Jeffrey R. Pierce

Department of Atmospheric Science, ATS 220
Colorado State University
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Research Interests

Air pollution; climate change; atmospheric particulate matter; aerosol-cloud interactions; global and regional atmospheric modeling; atmospheric chemistry and physics

Education

Carnegie Mellon University, Ph.D., Chemical Engineering, 5/2008
Dissertation: Ultrafine atmospheric aerosols, clouds and climate
Northeastern University, B.S., Chemical Engineering, Summa Cum Laude, 6/2003

Professional experience

Colorado State University (1/2013-): Assistant Professor of Atmospheric Science
Dalhousie University (1/2013-): Adjunct Professor of Physics and Atmospheric Science
Dalhousie University (7/2009-12/2012): Assistant Professor of Physics and Atmospheric Science
NASA Postdoctoral Program Fellow (7/2008-6/2009): Postdoctoral fellowship at NASA's Goddard Space Flight Center
Northeastern University, Boston, MA, Research Assistant, Interface Engineering Laboratory (2001-2002)
C.S. Draper Laboratory, Cambridge, MA, Test Engineer, Micro-Electro-Mechanical Systems (MEMS) Chem/Bio sensor project (2000-2001)
Aspen Technology, Cambridge, MA, Test Engineer, Chemical engineering software testing (1999)

Teaching Experience

Assistant Professor, Colorado State University:
Computational Methods in Atmospheric Science (graduate),
Assistant Professor, Dalhousie University:
Computational Methods in Physics (3^{rd}-4^{th} year undergraduate),
Introduction to Atmospheric Science (3^{rd}-4^{th} year undergraduate, 1^{st} year graduate),
Physics and Chemistry of Aerosols and Clouds (graduate),
Atmospheric Physics (3^{rd}-4^{th} year undergraduate, 1^{st} year graduate)
Guest Lecturer, Carnegie Mellon: Air Quality Engineering, Fluid Dynamics
Teaching Assistant, Carnegie Mellon: Biotechnology and Environmental Processes, Senior Design and Optimization, Thermodynamics
Mentoring, Carnegie Mellon: Advisor for Chemical Engineering Car Team;
Dalhousie: Faculty mentor to undergraduates

Honors and Awards

Langstroth Memorial Teaching Excellence Award (5/2012): Awarded by undergraduates in Dalhousie's Department of Physics and Atmospheric Science

NASA Postdoctoral Program Fellowship (7/2008): Postdoctoral fellowship at NASA's Goddard Space Flight Center

Ken Meyer Award (5/2008): Awarded to graduating Ph.D. student in Chemical Engineering at CMU with greatest impact of research

Symposium Award (10/2007): Award for outstanding research talk at Carnegie Mellon University Chemical Engineering Graduate Symposium

EPA STAR Fellowship (2006-2008): Environmental Protection Agency's Science to Achieve Results (STAR) Graduate Fellowship

Robert Rothfus Fellowship (2005-2006): Carnegie Mellon University Chemical Engineering department fellowship for outstanding coursework

National Science Foundation (2004): Honorable mention, Graduate fellowship

William Cunningham Award (11/2003): American Institute of Chemical Engineers' award for best senior design project

Ralph Buonopane Scholarship (2002-2003): Northeastern University Chemical Engineering department award for excellence in coursework and hands-on projects

Department Outstanding Service Award (2001): Northeastern University Chemical Engineering department award for extracurricular service in the department

Chemical Engineering Car Competition (2001): Captain of Northeastern University's national competition runner-up Chem-E-Car

Undergraduate Honors Societies: Tau Beta Pi (Engineering), Omega Chi Epsilon (Chemical Engineering), Phi Kappa Phi (General)

Peer Reviewed Journal Articles (advisees in ***bold italics***)

1. Palmer, P.I., M. Parrington, J.D. Lee, A.C. Lewis, A.R. Rickard, P.F. Bernath, T.J. Duck, D.L. Waugh, D.W. Tarasick, S. Andrews, E. Aruffo, L.J. Bailey, E. Barrett, S.J.B. Bauguitte, K.R. Curry, P. Di Carlo, L. Chisholm, L. Dan, J.R. Drummond, G. Forster, J.E. Franklin, M. Gibson, D. Griffin, D. Helmig, J.R. Hopkins, J.T. Hopper, M.E. Jenkin, D. Kindred, J. Kliever, M. Le Breton, S. Matthiesen, M. Maurice, S. Moller, D.P. Moore, D.E. Oram, S.J. O'Shea, R.C. Owen, C.M.L.S. Pagniello, S. Pawson, C.J. Percival, **J.R. Pierce**, S. Punjabi, R.M. Purvis, J.J. Remedios, K.M. Rotermund, ***K.M. Sakamoto***, K.B. Strawbridge, K. Strong, J. Taylor, R. Trigwell, K.A. Tereszchuk, K.A. Walker, D. Weaver, C. Whaley, and J.C. Young, Quantifying the impact of BOReal forest fires on Tropospheric oxidants over the Atlantic using Aircraft and Satellites (BORTAS) experiment: design, execution and science overview, submitted to *Atmospheric Chemistry and Physics Discussions*, 2013.
2. Lee, Y.H., **Pierce, J.R.**, Adams, P.J.: Representation of nucleation mode microphysics in global aerosol microphysics models, submitted to *Geoscientific Model Development Discussions*, 2013.
3. Gong, L., Lewicki, R., Griffin, R.J., Tittel, F.K., ***Lonsdale, C.R., Stevens, R.G.*****, Pierce, J.R.**, Malloy, Q.G.J., Travis, S.A., Bobmanuel, L.M., Lefer, B.L., Flynn, J.H.: Atmospheric ammonia measurements and implications for particulate matter formation in Houston, TX, submitted to *Atmospheric Environment*, 2013.

4. **Pierce, J.R**., Evans, M.J., Scott, C.E., ***D'Andrea, S.D.***, Farmer, D.K., Swietlicki, E., Spracklen, D.V.: Weak sensitivity of cloud condensation nuclei and the aerosol indirect effect to Criegee+SO2 chemistry, *Atmospheric Chemistry and Physics Discussions*, 12, 33127-33163, doi:10.5194/acpd-12-33127-2012, 2012.
5. ***Lonsdale, C.R., Stevens, R.G.***, Brock, C.A., Makar, P.A., Knipping, E.M., **Pierce, J.R**.: The effect of coal-fired power-plant SO2 and NOX control technologies on aerosol nucleation and growth in the source plumes, *Atmospheric Chemistry and Physics*, 12, 11519-11531, doi:10.5194/acp-12-11519-2012, 2012.
6. ***Wainwright, C.D.*, Pierce, J.R**., Liggio, J., Strawbridge, K.B., Macdonald, A.M., Leaitch, W.R.: The effect of model spatial resolution on Secondary Organic Aerosol predictions: A case study at Whistler, BC, Canada, *Atmospheric Chemistry and Physics*, 12, 10911-10923, doi:10.5194/acp-12-10911-2012, 2012.
7. Riipinen, I., Yli-Juuti, T., **Pierce, J.R.**, Petaja, T., Worsnop, D.R., Kulmala, M., Donahue, N.: Role of organics in atmospheric nanoparticle growth – recent breakthroughs and major unknowns, *Nature Geoscience*, 5, 453-458, 2012.
8. Shantz, N.C., **Pierce, J.R.**, Chang, R.Y.-W., Vlasenko, A., Riipinen, I., Sjostedt, S., Slowik, J.G., Wiebe, A., Abbatt, J.P.D., Leaitch. W.R.: Cloud condensation nuclei droplet growth kinetics of ultrafine particles during anthropogenic nucleation events, *Atmospheric Environment*, 47, 389-398, 2012.
9. ***Croft, B.***, **Pierce, J.R.**, Martin, R.V., Hoose, C., Lohmann, U., Strong sensitivity of aerosol concentrations to convective wet scavenging parameterizations in a global model, *Atmospheric Chemistry and Physics*, 12, 10725-10748, doi:10.5194/acp-12-10725-2012, 2012.
10. ***Stevens, R.G.*, Pierce, J.R.**, Brock, C.A., Reed, M.K., Crawford, J.H., Holloway, J.S., Ryerson, T.B., Huey, L.G., and Nowak, J.B.: Nucleation and growth of sulfate aerosol in coal-fired power plant plumes: sensitivity to background aerosol and meteorology, *Atmospheric Chemistry and Physics*, 12, 189-206, doi:10.5194/acp-12-189-2012, 2012.
11. **Pierce, J. R.**, W. R. Leaitch, J. Liggio, D. M. Westervelt, ***C. D. Wainwright***, J. P. D. Abbatt, L. Ahlm, W. Al-Basheer, D. J. Cziczo, K. L. Hayden, A. K. Y. Lee, S.-M. Li, L. M. Russell, S. J. Sjostedt, K. B. Strawbridge, M. Travis, A. Vlasenko, J. J. B. Wentzell, H. A. Wiebe, J. P. S. Wong, A. M. Macdonald: Nucleation and condensational growth to CCN sizes during a sustained pristine biogenic SOA event in a forested mountain valley, *Atmos. Chem. Phys.*, 12, 3147-3163, doi:10.5194/acp-12-3147-2012, 2012.
12. **Pierce, J.R.**, Riipinen, I., Kulmala, M., Ehn, Petaja, T., Junninen, H., Worsnop, D.R., Donahue, N.M.: Quantification of the volatility of secondary organic compounds in ultrafine particles during nucleation events, *Atmospheric Chemistry and Physics*, 11, 9019-9036, doi:10.5194/acp-11-9019-2011, 2011.
13. Chang, R.Y.-W., Sjostedt, S.J., **Pierce, J.R.**, Papakyriakou, T.N., Scarratt, M.G., Michaud, S., Levasseur, M., Leaitch, W.R., Abbatt, J.,P.,D., Relating Atmospheric and Oceanic DMS Levels to Particle Nucleation Events in the Canadian Arctic, *Journal of Geophysical Research*, 116, D00S03, do:10.1029/2011JD015926, 2011.
14. Donahue, N.M., Trump, E.R., **Pierce, J.R.**, Riipinen, I.: Theoretical Constraints on Pure Vapor-Pressure Driven Condensation of Organics to Ultrafine Particles, *Geophysical Research Letters* , 38, L16801, doi:10.1029/2011GL048115, 2011.
15. ***Snow-Kropla, E. J.***, **Pierce, J. R.**, Westervelt, D. M., Trivitayanurak, W.: Cosmic rays, aerosol formation and cloud-condensation nuclei: Sensitivities to model uncertainties,

Atmospheric Chemistry and Physics, 11, 4001-4013, doi:10.5194/acp-11-4001-2011, 2011

16. Riipinen, I., **Pierce, J. R.**, Yli-Juuti, T., Nieminen, T., Häkkinen, S., Ehn, M., Junninen, H., Lehtipalo, K., Petäjä, T., Slowik, J., Chang, R., Shantz, N. C., Abbatt, J., Leaitch, W. R., Kerminen, V.-M., Worsnop, D. R., Pandis, S. N., Donahue, N. M., and Kulmala, M.: Organic condensation: a vital link connecting aerosol formation to cloud condensation nuclei (CCN) concentrations, *Atmospheric Chemistry and Physics*, 11, 3865-3878, doi:10.5194/acp-11-3865-2011, 2011.
17. Lee, B.-H., **Pierce, J.R.**, Engelhart, G.J., Pandis, S.N.,Volatility of secondary organic aerosol from the ozonolysis of monoterpenes, *Atmospheric Environment*, 2443-2452, 2011.
18. **Pierce, J.R.**, Weisenstein, D.K., Heckendorn, P., Peter, T., Keith, D.W., Efficient formation of stratospheric aerosol for climate engineering by emission of condensible vapor from aircraft, *Geophysical Research Letters*, 37, L18805, doi:10.1029/2010GL043975, 2010.
19. **Pierce, J.R.**, Kahn, R.A., Davis, M.R., and Comstock, J.M., Detecting thin cirrus in MISR aerosol retrievals, *Journal of Geophysical Research*, 115, D08201, doi:10.1029/2009JD013019, 2010.
20. Riipinen, I., **Pierce, J.R.**, Donahue, N.M., Pandis, S.N., Equilibration time scales of organic aerosol inside thermodenuders: Evaporation kinetics versus thermodynamics, *Atmospheric Environment*, 44, 597-607, 2010.
21. **Pierce, J.R.**, Adams, P.J., Can cosmic rays affect cloud condensation nuclei by altering new particle formation rates, *Geophysical Research Letters*, 36, L09820, 2009.
22. Kostenidou, E., Lee B.-H., Engelhart, G.J., **Pierce, J.R.**, Pandis, S.N., Mass Spectra Deconvolution of Low, Medium and High Volatility Biogenic Secondary Organic Aerosol, *Environmental Science and Technology*, 43, 4884-4889, 2009.
23. **Pierce, J.R.**, Theodoritsi, G., Adams, P.J., Pandis, S.N., Parameterization of the effect of sub-grid scale aerosol dynamics on aerosol number emission rates, *Journal of Aerosol Science*, 40, 385-393, 2009.
24. **Pierce, J.R.**, Adams, P.J., Uncertainty in global CCN concentrations from uncertain aerosol nucleation and primary emission rates, *Atmospheric Chemistry and Physics*, 9, 1339-1356, 2009.
25. **Pierce, J.R.**, Adams, P.J., A computationally efficient aerosol nucleation/condensation method: Pseudo-steady-state sulfuric acid, *Aerosol Science and Technology*, 43, 216-226 2009.
26. **Pierce, J.R.**, Engelhart, G.J., Hildebrandt, L., Weitkamp, E.A., Pathak, R.K., Donahue, N.M., Robinson, A.R., Adams, P.J., Pandis, S.N., Constraining particle evolution from wall losses, coagulation, and condensation evaporation in smog-chamber experiments: optimal estimation based on size distribution measurements, *Aerosol Science and Technology*, 42, 1001-1015, 2008.
27. L.-H. Young, D. Benson, F. Kameel, **J. R. Pierce**, H. Junninen, M. Kulmala, and S.-H. Lee, Laboratory Studies of H2SO4/H2O Binary Homogeneous Nucleation from the SO2+OH Reaction: Evaluation of the Experimental Setup and Preliminary Results, *Atmospheric Chemistry and Physics*, 8, 4997-5016, 2008.

28. **Pierce, J.R.**, Chen, K., and Adams, P.J., Contribution of carbonaceous aerosol to cloud condensation nuclei: processes and uncertainties evaluated with a global aerosol microphysics model, *Atmospheric Chemistry and Physics*, 7, 5447-5466, 2007
29. Weitkamp, E.A., Sage, A.M., **Pierce, J.R.**, Donahue, N.M., Robinson, A.L., Organic aerosol formation from photochemical oxidation of diesel exhaust in a smog chamber, *Environmental Science and Technology*, 41 (20), 6969 -6975, 2007.
30. **Pierce, J.R.**, and Adams, P.J., Efficiency of cloud condensation nuclei formation from ultrafine particles, *Atmospheric Chemistry and Physics*, 7, 1367-1379, 2007.
31. Robinson, A.L., Donahue, N.M., Shrivastava, M.K., Weitkamp, E.A., Sage, A.M., Grieshop, A.P., Lane, T.E., **Pierce, J.R.**, Pandis, S.N., Rethinking organic aerosols: Semivolatile emissions and photochemical aging, *Science*, 315, March 2, 2007.
32. **Pierce, J.R.**, and Adams P.J., Global evaluation of CCN formation by direct emission of sea salt and growth of ultrafine sea salt, *Journal of Geophysical Research-Atmospheres*, 111 (D6), doi:10.1029/2005JD006186, 2006.

Other relevant publications

33. **Pierce, J.R.**: Particulars of particle formation, News and Views article in *Nature Geoscience*, 4, 665-666, 2011.
34. **Pierce, J.R.**: Cosmic rays and clouds: Potential mechanisms, guest article for *realclimate.org*, September 26, 2011, http://www.realclimate.org/index.php/archives/2011/09/cosmic-rays-and-clouds-potential-mechanisms/.

Invited presentations

1. Pierce, J.R., et al., "Uncertainties in SO2 and aerosol formation: (1) Anthopogenic sulfur plumes, (2) SO2 + criegee", Leeds University, Leeds, UK, 9/2012.
2. Pierce, J.R., et al., "The formation and growth of ultrafine atmospheric aerosols: Uncertainties in sulfur chemistry", York University, York, UK, 9/2012.
3. Pierce, J.R., et al., "CCN predictions in global aerosol models: Where do we need improvements?", Telluride Aerosol and Cloud Workshop, Telluride, CO, 8/2012.
4. Pierce, J.R., et al., "Aerosol chemistry in coal-fired power-plant plumes: Can emissions controls increase particle number concentrations?", Canadian Chemistry Conference, Calgary, Alberta, 5/2012.
5. Pierce, J.R., "What would it take for cosmic-ray fluctuations to have a significant impact on CCN?", CLOUD ITN meeting, Frankfurt, Germany, 5/2012.
6. Pierce, J.R., "The formation and growth of ultrafine atmospheric aerosols", invited talk at Stockholm University, Sweden, 5/2012.
7. Pierce, J.R., "The formation and growth of ultrafine atmospheric aerosols", invited talk at Colorado State University, 3/2012.
8. Pierce, J.R., Ilona Riipinen, Markku Kulmala, Mikael Ehn, Tukka Petäjä, Heikki Junninen, Doug Worsnop, Neil Donahue, "The volatility of secondary organic compounds in ultrafine particles during nucleation events", invited talk at International Aerosol Modeling Algorithms meeting, Davis, CA, 11/2011.
9. Pierce, J.R., "Adventures in aerosol microphysics... Episode 1: Power plants, pollution controls and CCN formation; Episode 2: Cosmic rays, aerosols, clouds and climate", invited talk at NOAA, Boulder, CO, 11/2011.

10. Pierce, J.R., “Cosmic rays, aerosols, clouds and other adventures in aerosol microphysics”, invited talk at Colorado State University, 11/2011.
11. Pierce, J.R., “Cosmic rays, aerosols, clouds and climate”, invited talk at US National Research Council Meeting on Solar Variability and Climate, Boulder, CO, 9/2011.
12. Pierce, Jeffrey R.; Weisenstein, Debra K.; Heckendorn, Patricia; Peter, Thomas; Keith, David, “Efficient formation of stratospheric aerosol for geoengineering by emission of condensable vapour from aircraft”, invited talk at American Geophysical Union, San Francisco, 12/2010.
13. Pierce, J.R., “The global impact of plume-scale nucleation events”, invited talk at Clarkson University, Potsdam, NY, USA, 11/2010.
14. Pierce, Jeffrey R.; Weisenstein, Debra K.; Heckendorn, Patricia; Peter, Thomas; Keith, David, “Efficient formation of stratospheric aerosol for geoengineering by emission of condensable vapour from aircraft”, invited talk at American Association of Aerosol Research, Portland, Oregon, 10/2010.
15. Pierce, J.R., Stevens, R.G., et al., “New aerosol formation and growth in coal-fired power-plant plumes”, invited talk at Electric Power Research Institute annual modeling meeting, Palo Alto, CA, 7/2010.
16. Pierce, J.R., Weisenstein, D.K., Heckendorn, P., Peter, T., Keith, D.W., “Efficient formation of stratospheric aerosol for geoengineering by emission of condensable vapour from aircraft”, invited talk at the European Geophysical Union Annual Conference, Vienna, Austria, 5/2010.
17. Pierce, J.R., “The global impact of plume-scale nucleation events”, invited talk at Environment Canada, Dartmouth, NS, Canada, 2/2010.
18. Pierce, J.R., “The global impact of plume-scale nucleation events”, invited talk at Environment Canada, Downsview, ON, Canada, 1/2010.
19. Pierce, J.R., Stevens, R.G., Brock, C.A., “How do uncertainties in plume-scale aerosol processes inhibit our understanding of aerosols, clouds and climate?”, invited talk at Cloud-Aerosol Feedbacks on Climate meeting, Toronto, Canada, 2/2010.
20. Pierce, J.R., “The global impact of plume-scale nucleation events”, invited talk at Danish Technical University, Copenhagen, Denmark, 1/2010.
21. Pierce, J.R., “The global impact of plume-scale nucleation events”, invited talk at University of Helsinki, Helsinki, Finland, 1/2010.
22. Pierce, J.R., Stevens, R.G., Brock, C.A., “How do uncertainties in plume-scale aerosol processes inhibit our understanding of aerosols, clouds and climate?”, invited talk at Canadian Center for Climate Modelling and Analysis, Victoria, BC, 11/2009.
23. Pierce, J.R., Stevens, R.G., Brock, C.A., “How do uncertainties in plume-scale aerosol processes inhibit our understanding of aerosols, clouds and climate?”, invited talk at Atmospheric Colloquium for Emerging Senior Scientists, 8/2009.
24. Pierce, J.R., “New developments in aerosol-cloud interactions”, invited talk at Carnegie-Mellon University, 6/2009.
25. Pierce, J.R., “Understanding sub-grid aerosol processes in chemical-transport models”, invited talk at AEROCENTER, NASA Goddard Space Flight Center, 6/2009.
26. Pierce, J.R., “Jointly retrieving aerosols and thin cirrus using MISR”, invited talk at NASA Goddard Space Flight Center, Climate and Radiation Branch, 5/2009.
27. Pierce, J.R., “Understanding sub-grid aerosol processes in chemical-transport models”, invited talk at NASA Langley Research Center, 5/2009.

28. Pierce, J.R., “Towards understanding aerosol physical and chemical properties”, invited talk at Dalhousie University, Department of Physics and Atmospheric Science, 3/2009.
29. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at University of Toronto, Department of Chemistry, 1/2009.
30. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at University of Connecticut, Department of Chemical Engineering, 4/2008.
31. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Dalhousie University, Department of Physics and Atmospheric Science, 4/2008.
32. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Duke University, Department of Civil and Environmental Engineering, 3/2008.
33. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Goddard Space Flight Center, 3/2008.
34. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Brookhaven National Lab, 3/2008.
35. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Purdue University, Department of Earth and Atmospheric Science, 3/2008.
36. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Northeastern University, Department of Chemical Engineering, 3/2008.
37. Pierce, J.R., “Ultrafine atmospheric aerosols, clouds and climate”, invited talk at Massachusetts Institute of Technology, MASS seminar, 2/2008.
38. Pierce, J.R., “Impact of ultrafine aerosols on cloud condensation nuclei”, invited talk at Penn State, Department of Meteorology, 11/2007.
39. Pierce, J.R., “Climate change and chemical engineering”, invited talk for Northeastern University student American Institute of Chemical Engineers, Boston, MA, 3/2007.

Selected other presentations

40. Jeff Pierce, Mat Evans, Steve D'Andrea, Delphine Farmer and Dom Spacklen, “The importance of SO2 chemistry in predicting aerosol nucleation, growth and CCN”, American Association of Aerosol Research, Minneapolis, MN, 10/2012.
41. Stéphanie Gagné, Landan MacDonald, Michael Earle, W. Richard Leaitch, Jeffrey R. Pierce, “Aerosol-clouds-precipitation: aircraft measurements on the east coast of Canada”, American Association of Aerosol Research, Minneapolis, MN, 10/2012.
42. Pierce, J.R., Ilona Riipinen, Markku Kulmala, Mikael Ehn, Tukka Petäjä, Heikki Junninen, Doug Worsnop, Neil Donahue, “Quantification of the volatility of secondary organic compounds in ultrafine particles during nucleation events”, American Geophysical Union, San Francisco, CA, 12/2011.
43. Pierce, J.R., Wainwright, C., Leaitch, W.R., Macdonald, A.M., Alhm, L., Russel, L. et al., “Nucleation and condensational growth to CCN sizes during a sustained pristine biogenic SOA event in a forested mountain valley.”, American Association of Aerosol Research, Orlando, FL, 10/2011.
44. Pierce, J.R., Ilona Riipinen, Markku Kulmala, Mikael Ehn, Tukka Petäjä, Heikki Junninen, Doug Worsnop, Neil Donahue, “Quantification of the volatility of secondary organic compounds in ultrafine particles during nucleation events”, American Association of Aerosol Research, Orlando, FL, 10/2011.

45. Pierce, J.R.; Snow-Kropla, E., Westervelt, D.M.; Trivitayanurak, W.: The sensitivity of aerosol formation and cloud-condensation nuclei to cosmic rays in GEOS-Chem/TOMAS, 5th International GEOS-Chem Users Meeting, Boston, MA, 5/2011.
46. Pierce, J.R.; Wainwright, C.; Leaitch; W.R.: Aerosol microphysical modelling of the Whistler 2010 campaign, WACS2010 meeting, Environment Canada, Downsview, ON, 2/2011.
47. Pierce, Jeffrey R.; Weisenstein, Debra K.; Heckendorn, Patricia; Peter, Thomas; Keith, David, "Enhanced geoengineering efficacy through direct emission of sulphuric acid to stratosphere", International Aerosol Conference, Helsinki, Finland, 8/2010.
48. Pierce, J.R., Riipinen, I., et al., "Organic condensation: A vital link connecting new-particle formation to climate forcing", International Global Atmospheric Chemistry conference, Halifax, NS, 7/2010.
49. Pierce, J.R., Kahn, R.A., Davis, M.R., Comstock, J.M., "Detecting thin cirrus in MISR aerosol retrievals", MISR-Users Meeting, Pasedina, California, 12/2009.
50. Pierce, J.R., Davis, M.R., Kahn, R.A., "Resolving thin cirrus in Multi-angle Imaging SpectroRadiometer aerosol retrievals", Cloud-Aerosol Feedbacks on Climate meeting, Toronto, Canada, 1/2009.
51. Pierce, J.R., Adams, P.J., "Can cosmic rays affect clouds by altering new particle formation rates?", American Geophysical Union, San Francisco, CA, 12/2008.
52. Pierce, J.R., Adams, P.J., "Uncertainty in global CCN concentrations from aerosol nucleation, primary emissions and SOA", American Association of Aerosol Research, Orlando, FL, 9/2008.
53. Pierce, J.R., Adams, P.J., "Can cosmic rays affect clouds by altering new particle formation rates?", American Association of Aerosol Research, Orlando, FL, 9/2008.
54. Pierce, J.R., Adams, P.J., "Global CCN Formation from Aerosol Nucleation", European Aerosol Conference, Thessaloniki, Greece, 8/2008.
55. Pierce, J.R., Adams, P.J., "Global contribution of nucleation to aerosol number and cloud condensation nuclei", American Geophysical Union, San Francisco, CA, 12/2007.
56. Pierce, J.R., Adams, P.J., "A computationally efficient aerosol nucleation/condensation method: Pseudo-steady state gas phase sulfuric acid", American Institute of Chemical Engineers, Salt Lake City, UT, 11/2007.
57. Pierce, J.R., Engelhart, G.J., Weitkamp, E.A., Pathak, R.K., Pandis, S.N., Donahue, N.M., Robinson, A.R., Adams, P.J., "Estimating the contribution of wall loss and condensation/evaporation to aerosol size evolution in smog chamber experiments", American Association of Aerosol Research, Reno, NV, 9/2007.
58. Pierce, J.R., Adams, P.J., "A computationally efficient aerosol nucleation/condensation method: Pseudo-steady state gas phase sulfuric acid", American Association of Aerosol Research, Reno, NV, 9/2007.
59. Pierce, J.R., Chen, K., Adams, P.J., "The contribution of carbonaceous aerosol to global cloud condensation nuclei", American Geophysical Union, San Francisco, CA, 12/2006.
60. Pierce, J.R., Adams, P.J., "Probability of the growth of ultrafine atmospheric aerosol to cloud condensation nuclei," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, 11/2006.
61. Pierce, J.R., Adams, P.J., "Sea-salt and CCN uncertainty," American Association of Aerosol Research Annual Meeting, Austin, TX, 10/2005.

Memberships and Professional Service

American Association for Aerosol Research (AAAR): member, Atmospheric Aerosols Working Group Chair, Young Investigators Committee (Chair)
American Geophysical Union (AGU): member
European Geophysical Union (EGU): member
International Global Atmospheric Chemisry (IGAC): member
GEOS-Chem: Atmospheric Aerosol steering committee co-chair
Peer reviewed over 50 manuscripts since 2006.

Research Advisees

Colorado State:
Masters: Kimiko Sakamoto (2013-)
Dalhousie:
Undergraduate: Robert Archibald, (2010), Elliot Snow-Kropla (2010-2011), Christopher Wainwright (2010-2011), Geoffrey Stuart (2011-), Landan MacDonald (2012-)
Masters: Robin Stevens, (2009-2010; transferred to Ph.D.), Chantelle Lonsdale (2010-2012), Stephen D'Andrea (2012-)
Ph.D.: Robin Stevens, (2010-)
Postdoctoral: Betty Croft (2011-), Stephanie Gagne (2011-)
Research assistant: Christopher Wainwright (2011-2012), Kimiko Sakamoto (2012)
Advisory Committees: 7 masters students and 5 Ph.D. students
Other institutions:
Ph.D. external examiner: Torsten Bondo, Danish Technical University, January, 2010; Amar Hamed, University of Helsinki, August, 2010; Eimear Dunne, University of Leeds, September, 2012.

University Activities

Dal Faculty Senator: 2011-2012
Dal Atmospheric Science Seminar organizer: 2009-
Dal Atmospheric Science graduate student presentation organizer: 2009-
Dal Faculty of Graduate Studies NSERC PGF-D committee: 2009-2011
CMU Chemical Engineering Graduate Student Association (ChEGSA), Graduate Symposium organizer (2004), President (2005), Secretary (2007).
CMU Student Chemical Engineering Car Team (Chem-E-Car), Advisor (2005-2008)
NU Tau Beta Pi (Engineering Honor Society), President (2002-2003)
NU Student Chemical Engineering Car Team (Chem-E-Car), Member (2001-2003), Captain (2001-2002)
NU Student American Institute of Chemical Engineers, Class Representative (1999-2003)
NU Jazz Ensemble, Piano and Organ (1999-2003)

Volunteer Work

Feed Nova Scotia, Food bank (2010)
Big Brothers Big Sisters, "Big brother" mentor to child through BBBS of Greater Pittsburgh (2005-2008)

National Chemistry Week and National Engineers week, "Made science" with children during outreach days at Pittsburgh Science Center (2003-2007)

Society of Women Engineers outreach, Community outreach days with local high school girls and the CMU Colloids, Polymers and Surfaces Lab (2004-2005)

Greater Boston Food Bank, Organized Tau Beta Pi trips to sort donated food (2002-2003)

St. Jude's Children's Hospital, Organized event to make Valentines Day cards for St. Jude's children (2/2003)