.; Wexler, A. S.; Johnston, M. V.; Jimenez, J. L.; Jayne, J. T.; Worsnop, D. R.; Yourshaw, I.; Seinfeld, J. H.; Flagan, R. C., A Comparison of Particle Mass Spectrometers During the 1999 Atlanta Supersite Project. *Journal of Geophysical Research-Atmospheres* **2003**, *108* (D7).
51. Liu, D. Y.; Wenzel, R. J.; Prather, K. A., Aerosol Time-of-Flight Mass Spectrometry During the Atlanta Supersite Experiment: 1. Measurements. *Journal of Geophysical Research- Atmospheres* **2003**, *108* (D7).
 52. Wenzel, R. J.; Liu, D. Y.; Edgerton, E. S.; Prather, K. A., Aerosol Time-of-Flight Mass Spectrometry During the Atlanta Supersite Experiment: 2. Scaling Procedures. *Journal of Geophysical Research-Atmospheres* **2003**, *108* (D7).
 53. Whiteaker, J. R.; Prather, K. A., Hydroxymethanesulfonate as a Tracer for Fog Processing of Individual Aerosol Particles. *Atmospheric Environment* **2003**, *37* (8), 1033-1043.
 54. Su, Y. X.; Sipin, M. F.; Furutani, H.; Prather, K. A., Development and Characterization of an Aerosol Time-of-Flight Mass Spectrometer with Increased Detection Efficiency. *Analytical Chemistry* **2004**, *76* (3), 712-719.
 55. Ugarov, M. V.; Egan, T.; Khabashesku, D. V.; Schultz, J. A.; Peng, H. Q.; Khabashesku, V. N.; Furutani, H.; Prather, K. S.; Wang, H. W. J.; Jackson, S. N.; Woods, A. S., MALDI Matrices for Biomolecular Analysis Based on Functionalized Carbon Nanomaterials. *Analytical Chemistry* **2004**, *76* (22), 6734-6742.
 56. Bates, T. S.; Quinn, P. K.; Coffman, D. J.; Covert, D. S.; Miller, T. L.; Johnson, J. E.; Carmichael, G. R.; Uno, I.; Guazzotti, S. A.; Sodeman, D. A.; Prather, K. A.; Rivera, M.; Russell, L. M.; Merrill, J. T., Marine Boundary Layer Dust and Pollutant Transport Associated with the Passage of a Frontal System over Eastern Asia. *Journal of Geophysical Research-Atmospheres* **2004**, *109* (D19).
 57. Wenzel, R. J.; Prather, K. A., Improvements in Ion Signal Reproducibility Obtained Using a Homogeneous Laser Beam for on-Line Laser Desorption/Ionization of Single Particles. *Rapid Communications in Mass Spectrometry* **2004**, *18* (13), 1525-1533.
 58. Moffet, R. C.; Shields, L. G.; Berntsen, J.; Devlin, R. B.; Prather, K. A., Characterization of an Ambient Coarse Particle Concentrator Used for Human Exposure Studies: Aerosol Size Distributions, Chemical Composition, and Concentration Enrichment. *Aerosol Science and Technology* **2004**, *38* (11), 1123-1137.
 59. Tang, Y. H.; Carmichael, G. R.; Seinfeld, J. H.; Dabdub, D.; Weber, R. J.; Huebert, B.; Clarke, A. D.; Guazzotti, S. A.; Sodeman, D. A.; Prather, K. A.; Uno, I.; Woo, J. H.; Yienger, J. J.; Streets, D. G.; Quinn, P. K.; Johnson, J. E.; Song, C. H.; Grassian, V. H.; Sandu, A.; Talbot, R. W.; Dibb, J. E., Three-Dimensional Simulations of Inorganic Aerosol Distributions in East Asia During Spring 2001. *Journal of Geophysical Research- Atmospheres* **2004**, *109* (D19).
 60. Gross, D. S.; Barron, A. R.; Sukovich, E. M.; Warren, B. S.; Jarvis, J. C.; Suess, D. T.; Prather, K. A., Stability of Single Particle Tracers for Differentiating between Heavy- and Light-Duty Vehicle Emissions. *Atmospheric Environment* **2005**, *39* (16), 2889-2901.
 61. Sullivan, R. C.; Prather, K. A., Recent Advances in Our Understanding of Atmospheric Chemistry and Climate Made Possible by on-Line Aerosol Analysis Instrumentation. *Analytical Chemistry* **2005**, *77* (12), 3861-3885.
 62. Sodeman, D. A.; Toner, S. M.; Prather, K. A., Determination of Single Particle Mass Spectral Signatures from Light-Duty Vehicle Emissions. *Environmental Science & Technology* **2005**, *39* (12), 4569-4580.
 63. Su, Y. X.; Sipin, M. F.; Prather, K. A.; Gelein, R. M.; Lunts, A.; Oberdorster, G., ATOFMS Characterization of Individual Model Aerosol Particles Used for Exposure Studies. *Aerosol Science and Technology* **2005**, *39* (5), 400-407.
 64. Moffet, R. C.; Prather, K. A., Extending ATOFMS Measurements to Include Refractive Index and Density. *Analytical Chemistry* **2005**, *77* (20), 6535-6541.
 65. Zhao, W. X.; Hopke, P. K.; Qin, X. Y.; Prather, K. A., Predicting Bulk Ambient Aerosol Compositions from ATOFMS Data with ART-2a and Multivariate Analysis. *Analytica Chimica Acta* **2005**, *549* (1-2), 179-187.
 66. Spencer, M. T.; Shields, L. G.; Sodeman, D. A.; Toner, S. M.; Prather, K. A., Comparison of Oil and Fuel Particle Chemical Signatures with Particle Emissions from Heavy and Light Duty Vehicles.

- Atmospheric Environment* **2006**, *40* (27), 5224-5235.
67. Su, Y. X.; Sipin, M. F.; Spencer, M. T.; Qin, X. Y.; Moffet, R. C.; Shields, L. G.; Prather, K. A.; Venkatachari, P.; Jeong, C. H.; Kim, E.; Hopke, P. K.; Gelein, R. M.; Utell, M. J.; Oberdorster, G.; Berntsen, J.; Devlin, R. B.; Chen, L. C., Real-Time Characterization of the Composition of Individual Particles Emitted from Ultrafine Particle Concentrators. *Aerosol Science and Technology* **2006**, *40* (6), 437-455.
 68. Qin, X. Y.; Bhave, P. V.; Prather, K. A., Comparison of Two Methods for Obtaining Quantitative Mass Concentrations from Aerosol Time-of-Flight Mass Spectrometry Measurements. *Analytical Chemistry* **2006**, *78* (17), 6169-6178.
 69. Arimoto, R.; Kim, Y. J.; Kim, Y. P.; Quinn, P. K.; Bates, T. S.; Anderson, T. L.; Gong, S.; Uno, I.; Chin, M.; Huebert, B. J.; Clarke, A. D.; Shinozuka, Y.; Weber, R. J.; Anderson, J. R.; Guazzotti, S. A.; Sullivan, R. C.; Sodeman, D. A.; Prather, K. A.; Sokolik, I. N., Characterization of Asian Dust During Ace-Asia. *Global and Planetary Change* **2006**, *52* (1- 4), 23-56.
 70. Spencer, M. T.; Prather, K. A., Using ATOFMS to Determine OC/EC Mass Fractions in Particles. *Aerosol Science and Technology* **2006**, *40* (8), 585-594.
 71. Toner, S. M.; Sodeman, D. A.; Prather, K. A., Single Particle Characterization of Ultrafine and Accumulation Mode Particles from Heavy Duty Diesel Vehicles Using Aerosol Time- of-Flight Mass Spectrometry. *Environmental Science & Technology* **2006**, *40* (12), 3912- 3921.
 72. Allen, J. O.; Bhave, P. V.; Whiteaker, J. R.; Prather, K. A., Instrument Busy Time and Mass Measurement Using Aerosol Time-of-Flight Mass Spectrometry. *Aerosol Science and Technology* **2006**, *40* (8), 615-626.
 73. Qin, X. Y.; Prather, K. A., Impact of Biomass Emissions on Particle Chemistry During the California Regional Particulate Air Quality Study. *International Journal of Mass Spectrometry* **2006**, *258* (1-3), 142-150.
 74. Denkenberger, K. A.; Moffet, R. C.; Holecek, J. C.; Rebotier, T. P.; Prather, K. A., Real- Time, Single-Particle Measurements of Oligomers in Aged Ambient Aerosol Particles. *Environmental Science & Technology* **2007**, *41* (15), 5439-5446.
 75. Holecek, J. C.; Spencer, M. T.; Prather, K. A., Analysis of Rainwater Samples: Comparison of Single Particle Residues with Ambient Particle Chemistry from the Northeast Pacific and Indian Oceans. *Journal of Geophysical Research-Atmospheres* **2007**, *112* (D22).
 76. Muhle, J.; Lueker, T. J.; Su, Y.; Miller, B. R.; Prather, K. A.; Weiss, R. F., Trace Gas and Particulate Emissions from the 2003 Southern California Wildfires. *Journal of Geophysical Research-Atmospheres* **2007**, *112* (D3).
 77. Rebotier, T. P.; Prather, K. A., Aerosol Time-of-Flight Mass Spectrometry Data Analysis: A Benchmark of Clustering Algorithms. *Analytica Chimica Acta* **2007**, *585* (1), 38-54.
 78. Shields, L. G.; Suess, D. T.; Prather, K. A., Determination of Single Particle Mass Spectral Signatures from Heavy-Duty Diesel Vehicle Emissions for PM_{2.5} Source Apportionment. *Atmospheric Environment* **2007**, *41* (18), 3841-3852.
 79. Spencer, M. T.; Shields, L. G.; Prather, K. A., Simultaneous Measurement of the Effective Density and Chemical Composition of Ambient Aerosol Particles. *Environmental Science & Technology* **2007**, *41* (4), 1303-1309.
 80. Sullivan, R. C.; Guazzotti, S. A.; Sodeman, D. A.; Prather, K. A., Direct Observations of the Atmospheric Processing of Asian Mineral Dust. *Atmospheric Chemistry and Physics* **2007**, *7*, 1213-1236.
 81. Sullivan, R. C.; Guazzotti, S. A.; Sodeman, D. A.; Tang, Y. H.; Carmichael, G. R.; Prather, K. A., Mineral Dust Is a Sink for Chlorine in the Marine Boundary Layer. *Atmospheric Environment* **2007**, *41* (34), 7166-7179.
 82. Sullivan, R. C.; Prather, K. A., Investigations of the Diurnal Cycle and Mixing State of Oxalic Acid in Individual Particles in Asian Aerosol Outflow. *Environmental Science & Technology* **2007**, *41* (23), 8062-8069.
 83. Cubison, M. J.; Ervens, B.; Feingold, G.; Docherty, K. S.; Ulbrich, I. M.; Shields, L.; Prather, K.; Hering, S.; Jimenez, J. L., The Influence of Chemical Composition and Mixing State of Los Angeles Urban Aerosol on CCN Number and Cloud Properties. *Atmospheric Chemistry and Physics* **2008**, *8*

- (18), 5649-5667.
84. Furutani, H.; Dall'osto, M.; Roberts, G. C.; Prather, K. A., Assessment of the Relative Importance of Atmospheric Aging on CCN Activity Derived from Field Observations. *Atmospheric Environment* **2008**, *42* (13), 3130-3142.
 85. Moffet, R. C.; de Foy, B.; Molina, L. T.; Molina, M. J.; Prather, K. A., Measurement of Ambient Aerosols in Northern Mexico City by Single Particle Mass Spectrometry. *Atmospheric Chemistry and Physics* **2008**, *8* (16), 4499-4516.
 86. Moffet, R. C.; Desyaterik, Y.; Hopkins, R. J.; Tivanski, A. V.; Gilles, M. K.; Wang, Y.; Shutthanandan, V.; Molina, L. T.; Abraham, R. G.; Johnson, K. S.; Mugica, V.; Molina, M. J.; Laskin, A.; Prather, K. A., Characterization of Aerosols Containing Zn, Pb, and Cl from an Industrial Region of Mexico City. *Environmental Science & Technology* **2008**, *42* (19), 7091-7097.
 87. Moffet, R. C.; Qin, X. Y.; Rebotier, T.; Furutani, H.; Prather, K. A., Chemically Segregated Optical and Microphysical Properties of Ambient Aerosols Measured in a Single-Particle Mass Spectrometer. *Journal of Geophysical Research-Atmospheres* **2008**, *113* (D12).
 88. Prather, K. A.; Hatch, C. D.; Grassian, V. H., Analysis of Atmospheric Aerosols. *Annual Review of Analytical Chemistry* **2008**, *1*, 485-514.
 89. Shields, L. G.; Qin, X. Y.; Toner, S. M.; Prather, K. A., Detection of Ambient Ultrafine Aerosols by Single Particle Techniques During the SOAR 2005 Campaign. *Aerosol Science and Technology* **2008**, *42* (8), 674-684.
 90. Spencer, M. T.; Furutani, H.; Oldenburg, S. J.; Darlington, T. K.; Prather, K. A., Gold Nanoparticles as a Matrix for Visible-Wavelength Single-Particle Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry of Small Biomolecules. *Journal of Physical Chemistry C* **2008**, *112* (11), 4083-4090.
 91. Spencer, M. T.; Holecek, J. C.; Corrigan, C. E.; Ramanathan, V.; Prather, K. A., Size- Resolved Chemical Composition of Aerosol Particles During a Monsoonal Transition Period over the Indian Ocean. *Journal of Geophysical Research-Atmospheres* **2008**, *113* (D16).
 92. Toner, S. M.; Shields, L. G.; Sodeman, D. A.; Prather, K. A., Using Mass Spectral Source Signatures to Apportion Exhaust Particles from Gasoline and Diesel Powered Vehicles in a Freeway Study Using UF-ATOFMS. *Atmospheric Environment* **2008**, *42* (3), 568-581.
 93. Zhao, W. X.; Hopke, P. K.; Prather, K. A., Comparison of Two Cluster Analysis Methods Using Single Particle Mass Spectra. *Atmospheric Environment* **2008**, *42* (5), 881-892.
 94. Ault, A. P.; Moore, M. J.; Furutani, H.; Prather, K. A., Impact of Emissions from the Los Angeles Port Region on San Diego Air Quality During Regional Transport Events. *Environmental Science & Technology* **2009**, *43* (10), 3500-3506.
 95. Moffet, R. C.; Prather, K. A., In-Situ Measurements of the Mixing State and Optical Properties of Soot with Implications for Radiative Forcing Estimates. *Proceedings of the National Academy of Sciences of the United States of America* **2009**, *106* (29), 11872-11877.
 96. Prather, K. A., Our Current Understanding of the Impact of Aerosols on Climate Change. *Chemosuschem* **2009**, *2* (5), 377-379.
 97. Pratt, K. A.; DeMott, P. J.; French, J. R.; Wang, Z.; Westphal, D. L.; Heymsfield, A. J.; Twohy, C. H.; Prenni, A. J.; Prather, K. A., In Situ Detection of Biological Particles in Cloud Ice-Crystals. *Nature Geoscience* **2009**, *2* (6), 397-400.
 98. Pratt, K. A.; Hatch, L. E.; Prather, K. A., Seasonal Volatility Dependence of Ambient Particle Phase Amines. *Environmental Science & Technology* **2009**, *43* (14), 5276-5281.
 99. Pratt, K. A.; Mayer, J. E.; Holecek, J. C.; Moffet, R. C.; Sanchez, R. O.; Rebotier, T. P.; Furutani, H.; Gonin, M.; Fuhrer, K.; Su, Y. X.; Guazzotti, S.; Prather, K. A., Development and Characterization of an Aircraft Aerosol Time-of-Flight Mass Spectrometer. *Analytical Chemistry* **2009**, *81* (5), 1792-1800.
 100. Sullivan, R. C.; Moore, M. J. K.; Petters, M. D.; Kreidenweis, S. M.; Roberts, G. C.; Prather, K. A., Timescale for Hygroscopic Conversion of Calcite Mineral Particles through Heterogeneous Reaction with Nitric Acid. *Physical Chemistry Chemical Physics* **2009**, *11* (36), 7826-7837.
 101. Sullivan, R. C.; Moore, M. J. K.; Petters, M. D.; Kreidenweis, S. M.; Roberts, G. C.; Prather, K. A., Effect of Chemical Mixing State on the Hygroscopicity and Cloud Nucleation Properties of Calcium Mineral Dust Particles. *Atmospheric Chemistry and Physics* **2009**, *9* (10), 3303-3316.
 102. Pratt, K. A.; Prather, K. A., Real-Time, Single-Particle Volatility, Size, and Chemical Composition

- Measurements of Aged Urban Aerosols. *Environmental Science & Technology* **2009**, *43* (21), 8276-8282.
103. Martin, S. T.; Andreae, M. O.; Artaxo, P.; Baumgardner, D.; Chen, Q.; Goldstein, A. H.; Guenther, A.; Heald, C. L.; Mayol-Bracero, O. L.; McMurry, P. H.; Pauliquevis, T.; Poschl, U.; Prather, K. A.; Roberts, G. C.; Saleska, S. R.; Dias, M. A. S.; Spracklen, D. V.; Swietlicki, E.; Trebs, I., Sources and Properties of Amazonian Aerosol Particles. *Reviews of Geophysics* **2010**, *48*.
 104. Ault, A. P.; Gaston, C. J.; Wang, Y.; Dominguez, G.; Thiemens, M. H.; Prather, K. A., Characterization of the Single Particle Mixing State of Individual Ship Plume Events Measured at the Port of Los Angeles. *Environmental Science & Technology* **2010**, *44* (6), 1954-1961.
 105. Bahadur, R.; Russell, L. M.; Prather, K., Composition and Morphology of Individual Combustion, Biomass Burning, and Secondary Organic Particle Types Obtained Using Urban and Coastal ATOFMS and STXM-NEXAFS Measurements. *Aerosol Science and Technology* **2010**, *44* (7), 551-562.
 106. Eidhammer, T.; DeMott, P. J.; Prenni, A. J.; Petters, M. D.; Twohy, C. H.; Rogers, D. C.; Stith, J.; Heymsfield, A.; Wang, Z.; Pratt, K. A.; Prather, K. A.; Murphy, S. M.; Seinfeld, J. H.; Subramanian, R.; Kreidenweis, S. M., Ice Initiation by Aerosol Particles: Measured and Predicted Ice Nuclei Concentrations Versus Measured Ice Crystal Concentrations in an Orographic Wave Cloud. *Journal of the Atmospheric Sciences* **2010**, *67* (8), 2417-2436.
 107. Gaston, C. J.; Pratt, K. A.; Qin, X. Y.; Prather, K. A., Real-Time Detection and Mixing State of Methanesulfonate in Single Particles at an Inland Urban Location During a Phytoplankton Bloom. *Environmental Science & Technology* **2010**, *44* (5), 1566-1572.
 108. Pratt, K. A.; Heymsfield, A. J.; Twohy, C. H.; Murphy, S. M.; DeMott, P. J.; Hudson, J. G.; Subramanian, R.; Wang, Z. E.; Seinfeld, J. H.; Prather, K. A., In Situ Chemical Characterization of Aged Biomass-Burning Aerosols Impacting Cold Wave Clouds. *Journal of the Atmospheric Sciences* **2010**, *67* (8), 2451-2468.
 109. Pratt, K. A.; Prather, K. A., Aircraft Measurements of Vertical Profiles of Aerosol Mixing States. *Journal of Geophysical Research-Atmospheres* **2010**, *115*.
 110. Pratt, K. A.; Twohy, C. H.; Murphy, S. M.; Moffet, R. C.; Heymsfield, A. J.; Gaston, C. J.; DeMott, P. J.; Field, P. R.; Henn, T. R.; Rogers, D. C.; Gilles, M. K.; Seinfeld, J. H.; Prather, K. A., Observation of Playa Salts as Nuclei in Orographic Wave Clouds. *Journal of Geophysical Research-Atmospheres* **2010**, *115*.
 111. Sullivan, R. C.; Moore, M. J. K.; Petters, M. D.; Kreidenweis, S. M.; Qafoku, O.; Laskin, A.; Roberts, G. C.; Prather, K. A., Impact of Particle Generation Method on the Apparent Hygroscopicity of Insoluble Mineral Particles. *Aerosol Science and Technology* **2010**, *44* (10), 830-846.
 112. Twohy, C. H.; DeMott, P. J.; Pratt, K. A.; Subramanian, R.; Kok, G. L.; Murphy, S. M.; Lersch, T.; Heymsfield, A. J.; Wang, Z. E.; Prather, K. A.; Seinfeld, J. H., Relationships of Biomass-Burning Aerosols to Ice in Orographic Wave Clouds. *Journal of the Atmospheric Sciences* **2010**, *67* (8), 2437-2450.
 113. Ault, A. P.; Williams, C. R.; White, A. B.; Neiman, P. J.; Creamean, J. M.; Gaston, C. J.; Ralph, F. M.; Prather, K. A., Detection of Asian Dust in California Orographic Precipitation. *Journal of Geophysical Research-Atmospheres* **2011**, *116*.
 114. Creamean, J. M.; Ault, A. P.; Ten Hoeve, J. E.; Jacobson, M. Z.; Roberts, G. C.; Prather, K. A., Measurements of Aerosol Chemistry During New Particle Formation Events at a Remote Rural Mountain Site. *Environmental Science & Technology* **2011**, *45* (19), 8208-8216.
 115. Gaston, C. J.; Furutani, H.; Guazzotti, S. A.; Coffee, K. R.; Bates, T. S.; Quinn, P. K.; Aluwihare, L. I.; Mitchell, B. G.; Prather, K. A., Unique Ocean-Derived Particles Serve as a Proxy for Changes in Ocean Chemistry. *Journal of Geophysical Research-Atmospheres* **2011**, *116*.
 116. Hatch, L. E.; Creamean, J. M.; Ault, A. P.; Surratt, J. D.; Chan, M. N.; Seinfeld, J. H.; Edgerton, E. S.; Su, Y. X.; Prather, K. A., Measurements of Isoprene-Derived Organosulfates in Ambient Aerosols by Aerosol Time-of-Flight Mass Spectrometry-Part 2: Temporal Variability and Formation Mechanisms. *Environmental Science & Technology* **2011**, *45* (20), 8648-8655.
 117. Hatch, L. E.; Creamean, J. M.; Ault, A. P.; Surratt, J. D.; Chan, M. N.; Seinfeld, J. H.; Edgerton, E. S.; Su, Y. X.; Prather, K. A., Measurements of Isoprene-Derived Organosulfates in Ambient Aerosols by Aerosol Time-of-Flight Mass Spectrometry - Part 1: Single Particle Atmospheric Observations in Atlanta. *Environmental Science & Technology* **2011**, *45* (12), 5105-5111.

118. Kim, M.; Cahill, J. F.; Prather, K. A.; Cohen, S. M., Postsynthetic Modification at Orthogonal Reactive Sites on Mixed, Bifunctional Metal-Organic Frameworks. *Chemical Communications* **2011**, 47 (27), 7629-7631.
119. Moore, M. J. K.; Furutani, H.; Roberts, G. C.; Moffet, R. C.; Gilles, M. K.; Palenik, B.; Prather, K. A., Effect of Organic Compounds on Cloud Condensation Nuclei (CCN) Activity of Sea Spray Aerosol Produced by Bubble Bursting. *Atmospheric Environment* **2011**, 45 (39), 7462-7469.
120. Pratt, K. A.; Murphy, S. M.; Subramanian, R.; DeMott, P. J.; Kok, G. L.; Campos, T.; Rogers, D. C.; Prenni, A. J.; Heymsfield, A. J.; Seinfeld, J. H.; Prather, K. A., Flight-Based Chemical Characterization of Biomass Burning Aerosols within Two Prescribed Burn Smoke Plumes. *Atmospheric Chemistry and Physics* **2011**, 11 (24), 12549-12565.
121. Urbano, R.; Palenik, B.; Gaston, C. J.; Prather, K. A., Detection and Phylogenetic Analysis of Coastal Bioaerosols Using Culture Dependent and Independent Techniques. *Biogeosciences* **2011**, 8 (2), 301-309.
122. Zauscher, M. D.; Moore, M. J. K.; Lewis, G. S.; Hering, S. V.; Prather, K. A., Approach for Measuring the Chemistry of Individual Particles in the Size Range Critical for Cloud Formation. *Analytical Chemistry* **2011**, 83 (6), 2271-2278.
123. Riedel, T. P.; Bertram, T. H.; Ryder, O. S.; Liu, S.; Day, D. A.; Russell, L. M.; Gaston, C. J.; Prather, K. A.; Thornton, J. A., Direct N₂O₅ Reactivity Measurements at a Polluted Coastal Site. *Atmospheric Chemistry and Physics* **2012**, 12 (6), 2959-2968.
124. Bahadur, R.; Russell, L. M.; Jacobson, M. Z.; Prather, K.; Nenes, A.; Adams, P.; Seinfeld, J. H., Importance of Composition and Hygroscopicity of BC Particles to the Effect of BC Mitigation on Cloud Properties: Application to California Conditions. *Journal of Geophysical Research-Atmospheres* **2012**, 117.
125. Field, P. R.; Heymsfield, A. J.; Shipway, B. J.; DeMott, P. J.; Pratt, K. A.; Rogers, D. C.; Stith, J.; Prather, K. A., Ice in Clouds Experiment-Layer Clouds. Part II: Testing Characteristics of Heterogeneous Ice Formation in Lee Wave Clouds. *Journal of the Atmospheric Sciences* **2012**, 69 (3), 1066-1079.
126. Kim, M.; Cahill, J. F.; Su, Y. X.; Prather, K. A.; Cohen, S. M., Postsynthetic Ligand Exchange as a Route to Functionalization of 'Inert' Metal-Organic Frameworks. *Chemical Science* **2012**, 3 (1), 126-130.
127. Pratt, K. A.; Prather, K. A., Mass Spectrometry of Atmospheric Aerosols: Recent Developments and Applications. Part I: Off-Line Mass Spectrometry Techniques. *Mass Spectrometry Reviews* **2012**, 31 (1), 1-16.
128. Pratt, K. A.; Prather, K. A., Mass Spectrometry of Atmospheric Aerosols: Recent Developments and Applications. Part II: On-Line Mass Spectrometry Techniques. *Mass Spectrometry Reviews* **2012**, 31 (1), 17-48.
129. Qin, X. Y.; Pratt, K. A.; Shields, L. G.; Toner, S. M.; Prather, K. A., Seasonal Comparisons of Single-Particle Chemical Mixing State in Riverside, CA. *Atmospheric Environment* **2012**, 59, 587-596.
130. Zaveri, R. A.; Shaw, W. J.; Cziczo, D. J.; Schmid, B.; Ferrare, R. A.; Alexander, M. L.; Alexandrov, M.; Alvarez, R. J.; Arnott, W. P.; Atkinson, D. B.; Baidar, S.; Banta, R. M.; Barnard, J. C.; Beranek, J.; Berg, L. K.; Brechtel, F.; Brewer, W. A.; Cahill, J. F.; Cairns, B.; Cappa, C. D.; Chand, D.; China, S.; Comstock, J. M.; Dubey, M. K.; Easter, R. C.; Erickson, M. H.; Fast, J. D.; Floerchinger, C.; Flowers, B. A.; Fortner, E.; Gaffney, J. S.; Gilles, M. K.; Gorkowski, K.; Gustafson, W. I.; Gyawali, M.; Hair, J.; Hardesty, R. M.; Harworth, J. W.; Herndon, S.; Hiranuma, N.; Hostetler, C.; Hubbe, J. M.; Jayne, J. T.; Jeong, H.; Jobson, T.; Kassianov, E. I.; Kleinman, L. I.; Kluzek, C.; Knighton, B.; Kolesar, K. R.; Kuang, J.; Kubatova, A.; Langford, A. O.; Laskin, A.; Laulainen, N.; Marchbanks, R. D.; Mazzoleni, C.; Mei, F.; Moffet, R. C.; Nelson, D.; Obland, M. D.; Oetjen, H.; Onasch, T. B.; Ortega, I.; Ottaviani, M.; Pekour, M.; Prather, K. A.; Radney, J. G.; Rogers, R. R.; Sandberg, S. P.; Sedlacek, A.; Senff, C. J.; Senum, G.; Setyan, A.; Shilling, J. E.; Shrivastava, M.; Song, C.; Springston, S. R.; Subramanian, R.; Suski, K.; Tomlinson, J.; Volkamer, R.; Wallace, H. W.; Wang, J.; Weickmann, A. M.; Worsnop, D. R.; Yu, X. Y.; Zelenyuk, A.; Zhang, Q., Overview of the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES). *Atmospheric Chemistry and Physics* **2012**, 12 (16), 7647-7687.
131. Kim, M.; Cahill, J. F.; Fei, H. H.; Prather, K. A.; Cohen, S. M., Postsynthetic Ligand and Cation

- Exchange in Robust Metal-Organic Frameworks. *Journal of the American Chemical Society* **2012**, *134* (43), 18082-18088.
132. Cahill, J. F.; Suski, K.; Seinfeld, J. H.; Zaveri, R. A.; Prather, K. A., The Mixing State of Carbonaceous Aerosol Particles in Northern and Southern California Measured During CARES and Calnex 2010. *Atmospheric Chemistry and Physics* **2012**, *12* (22), 10989-11002.
133. Weiss-Penzias, P. S.; Williams, E. J.; Lerner, B. M.; Bates, T. S.; Gaston, C.; Prather, K.; Vlasenko, A.; Li, S. M., Shipboard Measurements of Gaseous Elemental Mercury Along the Coast of Central and Southern California. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (1), 208-219.
134. Stokes, M. D.; Deane, G. B.; Prather, K.; Bertram, T. H.; Ruppel, M. J.; Ryder, O. S.; Brady, J. M.; Zhao, D., A Marine Aerosol Reference Tank System as a Breaking Wave Analogue for the Production of Foam and Sea-Spray Aerosols. *Atmospheric Measurement Techniques* **2013**, *6* (4), 1085-1094.
135. Ryerson, T. B.; Andrews, A. E.; Angevine, W. M.; Bates, T. S.; Brock, C. A.; Cairns, B.; Cohen, R. C.; Cooper, O. R.; de Gouw, J. A.; Fehsenfeld, F. C.; Ferrare, R. A.; Fischer, M. L.; Flagan, R. C.; Goldstein, A. H.; Hair, J. W.; Hardesty, R. M.; Hostetler, C. A.; Jimenez, J. L.; Langford, A.O.; McCauley, E.; McKeen, S. A.; Molina, L. T.; Nenes, A.; Oltmans, S. J.; Parrish, D. D.; Pederson, J. R.; Pierce, R. B.; Prather, K.; Quinn, P. K.; Seinfeld, J. H.; Senff, C. J.; Sorooshian, A.; Stutz, J.; Surratt, J. D.; Trainer, M.; Volkamer, R.; Williams, E. J.; Wofsy, S. C., The 2010 California Research at the Nexus of Air Quality and Climate Change (Calnex) Field Study. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (11), 5830-5866.
136. Ault, A. P.; Zhao, D. F.; Ebben, C. J.; Tauber, M. J.; Geiger, F. M.; Prather, K. A.; Grassian, V. H., Raman Microspectroscopy and Vibrational Sum-Frequency Generation Spectroscopy as Probes of the Bulk and Surface Compositions of Size-Resolved Sea Spray Aerosol Particles. *Physical Chemistry Chemical Physics* **2013**, *15* (17), 6206-6214.
137. Collins, D. B.; Zhao, D. F.; Ruppel, M. J.; Deane, G. B.; Stokes, M. D.; DeMott, P. J.; Lee, C.; Modini, R. L.; Russell, L. M.; Prather, K. A., Evaluating the Properties of Sea Spray Aerosols Produced in the Laboratory: Comparisons with Controlled Breaking Waves. *Nucleation and Atmospheric Aerosols* **2013**, *1527*, 551-554.
138. DeMott, P. J.; Sullivan, R. C.; Ruppel, M. J.; Hill, T. C.; Mason, R.; Ault, A. P.; Prather, K. A.; Collins, D. B.; Kim, M. J.; Bertram, A.; Bertram, T.; Grassian, V. K.; Franc, G. D., Laboratory Measurements of Ice Nuclei Concentrations from Ocean Water Spray. *Nucleation and Atmospheric Aerosols* **2013**, *1527*, 941-944.
139. Cazorla, A.; Bahadur, R.; Suski, K. J.; Cahill, J. F.; Chand, D.; Schmid, B.; Ramanathan, V.; Prather, K. A., Relating Aerosol Absorption Due to Soot, Organic Carbon, and Dust to Emission Sources Determined From In-Situ Chemical Measurements. *Atmospheric Chemistry and Physics* **2013**, *13* (18), 9337-9350.
140. Phillips, V. T. J.; Demott, P. J.; Andronache, C.; Pratt, K. A.; Prather, K. A.; Subramanian, R.; Twohy, C., Improvements to an Empirical Parameterization of Heterogeneous Ice Nucleation and Its Comparison with Observations. *Journal of the Atmospheric Sciences* **2013**, *70* (2), 378-409.
141. Creamean, J. M.; Suski, K. J.; Rosenfeld, D.; Cazorla, A.; DeMott, P. J.; Sullivan, R. C.; White, A. B.; Ralph, F. M.; Minnis, P.; Comstock, J. M.; Tomlinson, J. M.; Prather, K. A., Dust and Biological Aerosols from the Sahara and Asia Influence Precipitation in the Western U.S. *Science* **2013**, *339* (6127), 1572-1578.
142. Fei, H. H.; Cahill, J. F.; Prather, K. A.; Cohen, S. M., Tandem Postsynthetic Metal Ion and Ligand Exchange in Zeolitic Imidazolate Frameworks. *Inorganic Chemistry* **2013**, *52* (7), 4011-4016.
143. Hersey, S. P.; Craven, J. S.; Metcalf, A. R.; Lin, J.; Lathem, T.; Suski, K. J.; Cahill, J. F.; Duong, H. T.; Sorooshian, A.; Jonsson, H. H.; Shiraiwa, M.; Zuend, A.; Nenes, A.; Prather, K. A.; Flagan, R. C.; Seinfeld, J. H., Composition and Hygroscopicity of the Los Angeles Aerosol: Calnex. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (7), 3016-3036.
144. Prather, K. A.; Bertram, T. H.; Grassian, V. H.; Deane, G. B.; Stokes, M. D.; DeMott, P. J.; Aluwihare, L. I.; Palenik, B. P.; Azam, F.; Seinfeld, J. H.; Moffet, R. C.; Molina, M. J.; Cappa, C. D.; Geiger, F. M.; Roberts, G. C.; Russell, L. M.; Ault, A. P.; Baltrusaitis, J.; Collins, D. B.; Corrigan, C. E.; Cuadra-Rodriguez, L. A.; Ebben, C. J.; Forestieri, S. D.; Guasco, T. L.; Hersey, S. P.; Kim, M. J.; Lambert, W. F.; Modini, R. L.; Mui, W.; Pedler, B. E.; Ruppel, M. J.; Ryder, O. S.; Schoepp, N. G.; Sullivan, R. C.; Zhao, D. F., Bringing the Ocean into the Laboratory to Probe the Chemical Complexity of Sea Spray

- Aerosol. *Proceedings of the National Academy of Sciences of the United States of America* **2013**, *110* (19), 7550-7555.
145. Gaston, C. J.; Quinn, P. K.; Bates, T. S.; Gilman, J. B.; Bon, D. M.; Kuster, W. C.; Prather, K. A., The Impact of Shipping, Agricultural, and Urban Emissions on Single Particle Chemistry Observed Aboard the R/V Atlantis During Calnex. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (10), 5003-5017.
 146. Ault, A. P.; Moffet, R. C.; Baltrusaitis, J.; Collins, D. B.; Ruppel, M. J.; Cuadra-Rodriguez, L. A.; Zhao, D. F.; Guasco, T. L.; Ebben, C. J.; Geiger, F. M.; Bertram, T. H.; Prather, K. A.; Grassian, V. H., Size-Dependent Changes in Sea Spray Aerosol Composition and Properties with Different Seawater Conditions. *Environmental Science & Technology* **2013**, *47* (11), 5603-5612.
 147. Zauscher, M. D.; Wang, Y.; Moore, M. J. K.; Gaston, C. J.; Prather, K. A., Air Quality Impact and Physicochemical Aging of Biomass Burning Aerosols During the 2007 San Diego Wildfires. *Environmental Science & Technology* **2013**, *47* (14), 7633-7643.
 148. Ebben, C. J.; Ault, A. P.; Ruppel, M. J.; Ryder, O. S.; Bertram, T. H.; Grassian, V. H.; Prather, K. A.; Geiger, F. M., Size-Resolved Sea Spray Aerosol Particles Studied by Vibrational Sum Frequency Generation. *Journal of Physical Chemistry A* **2013**, *117* (30), 6589-6601.
 149. Collins, D. B.; Ault, A. P.; Moffet, R. C.; Ruppel, M. J.; Cuadra-Rodriguez, L. A.; Guasco, T. L.; Corrigan, C. E.; Pedler, B. E.; Azam, F.; Aluwihare, L. I.; Bertram, T. H.; Roberts, G. C.; Grassian, V. H.; Prather, K. A., Impact of Marine Biogeochemistry on the Chemical Mixing State and Cloud Forming Ability of Nascent Sea Spray Aerosol. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (15), 8553-8565.
 150. Bauer, S. E.; Ault, A. P.; Prather, K. A., Evaluation of Aerosol Mixing State Classes in the Giss Modele-Matrix Climate Model Using Single-Particle Mass Spectrometry Measurements. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (17), 9834-9844.
 151. Meskhidze, N.; Petters, M. D.; Tsigaridis, K.; Bates, T.; O'Dowd, C.; Reid, J.; Lewis, E. R.; Gantt, B.; Anguelova, M. D.; Bhawe, P. V.; Bird, J.; Callaghan, A. H.; Ceburnis, D.; Chang, R.; Clarke, A.; de Leeuw, G.; Deane, G.; DeMott, P. J.; Elliot, S.; Facchini, M. C.; Fairall, C. W.; Hawkins, L.; Hu, Y. X.; Hudson, J. G.; Johnson, M. S.; Kaku, K. C.; Keene, W. C.; Kieber, D. J.; Long, M. S.; Martensson, M.; Modini, R. L.; Osburn, C. L.; Prather, K. A.; Pszenny, A.; Rinaldi, M.; Russell, L. M.; Salter, M.; Sayer, A. M.; Smirnov, A.; Suda, S. R.; Toth, T. D.; Worsnop, D. R.; Wozniak, A.; Zorn, S. R., Production Mechanisms, Number Concentration, Size Distribution, Chemical Composition, and Optical Properties of Sea Spray Aerosols. *Atmospheric Science Letters* **2013**, *14* (4), 207-213.
 152. Ault, A. P.; Guasco, T. L.; Ryder, O. S.; Baltrusaitis, J.; Cuadra-Rodriguez, L. A.; Collins, D. B.; Ruppel, M. J.; Bertram, T. H.; Prather, K. A.; Grassian, V. H., Inside Versus Outside: Ion Redistribution in Nitric Acid Reacted Sea Spray Aerosol Particles as Determined by Single Particle Analysis. *Journal of the American Chemical Society* **2013**, *135* (39), 14528- 14531.
 153. Rosenfeld, D.; Chemke, R.; DeMott, P.; Sullivan, R. C.; Rasmussen, R.; McDonough, F.; Comstock, J.; Schmid, B.; Tomlinson, J.; Jonsson, H.; Suski, K.; Cazorla, A.; Prather, K., The Common Occurrence of Highly Supercooled Drizzle and Rain near the Coastal Regions of the Western United States. *Journal of Geophysical Research-Atmospheres* **2013**, *118* (17), 9819-9833.
 154. Guasco, T. L.; Cuadra-Rodriguez, L. A.; Pedler, B. E.; Ault, A. P.; Collins, D. B.; Zhao, D. F.; Kim, M. J.; Ruppel, M. J.; Wilson, S. C.; Pomeroy, R. S.; Grassian, V. H.; Azam, F.; Bertram, T. H.; Prather, K. A., Transition Metal Associations with Primary Biological Particles in Sea Spray Aerosol Generated in a Wave Channel. *Environmental Science & Technology* **2014**, *48* (2), 1324-1333.
 155. Fan, J.; Leung, L. R.; DeMott, P. J.; Comstock, J. M.; Singh, B.; Rosenfeld, D.; Tomlinson, J. M.; White, A.; Prather, K. A.; Minnis, P.; Ayers, J. K.; Min, Q., Aerosol Impacts on California Winter Clouds and Precipitation During CalWater 2011: Local Pollution Versus Long-Range Transported Dust. *Atmospheric Chemistry and Physics* **2014**, *14* (1), 81-101.
 156. Ryder, O. S.; Ault, A. P.; Cahill, J. F.; Guasco, T. L.; Riedel, T. P.; Cuadra-Rodriguez, L. A.; Gaston, C. J.; Fitzgerald, E.; Lee, C.; Prather, K. A.; Bertram, T. H., On the Role of Particle Inorganic Mixing State in the Reactive Uptake of N₂O₅ to Ambient Aerosol Particles. *Environmental Science & Technology* **2014**, *48* (3), 1618-1627.

157. Ault, A. P.; Guasco, T. L.; Baltrusaitis, J.; Ryder, O. S.; Trueblood, J. V.; Collins, D. B.; Ruppel, M. J.; Cuadra-Rodriguez, L. A.; Prather, K. A.; Grassian, V. H., Heterogeneous Reactivity of Nitric Acid with Nascent Sea Spray Aerosol: Large Differences Observed between and within Individual Particles. *Journal of Physical Chemistry Letters* **2014**, *5* (15), 2493-2500.
158. Rosenfeld, D.; Chemke, R.; Prather, K.; Suski, K.; Comstock, J. M.; Schmid, B.; Tomlinson, J.; Jonsson, H., Polluting of Winter Convective Clouds Upon Transition from Ocean Inland Over Central California: Contrasting Case Studies. *Atmospheric Research* **2014**, *135*, 112- 127.
159. Creamean, J. M.; Lee, C.; Hill, T. C.; Ault, A. P.; DeMott, P. J.; White, A. B.; Ralph, F. M.; Prather, K. A., Chemical Properties of Insoluble Precipitation Residue Particles. *Journal of Aerosol Science* **2014**, *76*, 13-27.
160. Hatch, L. E.; Pratt, K. A.; Huffman, J. A.; Jimenez, J. L.; Prather, K. A., Impacts of Aerosol Aging on Laser Desorption/Ionization in Single-Particle Mass Spectrometers. *Aerosol Science and Technology* **2014**, *48* (10), 1050-1058.
161. Cahill, J. F.; Darlington, T. K.; Wang, X. L.; Mayer, J.; Spencer, M. T.; Holecek, J. C.; Reed, B. E.; Prather, K. A., Development of a High-Pressure Aerodynamic Lens for Focusing Large Particles (4-10 μm) into the Aerosol Time-of-Flight Mass Spectrometer. *Aerosol Science and Technology* **2014**, *48* (9), 948-956.
162. Collins, D. B.; Zhao, D. F.; Ruppel, M. J.; Laskina, O.; Grandquist, J. R.; Modini, R. L.; Stokes, M. D.; Russell, L. M.; Bertram, T. H.; Grassian, V. H.; Deane, G. B.; Prather, K. A., Direct Aerosol Chemical Composition Measurements to Evaluate the Physicochemical Differences between Controlled Sea Spray Aerosol Generation Schemes. *Atmospheric Measurement Techniques* **2014**, *7* (11), 3667-3683.
163. Spiegel, J. K.; Buchmann, N.; Mayol-Bracero, O. L.; Cuadra-Rodriguez, L. A.; Diaz, C. J. V.; Prather, K. A.; Mertes, S.; Eugster, W., Do Cloud Properties in a Puerto Rican Tropical Montane Cloud Forest Depend on Occurrence of Long-Range Transported African Dust? *Pure and Applied Geophysics* **2014**, *171* (9), 2443-2459.
164. Cahill, J. F.; Fei, H.; Cohen, S. M.; Prather, K. A., Characterization of Core-Shell Mof Particles by Depth Profiling Experiments Using On-Line Single Particle Mass Spectrometry. *Analyst* **2015**, *140* (5), 1510-1515.
165. Gaston, C. J.; Furutani, H.; Guazzotti, S. A.; Coffee, K. R.; Jung, J.; Uematsu, M.; Prather, K. A., Direct Night-Time Ejection of Particle-Phase Reduced Biogenic Sulfur Compounds from the Ocean to the Atmosphere. *Environmental Science & Technology* **2015**, *49* (8), 4861- 4867.
166. Fitzgerald, E.; Ault, A. P.; Zauscher, M. D.; Mayol-Bracero, O. L.; Prather, K. A., Comparison of the Mixing State of Long-Range Transported Asian and African Mineral Dust. *Atmospheric Environment* **2015**, *115*, 19-25.
167. Wang, X. F.; Sultana, C. M.; Trueblood, J.; Hill, T. C. J.; Malfatti, F.; Lee, C.; Laskina, O.; Moore, K. A.; Beall, C. M.; McCluskey, C. S.; Cornwell, G. C.; Zhou, Y. Y.; Cox, J. L.; Pendergraft, M. A.; Santander, M. V.; Bertram, T. H.; Cappa, C. D.; Azam, F.; DeMott, P. J.; Grassian, V. H.; Prather, K. A., Microbial Control of Sea Spray Aerosol Composition: A Tale of Two Blooms. *ACS Central Science* **2015**, *1* (3), 124-131.
168. Schill, S. R.; Collins, D. B.; Lee, C.; Morris, H. S.; Novak, G. A.; Prather, K. A.; Quinn, P. K.; Sultana, C. M.; Tivanski, A. V.; Zimmermann, K.; Cappa, C. D.; Bertram, T. H., The Impact of Aerosol Particle Mixing State on the Hygroscopicity of Sea Spray Aerosol. *ACS Central Science* **2015**, *1* (3), 132-141.
169. Creamean, J. M.; Ault, A. P.; White, A. B.; Neiman, P. J.; Ralph, F. M.; Minnis, P.; Prather, K. A., Impact of Interannual Variations in Sources of Insoluble Aerosol Species on Orographic Precipitation over California's Central Sierra Nevada. *Atmospheric Chemistry and Physics* **2015**, *15* (11), 6535-6548.
170. White, A. B.; Neiman, P. J.; Creamean, J. M.; Coleman, T.; Ralph, F. M.; Prather, K. A., The Impacts of California's San Francisco Bay Area Gap on Precipitation Observed in the Sierra Nevada During HMT and CalWater. *Journal of Hydrometeorology* **2015**, *16* (3), 1048-1069.
171. Lee, C.; Sultana, C. M.; Collins, D. B.; Santander, M. V.; Axson, J. L.; Malfatti, F.; Cornwell, G. C.; Grandquist, J. R.; Deane, G. B.; Stokes, M. D.; Azam, F.; Grassian, V. H.; Prather, K. A., Advancing Model Systems for Fundamental Laboratory Studies of Sea Spray Aerosol Using the Microbial Loop.

- Journal of Physical Chemistry A* **2015**, *119* (33), 8860-8870.
172. Cahill, J. F.; Darlington, T. K.; Fitzgerald, C.; Schoepp, N. G.; Beld, J.; Burkart, M. D.; Prather, K. A., Online Analysis of Single Cyanobacteria and Algae Cells under Nitrogen- Limited Conditions Using Aerosol Time-of-Flight Mass Spectrometry. *Analytical Chemistry* **2015**, *87* (16), 8039-8046.
 173. Quinn, P. K.; Collins, D. B.; Grassian, V. H.; Prather, K. A.; Bates, T. S., Chemistry and Related Properties of Freshly Emitted Sea Spray Aerosol. *Chemical Reviews* **2015**, *115* (10), 4383-4399.
 174. Ryder, O. S.; Campbell, N. R.; Morris, H.; Forestieri, S.; Ruppel, M. J.; Cappa, C.; Tivanski, A.; Prather, K.; Bertram, T. H., Role of Organic Coatings in Regulating N₂O₅ Reactive Uptake to Sea Spray Aerosol. *Journal of Physical Chemistry A* **2015**, *119* (48), 11683-11692.
 175. Ralph, F. M.; Prather, K. A.; Cayan, D.; Spackman, J. R.; DeMott, P.; Dettinger, M.; Fairall, C.; Leung, R.; Rosenfeld, D.; Rutledge, S.; Waliser, D.; White, A. B.; Cordeira, J.; Martin, A.; Helly, J.; Intrieri, J., Calwater Field Studies Designed to Quantify the Roles of Atmospheric Rivers and Aerosols in Modulating US West Coast Precipitation in a Changing Climate. *Bulletin of the American Meteorological Society* **2016**, *97* (7), 1209-1228.
 176. Biteen, J. S.; Blainey, P. C.; Cardon, Z. G.; Chun, M. Y.; Church, G. M.; Dorrestein, P. C.; Fraser, S. E.; Gilbert, J. A.; Jansson, J. K.; Knight, R.; Miller, J. F.; Ozcan, A.; Prather, K. A.; Quake, S. R.; Ruby, E. G.; Silver, P. A.; Taha, S.; van den Eng, G.; Weiss, P. S.; Wong, G. C. L.; Wright, A. T.; Young, T. D., Tools for the Microbiome: Nano and Beyond. *ACS Nano* **2016**, *10* (1), 6-37.
 177. Patterson, J. P.; Collins, D. B.; Michaud, J. M.; Axson, J. L.; Sultana, C. M.; Moser, T.; Dommer, A. C.; Conner, J.; Grassian, V. H.; Stokes, M. D.; Deane, G. B.; Evans, J. E.; Burkart, M. D.; Prather, K. A.; Gianneschi, N. C., Sea Spray Aerosol Structure and Composition Using Cryogenic Transmission Electron Microscopy. *ACS Central Science* **2016**, *2* (1), 40-47.
 178. Cochran, R. E.; Laskina, O.; Jayarathne, T.; Laskin, A.; Laskin, J.; Lin, P.; Sultana, C.; Lee, C.; Moore, K. A.; Cappa, C. D.; Bertram, T. H.; Prather, K. A.; Grassian, V. H.; Stone, E. A., Analysis of Organic Anionic Surfactants in Fine and Coarse Fractions of Freshly Emitted Sea Spray Aerosol. *Environmental Science & Technology* **2016**, *50* (5), 2477-2486.
 179. DeMott, P. J.; Hill, T. C. J.; McCluskey, C. S.; Prather, K. A.; Collins, D. B.; Sullivan, R. C.; Ruppel, M. J.; Mason, R. H.; Irish, V. E.; Lee, T.; Hwang, C. Y.; Rhee, T. S.; Snider, J. R.; McMeeking, G. R.; Dhaniyala, S.; Lewis, E. R.; Wentzell, J. J. B.; Abbatt, J.; Lee, C.; Sultana, C. M.; Ault, A. P.; Axson, J. L.; Martinez, M. D.; Venero, I.; Santos-Figueroa, G.; Stokes, M. D.; Deane, G. B.; Mayol-Bracero, O. L.; Grassian, V. H.; Bertram, T. H.; Bertram, A. K.; Moffett, B. F.; Franc, G. D., Sea Spray Aerosol as a Unique Source of Ice Nucleating Particles. *Proceedings of the National Academy of Sciences of the United States of America* **2016**, *113* (21), 5797-5803.
 180. Seinfeld, J. H.; Bretherton, C.; Carslaw, K. S.; Coe, H.; DeMott, P. J.; Dunlea, E. J.; Feingold, G.; Ghan, S.; Guenther, A. B.; Kahn, R.; Kraucunas, I.; Kreidenweis, S. M.; Molina, M. J.; Nenes, A.; Penner, J. E.; Prather, K. A.; Ramanathan, V.; Ramaswamy, V.; Rasch, P. J.; Ravishankara, A. R.; Rosenfeld, D.; Stephens, G.; Wood, R., Improving Our Fundamental Understanding of the Role of Aerosol-Cloud Interactions in the Climate System. *Proceedings of the National Academy of Sciences of the United States of America* **2016**, *113* (21), 5781- 5790.
 181. Trueblood, J. V.; Estillore, A. D.; Lee, C.; Dowling, J. A.; Prather, K. A.; Grassian, V. H., Heterogeneous Chemistry of Lipopolysaccharides with Gas-Phase Nitric Acid: Reactive Sites and Reaction Pathways. *Journal of Physical Chemistry A* **2016**, *120* (32), 6444-6450.
 182. Forestieri, S. D.; Cornwell, G. C.; Helgestad, T. M.; Moore, K. A.; Lee, C.; Novak, G. A.; Sultana, C. M.; Wang, X. F.; Bertram, T. H.; Prather, K. A.; Cappa, C. D., Linking Variations in Sea Spray Aerosol Particle Hygroscopicity to Composition During Two Microcosm Experiments. *Atmospheric Chemistry and Physics* **2016**, *16* (14), 9003-9018.
 183. Creamean, J. M.; White, A. B.; Minnis, P.; Palikonda, R.; Spangenberg, D. A.; Prather, K. A., The Relationships between Insoluble Precipitation Residues, Clouds, and Precipitation over California's Southern Sierra Nevada During Winter Storms. *Atmospheric Environment* **2016**, *140*, 298-310.
 184. Collins, D. B.; Bertram, T. H.; Sultana, C. M.; Lee, C.; Axson, J. L.; Prather, K. A., Phytoplankton Blooms Weakly Influence the Cloud Forming Ability of Sea Spray Aerosol. *Geophysical Research Letters* **2016**, *43* (18), 9975-9983.
 185. Jayarathne, T.; Sultana, C. M.; Lee, C.; Malfatti, F.; Cox, J. L.; Pendergraft, M. A.; Moore,

- K. A.; Azam, F.; Tivanski, A. V.; Cappa, C. D.; Bertram, T. H.; Grassian, V. H.; Prather, K. A.; Stone, E. A., Enrichment of Saccharides and Divalent Cations in Sea Spray Aerosol During Two Phytoplankton Blooms. *Environmental Science & Technology* **2016**, *50* (21), 11511-11520.
186. McCluskey, C. S.; Hill, T. C. J.; Malfatti, F.; Sultana, C. M.; Lee, C.; Santander, M. V.; Beall, C. M.; Moore, K. A.; Cornwell, G. C.; Collins, D. B.; Prather, K. A.; Jayarathne, T.; Stone, E. A.; Azam, F.; Kreidenweis, S. M.; DeMott, P. J., A Dynamic Link between Ice Nucleating Particles Released in Nascent Sea Spray Aerosol and Oceanic Biological Activity During Two Mesocosm Experiments. *Journal of the Atmospheric Sciences* **2017**, *74* (1), 151- 166.
187. Martin, A. C.; Cornwell, G. C.; Atwood, S. A.; Moore, K. A.; Rothfuss, N. E.; Taylor, H.; DeMott, P. J.; Kreidenweis, S. M.; Petters, M. D.; Prather, K. A., Transport of Pollution to a Remote Coastal Site During Gap Flow from California's Interior: Impacts on Aerosol Composition, Clouds, and Radiative Balance. *Atmospheric Chemistry and Physics* **2017**, *17* (2), 1491-1509.
188. Beall, C. M.; Stokes, M. D.; Hill, T. C.; DeMott, P. J.; DeWald, J. T.; Prather, K. A., Automation and Heat Transfer Characterization of Immersion Mode Spectroscopy for Analysis of Ice Nucleating Particles. *Atmospheric Measurements Techniques* **2017**, *10*, 2613- 2626.
189. Cochran, R. E.; Ryder, O. S.; Grassian, V. H.; Prather, K. A., Sea Spray Aerosol: The Chemical Link between the Oceans, Atmosphere, and Climate. *Accounts of Chemical Research* **2017**, *50* (3), 599-604.
190. Gaston, C. J.; Pratt, K. A.; Suski, K. J.; May, N. W.; Gill, T. E.; Prather, K. A., Laboratory Studies of the Cloud Droplet Activation Properties and Corresponding Chemistry of Saline Playa Dust. *Environmental Science & Technology* **2017**, *51* (3), 1348-1356.
191. Pham, D. Q.; O'Brien, R. E.; Fraund, M.; Bonanno, D.; Laskina, O.; Beall, C.; Moore, K. A.; Forestieri, S.; Wang, X.; Lee, C.; Sultana, C. M.; Grassian, V. H.; Cappa, C. D.; Prather, K. A.; Moffet, R. C., Biological Impacts on Carbon Speciation and Morphology of Sea Spray Aerosol. *ACS Earth and Space Chemistry* **2017**, *1* (9), 551-561.
192. Santander, M. V.; Cox, J. L.; Riccobono, N.; Schaap, B.; Xiong, W.; Grassian, V. H.; Prather, K. A., ATR-FT-IR Investigation of the Ocean Surface. *Spectroscopy* **2017**, 18-18.
193. Sultana, C. M.; Al-Mashat, H.; Prather, K. A., Expanding Single Particle Mass Spectrometer Analyses for the Identification of Microbe Signatures in Sea Spray Aerosol. *Analytical Chemistry* **2017**, *89* (19), 10162-10170.
194. Sultana, C. M.; Collins, D. B.; Prather, K. A., Effect of Structural Heterogeneity in Chemical Composition on Online Single-Particle Mass Spectrometry Analysis of Sea Spray Aerosol Particles. *Environmental Science & Technology* **2017**, *51* (7), 3660-3668.
195. Sultana, C. M.; Cornwell, G. C.; Rodriguez, P.; Prather, K. A., FATES: A Flexible Analysis Toolkit for the Exploration of Single-Particle Mass Spectrometer Data. *Atmospheric Measurement Techniques* **2017**, *10* (4), 1323-1334.
196. Wang, X. F.; Deane, G. B.; Moore, K. A.; Ryder, O. S.; Stokes, M. D.; Beall, C. M.; Collins, D. B.; Santander, M. V.; Burrows, S. M.; Sultana, C. M.; Prather, K. A., The Role of Jet and Film Drops in Controlling the Mixing State of Submicron Sea Spray Aerosol Particles. *Proceedings of the National Academy of Sciences of the United States of America* **2017**, *114* (27), 6978-6983.
197. Cochran, R. E.; Laskina, O.; Trueblood, J. V.; Estillore, A. D.; Morris, H. S.; Jayarathne, T.; Sultana, C. M.; Lee, C.; Lin, P.; Laskin, J.; Laskin, A.; Dowling, J. A.; Qin, Z.; Cappa, C. D.; Bertram, T. H.; Tivanski, A. V.; Stone, E. A.; Prather, K. A.; Grassian, V. H., Molecular Diversity of Individual Sea Spray Aerosol Particles: Influence of Ocean Biology on Particle Composition and Hygroscopicity. *Chem* **2017**, *2* (5), 655-667.
198. Gaston, C.; Cahill, J.; Collins, D.; Suski, K.; Ge, J.; Barkley, A.; Prather, K.A., The Cloud Nucleating Properties and Mixing State of Marine Aerosols Sampled along the Southern California Coast. *Atmosphere* **2018**, *9* (2), 52.
199. Michaud, J.; Thompson, L.; Kaul, D.; Espinoza, J.; Richter, R.; Xu, Z.; Lee, C.; Pham, K.; Beall, C.; Malfatti, F.; Azam, F.; Knight, R.; Burkart, M.; Dupont, C.; Prather, K.A., Taxon- Specific Aerosolization of Bacteria and Viruses in an Experimental Ocean-Atmosphere Mesocosm. *Nature Communications* **2018**, 9.
200. McCluskey, C. S.; Hill, T. C. J.; Sultana, C. M.; Laskina, O.; Trueblood, J.; Santander, V.; Beall, C. M.; Michaud, J. M.; Kreidenweis, S. M.; Prather, K. A.; Grassian, V. H.; DeMott,

- P. J., A Mesocosm Double Feature: Insights into the Chemical Make-Up of Marine Ice Nucleating Particles. *Journal of the Atmospheric Sciences* **2018**, 75 (7), 2405-2423.
201. Schiffer, J. M.; Luo, M.; Dommer, A. C.; Thoron, G.; Pendergraft, M.; Santander, M. V.; Lucero, D.; Pecora de Barros, E.; Prather, K. A.; Grassian, V. H.; Amaro, R. E., Impacts of Lipase Enzyme on the Surface Properties of Marine Aerosols. *The Journal of Physical Chemistry Letters* **2018**, 9 (14), 3839-3849.
 202. DeMott, P. J.; Mason, R. H.; McCluskey, C. S.; Hill, T. C. J.; Perkins, R. J.; Desyaterik, Y.; Bertram, A. K.; Trueblood, J. V.; Grassian, V. H.; Qiu, Y.; Molinero, V.; Tobo, Y.; Sultana, C. M.; Lee, C.; Prather, K. A., Ice Nucleation by Particles Containing Long-Chain Fatty Acids of Relevance to Freezing by Sea Spray Aerosols. *Environmental Science: Processes & Impacts* **2018**, 20 (11), 1559-1569.
 203. Schiffer, J. M.; Mael, L. E.; Prather, K. A.; Amaro, R. E.; Grassian, V. H., Sea Spray Aerosol: Where Marine Biology Meets Atmospheric Chemistry. *ACS Central Science* **2018**, 4 (12), 1617-1623.
 204. Malfatti, F.; Lee, C.; Tinta, T.; Pendergraft, M. A.; Celussi, M.; Zhou, Y.; Sultana, C. M.; Rotter, A.; Axson, J. L.; Collins, D. B.; Santander, M. V.; Anides Morales, A. L.; Aluwihare, L. I.; Riemer, N.; Grassian, V. H.; Azam, F.; Prather, K. A., Detection of Active Microbial Enzymes in Nascent Sea Spray Aerosol: Implications for Atmospheric Chemistry and Climate. *Environmental Science & Technology Letters* **2019**, 6 (3), 171-177.
 205. Trueblood, J. V.; Alves, M. R.; Power, D.; Santander, M. V.; Cochran, R. E.; Prather, K. A.; Grassian, V. H., Shedding Light on Photosensitized Reactions within Marine-Relevant Organic Thin Films. *ACS Earth Space Chemistry* **2019**, 3 (8), 1614-1623.
 206. Nandy, L.; Liu, S.; Gunsbury, C.; Wang, X.; Pendergraft, M. A.; Prather, K. A.; Dutcher, C. S., Multistep Phase Transitions in Sea Surface Microlayer Droplets and Aerosol Mimics using Microfluidic Wells. *ACS Earth and Space Chemistry* **2019**, 3 (7), 1260-1267.
 207. Martin, A. C.; Cornwell, G.; Beall, C. M.; Cannon, F.; Reilly, S.; Schaap, B.; Lucero, D.; Creamean, J.; Ralph, F. M.; Mix, H. T.; Prather, K. A., Contrasting Local and Long-Range-Transported Warm Ice-Nucleating Particles during an Atmospheric River in Coastal California, USA. *Atmospheric Chemistry and Physics* **2019**, 19 (7), 4193-4210.
 208. Trueblood, J. V.; Wang, X.; Or, V. W.; Alves, M. R.; Santander, M. V.; Prather, K. A.; Grassian, V. H., The Old and the New: Aging of Sea Spray Aerosol and Formation of Secondary Marine Aerosol through OH Oxidation Reactions. *ACS Earth Space Chemistry* **2019**, 3, 2307-2314.
 209. Levin, E. J.T.; DeMott, P. J.; Suski, K. J.; Boose, Y.; Hill, T. C.J.; McCluskey, C. S.; Schill, G. P.; Rocci, K.; Al-Mashat, H.; Kristensen, L. J.; Cornwell, G.; Prather, K. A.; Tomlinson, J.; Mei, F.; Hubbe, J.; Pekour, M.; Sullivan, R.; Leung, L. R.; Kreidenweis, S. M., Characteristics of Ice Nucleating Particles in and Around California Winter Storms. *Journal of Geophysical Research: Atmospheres* **2019**, 124 (21), 11530-11551.
 210. Cornwell, G. C.; McCluskey, C. S.; Levin, E. J.T.; Suski, K. J.; DeMott, P. J.; Kreidenweis, S. M.; Prather, K. A., Direct Online Mass Spectrometry Measurements of Ice Nucleating Particles at a California Coastal Site. *Journal of Geophysical Research: Atmospheres* **2019**, 124 (22), 12157-12172.
 211. Lee, H. D.; Morris, H. S.; Laskina, O.; Sultana, C. M.; Lee, C.; Jayarathne, T.; Cox, J. L.; Wang, X.; Hasencz, E. S.; DeMott, P. J.; Bertram, T. H.; Cappa, C. D.; Stone, E. A.; Prather, K. A.; Grassian, V. H.; Tivanski, A. V., Organic Enrichment, Physical Phase State, and Surface Tension Depression of Nascent Core-Shell Sea Spray Aerosol during Two Phytoplankton Blooms. *ACS Earth and Space Chemistry* **2020**, 4 (4), 650-660.
 212. Voss, K. K.; Evan, A. T.; Prather, K. A.; Ralph, F. M., Dusty Atmospheric Rivers: Characteristics and Origins. *Journal of Climate* **2020**, 33 (22), 9749-9762.
 213. Alves, M. R.; Sauer, J. S.; Prather, K. A.; Wilkins, C. L., Liquid Sampling-Atmospheric Pressure Glow Discharge Ionization as a Technique for the Characterization of Salt-Containing Organic Samples. *ACS Analytical Chemistry* **2020**, 92 (13), 8845-8851.
 214. Prather, K. A.; Wang, C. C.; Schooley, R. T., Reducing Transmission of SARS-CoV-2. *Science* **2020**, 368 (6498), 1422-1424.
 215. Lee, H.; Wigley, S.; Lee, C.; Or, V.; Hasencz, E.; Stone, E.; Grassina, V.; Prather, K. A.; Tivanski,

- A., Physicochemical Mixing State of Sea Spray Aerosols: Morphologies Exhibit Size Dependence. *ACS Earth and Space Chemistry* **2020**, 4 (9), 1604-1611.
216. Crocker, D.; Hernandez, R.; Huang, H.; Pendergraft, M. A.; Cao, R.; Dai, J.; Morris, C. K.; Deane, G. B.; Prather, K. A.; Thiemens, M. H., Biological Influence on $\delta^{13}\text{C}$ and Organic Composition of Nascent Sea Spray Aerosol. *ACS Earth and Space Chemistry* **2020**, 4, 1686-1699.
217. Hasenecz, E.; Jayarathne, T.; Pendergraft, M.; Santander, M.; Mayer, K.; Sauer, J.; Lee, C.; Gibson, W.; Kruse, S.; Malfatti, F.; Prather, K.; Stone, E., Marine Bacteria Affect Saccharide Enrichment in Sea Spray Aerosol during a Phytoplankton Bloom. *ACS Earth and Space Chemistry* **2020**, 4, 1638-1649.
218. Beall, C. M.; Lucero, D.; Hill, T. C.; DeMott, P. J.; Stokes, M. D.; Prather, K. A., Best Practices for Precipitation Sample Storage for Offline Studies of Ice Nucleation. *Atmospheric Measurement Techniques* **2020**, 13, 6473-6486.
219. Prather, K. A.; Marr, L. C.; Schooley, R. T.; McDiarmid, M. A.; Wilson, M. E.; Milton, D. K., Airborne Transmission of SARS-Cov-2. *Science* **2020**, 370 (6514), 303-304.
220. Mayer, K.; Sauer, J.; Dinasquet, J.; Prather, K. A., CAICE Studies Insights From a Decade of Ocean-Atmosphere Experiments in the Laboratory. *Accounts of Chemical Research* **2020**, 53 (11), 2510-2520.
221. Cornwell, G. C.; Sultana, C. M.; Prank, M.; Cochran, R. E.; Hill, T. C. J.; Schill, G. P.; DeMott, P. J.; Mahowald, N.; Prather, K. A., Ejection of Dust From the Ocean as a Potential Source of Marine Ice Nucleating Particles. *Journal of Geophysical Research: Atmospheres* **2020**, 125 (24).
222. Mayer, K. J.; Wang, X.; Santander, M. V.; Mitts, B. A.; Sauer, J. S.; Sultana, C. M.; Cappa, C. D.; Prather, K. A., Secondary Marine Aerosol Plays a Dominant Role over Primary Sea Spray Aerosol in Cloud Formation. *ACS Central Science* **2020**, 6, 2259-2266.
223. Beall, C. M.; Michaud, J. M.; Fish, M. A.; Dinasquet, J.; Cornwell, G. C.; Stokes, M. D.; Burkart, M. D.; Hill, T. C.; DeMott, P. J.; Prather, K. A., Cultivable, Halotolerant Ice Nucleating Bacteria and Fungi in Coastal Precipitation. *Atmospheric Chemistry and Physics Discussions* **2021**, <https://doi.org/10.5194/acp-2020-1229>, in review
224. Petras, D.; Minich, J. J.; Cancelada, L. B.; Torres, R. R.; Kunselman, E.; Wang, M.; White M. E.; Allen, E. E.; Prather, K. A.; Aluwihare, L. I.; Dorrestein, P. C., Non-Targeted Tandem Mass Spectrometry Enables the Visualization of Organic Matter Chemotype Shifts in Coastal Seawater. *Chemosphere* **2021**, 271, 129450.
225. Angle, K. J.; Crocker, D. R.; Simpson, R. MC.; Mayer, K. J.; Garofalo, L. A.; Moore, A. N.; Mora Garcia, S. L.; Or, V. W.; Srinivasan, S.; Farhan, M.; Sauer, J. S.; Lee, C.; Pothier, M. A.; Farmer, D. K.; Martz, T. R.; Bertram, T. H.; Cappa, C. D.; Prather, K. A.; Grassian, V. H., Acidity Across the Interface from the Ocean Surface to Sea Spray Aerosol. *Proceedings of the National Academy of Sciences* **2021**, 118 (2).
226. Samet, J. M.; Prather, K. A.; Benjamin, G.; Lakdawala, S.; Lowe, J-M.; Reingold, A.; Volckens, J.; Marr, L., Airborne Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2): What We Know. *Clinical Infectious Diseases*, **2021**, <https://doi.org/10.1093/cid/ciab039>
227. Mitts, B. A.; Wang, X.; Lucero, D. D.; Beall, C. M.; Deane, G. B.; DeMott, P. J.; Prather, K. A., Importance of Supermicron Ice Nucleating Particles in Nascent Sea Spray. *Geophysical Research Letters* **2021**, 48 (3).
228. Santander, M. V.; Mitts, B. A.; Pendergraft, M. A.; Dinasquet, J.; Lee, C.; Moore, A. N.; Cancelada, L. B.; Kimble, K. A.; Malfatti, F.; Prather, K. A., Tandem Fluorescence Measurements of Organic Matter and Bacteria Released in Sea Spray Aerosols. *Environmental Science & Technology* **2021**, <https://doi.org/10.1021/acs.est.0c05493>
229. Greenhalgh, T.; Jimenez, J. L.; Prather, K. A.; Tufekci, Z.; Fisman, D.; Schooley, R., Ten Scientific Reasons in Support of Airborne Transmission of SARS-CoV-2. *The Lancet* **2021**, [https://doi.org/10.1016/S0140-6736\(21\)00869-2](https://doi.org/10.1016/S0140-6736(21)00869-2)