
Curriculum Vitae

Kimberly A. Prather
Distinguished Professor
Distinguished Chair in Atmospheric Chemistry

EDUCATION

University of California, Davis	Chemistry	B.S., 1985
University of California, Davis	Chemistry	Ph.D., 1990
University of California, Berkeley	Chemistry	Postdoctoral Fellow, 1990 – 1992

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
1994 – 2001	Research Associate, Statewide Air Pollution Research Center
1992 – 1996	Assistant Professor, Univ. of California, Riverside

LIST OF HONORS AND AWARDS

- 2020 Elected, National Academy of Sciences
- 2020 ACS Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry
- 2019 Elected, National Academy of Engineering: “*For technologies that transformed understanding of aerosols and their impacts on air quality, climate, and human health.*”
- 2019 Top 100 Power List, Analytical Scientist
- 2018 Chancellor’s Associates Excellence Award in Research in Science and Engineering
- 2017 Top 10 Public Defenders (Scientists Protecting People and the Planet), Analytical Scientist
- 2016 Philip B. Hopke Inaugural Lecture, Clarkson University
- 2016 Top 50 Women in the Analytical Sciences, The Analytical Scientist Power List of World Leaders
- 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
- 2012 Environmental Fellow of John Muir College
- 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
2009 UC San Diego Faculty Sustainability Award
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

Examples of National Service Activities: Served as co-author on 2016 National Academy of Science Report "The Future of Atmospheric Chemistry Research". Serves as external advisor to the Asst. Director of Geosciences at the National Science Foundation. Served two terms (2009-2015) on the National Academy of Sciences Board for Atmospheric Science and Climate (BASC). Co-chaired Committee of Visitors to AGS at NSF (2016). Chaired and organized Gordon Research Conference on "Atmospheric Chemistry" (2017). Co-Organizer of NAS Sackler Symposium on "Improving our fundamental understanding of the role of aerosol–cloud interactions in the climate system" (2016). Co-chief scientist of CalWater study on focusing on aerosol impacts on the hydrological cycle and atmospheric rivers (2009-2018).

Local Leadership: Founding Director of NSF funded Center for Aerosol Impacts on Chemistry of the Environment (CAICE) performing fundamental chemical studies that will ultimately improve climate model treatment of aerosol chemistry and assist in developing more effective policies (<http://caice.ucsd.edu>)

Assisted with the UC San Diego strategic plan related to the Understanding and Protecting the Planet theme. UC San Diego Academic Senate Committee on Committees (2 years as Chair) (2016-2018).

Innovation: Five patents for developments in on-line mass spectrometry: *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* (w/ J. Albert Schultz) (US Patent: 7,170,052), (w/ J.E. Mayer, Marc Gonin, and Katrin Fuhrer), *Compact Aerosol Time-of-Flight Mass Spectrometer*, US Patent: 8,648,294, w/ J. E. Mayer), *Biological Cell Sorting and Characterization Using Aerosol Mass Spectrometry*, US Patent: 8,626,449.

Public outreach: 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 (PBS, CNN), local schools. She and members of her research group take science communication very seriously. She has given public lectures and participated in videos and news interviews, including Story Collider (March 2016), an ACS Webinar on Earth Day (April 2015: <https://youtu.be/rVHiWByxqC4>), and an ACS YouTube Video on CAICE research (<https://youtu.be/qBX4Vl6-SMM>). She also works with local schools in economically challenged

regions to reinvigorate science education through the use of environmental (particle) measurements. Highlights of her group's research have appeared in the popular press including the LA Times, CBS Evening News, Discover, Scientific American, Al Jazeera, and National Geographic.

Prather has been in a number of documentaries including a 2016 documentary entitled "Death by Design" that won awards in several Film Festivals (<http://deathbydesignfilm.com/>). She also participated in a very popular Reddit session with CAICE students on the Ask Me Anything (AMA) program (July 2015).

Contributions to Education: Prather has graduated 35 PhD students and mentored hundreds of undergraduates. Teaches courses on Instrument Development, Environmental Chemistry, Chemistry and Climate, and Atmospheric Aerosols. She works extensively with graduate students and postdocs on effective methods for effective science communication, as well as how to design and build scientific instrumentation to address complex environmental problems. Through CAICE, she is working to cross-train students to have science and engineering backgrounds so they can build the instruments needed to solve complex problems. She is currently helping develop new curricula for K-12 science education focused on climate and atmospheric chemistry.

Select Graduate Students (GS) and Postdocs (PD) who started their careers with Prof.

Prather: Kerri Pratt (Asst. 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), Kaitlyn Suski (Research Scientist; PNNL; GS), Jessie Creamean (Research Scientist; NOAA; GS), Stephen Toner (Research Scientist; Teledyne; GS).

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

PUBLICATIONS

1. Weiner, B. R.; Pasternack, L.; Nelson, H. H.; Prather, K. A.; Rosenfeld, R. N., Photodissociation Dynamics of BH₃CO 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. 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.
4. Nordmeyer, T.; Prather, K. A., Real-Time Measurement Capabilities Using Aerosol Time-of-Flight Mass-Spectrometry. *Analytical Chemistry* **1994**, *66* (20), 3540-3542.
5. Prather, K. A.; Lee, Y. T., The Photodissociation of Pyridine at 193-nm. *Israel Journal of Chemistry* **1994**, *34* (1), 43-53.

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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. 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.
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 12. 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.
 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. 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.
 15. 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.
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 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.
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 20. 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.
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 28. 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.
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