

ALLISON MCCOMISKEY

NOAA Earth System Research Laboratory
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APPOINTMENTS

Physical Scientist, Global Monitoring Division, Global Radiation Group Chief, NOAA Earth System Research Laboratory, Boulder, 12/29/2014-present
Research Scientist II, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder and NOAA Earth Systems Research Laboratory, Chemical Sciences Division, 03/15/2008-12/26/2014
Research Scientist I, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder and NOAA Earth Systems Research Laboratory, Global Monitoring Division, 08/01/2003-03/14/2008
Assistant Professor, Texas State University, 08/2002-07/2003
Research and Teaching Assistant, University of California, Santa Barbara, 08/1997-07/2002
Instructor, Oxnard Community College, California, 2001-2002
Teaching Assistant, Northern Arizona University, Flagstaff, Arizona, 08/1995-05/1997
Assistant Physical Scientist, United States Geological Survey, Flagstaff, Arizona, 1996-1997
Consultant, SWCA Environmental Consulting Firm, Inc., Flagstaff, Arizona, 1993-1995

EDUCATION

Ph.D. University of California, Santa Barbara, Geography, 2003
M.A. Northern Arizona University, Geography, 1998
B.S. Southern Methodist University, Anthropology, 1992

EXPERTISE AND INTERESTS

- Atmospheric radiative transfer; ground- and space-based remote sensing
- Cloud and aerosol radiative forcing of the climate system; spatio-temporal distribution of forcing
- Use of process- to global-scale observations for climate model evaluation
- Managing integrative atmospheric observing systems to directly address science questions

PROFESSIONAL ACTIVITIES AND RECOGNITION

Co-Chair, Atmosphere Collaboration Team, Interagency Arctic Research Policy Committee, 2014-present
Co-Chair, Aerosol Measurement Science Group, DOE Atmospheric Radiation Measurement Climate Research Facility, 2014-present
International Arctic Systems for Observing the Atmosphere, Steering Committee, Radiation and Aerosol Working Groups, 2015-present
The Aerosol, Cloud, and Trace Gases Research Infrastructure External Board, 2015-present
Co-Chair, Aerosol Observing System Committee, DOE Atmospheric Radiation Measurement Climate Research Facility, 2013-2014
Co-Chair, Aerosol Life Cycle Working Group, DOE Atmospheric System Research Program, 2009-2014
Science and Infrastructure Steering Committee, DOE Atmospheric System Research / Atmospheric Radiation Measurement Climate Research Facility, 2009-present
Atmospheric Radiation Committee, American Meteorology Society, 2013-present

NOAA Chemical Sciences Division CIRES Project Lead: Aerosol Formation, Composition, Properties, and Interactions with Clouds, 2013-present
DOE ARM Climate Research Facility Science Board, 2009-2014
Associate Editor, Journal of Applied Meteorology and Climatology, American Meteorological Society, 2013-present
CIRES Members' Council, 2009-2013, Chair 2011-2013
Outstanding Science and Engineering Award, CIRES, 2008
DOE Atmospheric System Research Program Paper Highlight 2012, for 'The scale problem in quantifying aerosol indirect effects'
DOE ASR/ARM Workshop on North Slope of Alaska Science and Measurement Priorities, Rapporteur, upcoming September 2014
DOE ASR/ARM High Resolution Modeling Workshop, May 2014
DOE ARM/European Joint Workshop on Climate Change Challenges and Observations, Climate Change Challenges Panel Moderator, November 2012
American Geophysical Union
American Meteorological Society
American Association for the Advancement of Science

GRANTS AWARDED AND PENDING

Quantification of Aerosol Indirect Effects through Large Eddy Simulation and Surface Observations at SGP, Department of Energy Atmospheric System Research Program, PI G. Feingold
Synthesis of aerosol observations for improved understanding of radiative forcing, Department of Energy Atmospheric System Research Program, PI A. McComiskey
Aerosol and Cloud Experiments in Eastern North Atlantic (ACE-ENA), DOE Atmospheric Radiation Measurement Climate Research Facility, PI J. Wang
Advancing understanding of the Arctic atmosphere through process-level analysis and product development using Oliktok Point measurements, DOE Atmospheric System Research Program, PI G. de Boer
The MOSAiC Atmosphere: Atmospheric Science and Surface Coupling at the Multidisciplinary drifting Observatory for the Study of Arctic Climate, DOE Atmospheric Radiation Measurement Climate Research Facility, PI M. Shupe
LASIC: Layered Atlantic Smoke Interactions with Clouds, DOE Atmospheric Radiation Measurement Climate Research Facility, PI P. Zuidema
HSRL for Aerosols, Winds, and Clouds Using Optical Autocovariance Wind Lidar (HAWC-OAWL), NASA Instrument Incubator Program, PI S Tucker
Cloud macrophysical parameterization and its application to aerosol indirect effects, Collaborative Research, NOAA/NSF/Climate Processes Team, PI V. Larson
The radiative properties of small clouds: Multi-scale observation and modeling, Department of Energy Atmospheric System Research Program, PI A. McComiskey and G. Feingold
High spectral resolution aerosol optical properties, CIRES Innovative Research Program, PI A. McComiskey

PUBLICATIONS

McComiskey, A., G. Feingold, C. Long. Aerosol Indirect Effects versus Aerosol-Cloud Interactions: a Top-Down Approach for Reconciling Estimates, *in preparation*.
McComiskey, A., G. de Boer, J. Creamean. Variability in Surface and Column Aerosol in the Arctic, *in preparation*.

- Kassianov, E., M. Pekour, C. Flynn, L. K. Berg, J. Beranek, A. Zelenyuk, C. Zhao, R. Leung, P.-L. Ma, L. Riihimaki, J. Fast, J. Barnard, G. Hallar, I. B. McCubbin, E. W. Eloranta, **A. McComiskey**, P. Rasch. 2016. Large Contribution of Coarse Mode to Aerosol Microphysical and Optical Properties: Evidence from Ground-based Observations of a Trans-Pacific Dust Outbreak at a High-Elevation North American Site, *J. Atmos. Sci.*, *submitted*.
- Sena, E., **A. McComiskey**, G. Feingold. A long-term study of aerosol-cloud interactions and their radiative effect at the Southern Great Plains using ground-based measurements, *ACPD*, doi:10.5194/acp-16-11301-2016.
- Feingold, G., **A. McComiskey**, T. Yamaguchi, J. S. Johnson, K.S. Carslaw, and K. S. Schmidt. New Approaches to Quantifying Aerosol Influence on the Cloud Radiative Effect, *PNAS*, doi/10.1073/pnas.1514035112.
- McComiskey, A.** and R. A. Ferrare, 2016: Aerosol Physical and Optical Properties and Processes. *The Atmospheric Radiation Measurement (ARM) Program: The First 20 Years*, Meteor. Monogr., No. 57, Amer. Meteor. Soc., eds., doi:10.1175/AMSMONOGRAPHS-D-15-0028.1.
- Feingold, G. and **A. McComiskey**, 2016: Aerosol-Cloud-Precipitation Research. *The Atmospheric Radiation Measurement (ARM) Program: The First 20 Years*, Meteor. Monogr., No. 57, Amer. Meteor. Soc., eds., doi: 10.1175/AMSMONOGRAPHS-D-15-0022.1.
- Yamaguchi, T., G. Feingold, J. Kazil, and **A. McComiskey**. Stratocumulus to cumulus transition in the presence of elevated smoke layers, 2015, *Geophys. Res. Lett.*, doi/10.1002/2015GL066544.
- Gao, R.-S., J. W. Elkins, G. J. Frost, **A. C. McComiskey**, F. L. Moore, D. M. Murphy, J. A. Ogren, I. Petropavlovskikh, and K. H. Rosenlof. 2015. *A Novel Approach to Atmospheric Measurements Using Gliding UASs*, in Dynamic Data-Driven Environmental Systems Science. Springer International Publishing, Switzerland. doi:10.1007/978-3-319-25138-7.
- Attwood, A. R., et al. (2014), Trends in sulfate and organic aerosol mass in the Southeast U.S.: Impact on aerosol optical depth and radiative forcing, *Geophys. Res. Lett.*, 41, 7701–7709, doi:10.1002/2014GL061669.
- Lee, S.-S., G. Feingold, A. McComiskey, T. Yamaguchi, I. Koren, J. V. Martins, and H. Yu. 2014. Effects of gradients in biomass burning aerosol on shallow cumulus convective circulations. *J. Geophys. Res.*, doi:10.1002/2014JD021819.
- Feingold, G., A. McComiskey, D. Rosenfeld, and A. Sorooshian. 2013. On the relationship between cloud contact time and precipitation susceptibility to aerosol, *J. Geophys. Res. Atmos.*, 118, 10,544–10,554, doi:10.1002/jgrd.50819.
- McComiskey, A.**, and G. Feingold. 2012. The scale problem in quantifying aerosol indirect effects. *Atmos. Chem. Phys.*, 11,26741-26789, doi:10.5194/acpd-11-26741-2011.
- Brock, CA; Cozic, J; Bahreini, R; Froyd, KD; Middlebrook, **AM**; **McComiskey**, A; Brioude, J; Cooper, OR; Stohl, A; Aikin, KC; de Gouw, JA; Fahey, DW; Ferrare, RA; Gao, RS; Gore, W; Holloway, JS; Hubler, G; Jefferson, A; Lack, DA; Lance, S; Moore, RH; Murphy, DM; Nenes, A; Novelli, PC; Nowak, JB; Ogren, JA; Peischl, J; Pierce, RB; Pilewskie, P; Quinn, PK; Ryerson, TB; Schmidt, KS; Schwarz, JP; Sodemann, H; Spackman, JR; Stark, H; Thomson, DS; Thornberry, T; Veres, P; Watts, LA; Warneke, C; Wollny, AG .2011. Characteristics, sources, and transport of aerosols measured in spring 2008 during the aerosol, radiation, and cloud processes affecting Arctic Climate (ARCPAC) Project. *Atmos. Chem. Phys.*, 11 (6) 2423-2453, doi: 10.5194/acp-11-2423-2011.
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- McComiskey, A**; Feingold, G; Frisch, AS; Turner, DD; Miller, MA; Chiu, JC; Min, QL; Ogren, JA. 2009. An assessment of aerosol-cloud interactions in marine stratus clouds based on surface remote sensing. *J. Geophys. Res.-Atmos.*, 114 , Art. No. D09203, doi: 10.1029/2008JD011006.
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- Koch, D; Grainger, RG; Kirkevåg, A; Iversen, T; Seland, O; Easter, R; Ghan, SJ; Rasch, PJ; Morrison, H; Lamarque, JF; Iacono, MJ; Kinne, S; Schulz, M. 2009. Aerosol indirect effects - general circulation model intercomparison and evaluation with satellite data. *Atmos. Chem. Phys.*, 9 (22) 8697-8717.
- Sorooshian, A; Padro, LT; Nenes, A; Feingold, G; **McComiskey, A**; Hersey, SP; Gates, H; Jonsson, HH; Miller, SD; Stephens, GL; Flagan, RC; Seinfeld, JH. 2009. On the link between ocean biota emissions, aerosol, and maritime clouds: Airborne, ground, and satellite measurements off the coast of California. *Glob. Biogeochem. Cycle*, 23 , Art. No. GB4007, doi: 10.1029/2009GB003464.
- McComiskey, A**; Feingold, G. 2008. Quantifying error in the radiative forcing of the first aerosol indirect effect. *Geophys. Res. Lett.*, 35 (2) , Art. No. L02810, doi: 10.1029/2007GL032667.
- McComiskey, A**; Schwartz, SE; Schmid, B; Guan, H; Lewis, ER; Ricchiuzzi, P; Ogren, JA. 2008. Direct aerosol forcing: Calculation from observables and sensitivities to inputs. *J. Geophys. Res.-Atmos.*, 113 (D9), Art. No. D09202, doi: 10.1029/2007JD009170.
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- McComiskey, A**; Ricchiuzzi, P; Gautier, C; Lubin, D. 2006. Assessment of a three dimensional model for atmospheric radiative transfer over heterogeneous land cover. *Geophys. Res. Lett.*, 33 (10) , Art. No. L10813, doi: 10.1029/2005GL025356.
- Lubin, D., P. Ricchiuzzi, **A. Payton***, and C. Gautier. 2002. The Significance of Multidimensional Radiative Transfer Effects Measured in Surface Fluxes at an Antarctic Coastline. *Journal of Geophysical Research-Atmospheres*: V107, No. D19, 4387-4395.
- Ricchiuzzi, P., **A. Payton***, and C. Gautier. 2002. A Test of Three-Dimensional Radiative Transfer Simulation Using the Radiance Signatures and Contrasts at a High Latitude Coastal Site. *Journal of Geophysical Research - Atmospheres*: V107, No. D22, 4650-4664.
- *A. McComiskey formerly A. Payton