

OLIVIA E. CLIFTON

National Center for Atmospheric Research
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Education

Ph.D. Columbia University, Earth & Environmental Sciences, September 2018.

“Constraints on ozone removal by land and implications for 21st Century ozone pollution”

Advisor: Arlene Fiore

M.Phil. Columbia University, Earth & Environmental Sciences, May 2017.

M.A. Columbia University, Earth & Environmental Sciences, May 2015.

B.S. University of Wisconsin-Madison, Mathematics, December 2012.

Professional Experience

Postdoctoral Fellow Advanced Study Program, National Center for Atmospheric Research, 2018-

NSF Graduate Research Fellow Columbia University, 2015-2018.

Graduate Researcher Columbia University, 2013-2014.

Research Assistant Columbia University, 2013.

Undergraduate Researcher University of Wisconsin-Madison, 2011-2012.

Intern NASA Student Airborne Research Program, 2012.

Honors and Awards

MIT Civil & Environmental Engineering Rising Star, 2017.

AMS First Place Oral Presentation, Third Conference on Atmospheric Biogeosciences, 2016.

NSF Graduate Research Fellowship, 2015.

NSF Graduate Research Fellowship Honorable Mention, 2014.

University of Wisconsin-Madison Holstrom Environmental Scholarship, 2012.

Peer-reviewed Publications

1. Fiore, A. M., E. V. Fischer, S. Pandey Deolal, O. Wild, D. Jaffe, J. Staehelin, **O. E. Clifton**, et al., Peroxy acetyl nitrate (PAN) measurements at northern mid-latitude mountain sites in April: A constraint on continental source-receptor relationships, accepted at *Atmospheric Chemistry and Physics*
2. Rieder, H., A. M. Fiore, **O. E. Clifton**, G. Correa, L. W. Horowitz, and V. Naik (2018), Combining model projections with site-level observations to estimate changes in distributions and seasonality of ozone in surface air over the USA, *Atmospheric Environment*, doi:10.1016/j.atmosenv.2018.07.042.
3. **Clifton, O. E.**, A. M. Fiore, J. W. Munger, S. Malyshev, L. W. Horowitz, E. Shevliakova, F. Paulot, L. T. Murray, and K. L. Griffin (2017), Interannual variability in ozone removal by a temperate deciduous forest, *Geophysical Research Letters*, 44, doi:10.1002/2016GL070923.
4. **Clifton, O. E.**, A. M. Fiore, G. Correa, L. W. Horowitz, and V. Naik (2014), Twenty-first century reversal of the surface ozone seasonal cycle over the northeastern United States, *Geophysical Research Letters*, 41, doi:10.1002/2014GL061378. *Featured as an AGU EOS Research Spotlight.*
5. Fiore, A. M., J. T. Oberman, M. Y. Lin, L. Zhang, **O. E. Clifton**, D. J. Jacob, V. Naik, L. W. Horowitz, J. P. Pinto, and G. P. Milly, Estimating North American background ozone in U.S. surface air with two independent global models: Variability, uncertainties, and recommendations, *Atmospheric Environment*, 96, doi:10.1016/j.atmosenv.2014.07.045.

Professional Activities

Co-organizer Review paper on ozone dry deposition, 2018

Member Air Quality Model Evaluation International Initiative (AQMEII) Steering Group 4, 2018

Co-organizer Lamont Climate Center Workshop on Ozone Dry Deposition, 2017

Board Member Women In Science at Columbia (WISC), 2017-2018

Organizer WISC Writing Workshop for NSF Graduate Research Fellowship Applicants, 2017

Member Lamont Colloquium Committee, 2014-2016

Contributing Author IPCC Working Group 1 Chapter 11, 2013

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Member American Geophysical Union (since 2012), Earth Science Women's Network (since 2012), Women In Science at Columbia (since 2013), American Meteorological Society (since 2016)

Teaching and Mentoring Experience

Guest Lecturer Atmospheric Aerosols, Columbia University, 2018.

Research Mentor Eleanor Pressman (Columbia College '19), 2017.

Guest Lecturer Introduction to Atmospheric Chemistry, Columbia University, 2017.

Teaching Assistant Earth's Environmental System: Climate, Columbia University, 2016.

Teaching Assistant Quantitative Models of Climate-Sensitive Natural and Human Systems, Columbia University, 2014.

Teaching Assistant Introduction to Atmospheric Chemistry, Columbia University, 2014.

Presentations (P for poster)

1. American Geophysical Union Fall Meeting, New Orleans, LA 2017
"Surface ozone seasonality under global change: Influence from dry deposition and isoprene emissions at northern mid-latitudes"
2. Long-term Biosphere-Atmosphere Chemical Flux Workshop, Irvine, CA 2017
"Why do we need long-term measurements of ozone dry deposition?" *Invited*
3. Lamont Climate Center Workshop on Ozone Dry Deposition, Palisades, NY 2017
"Interannual variability in ozone dry deposition at a temperate deciduous forest"
4. 5th Integrated Land Ecosystem-Atmosphere Processes Study Science Conference, Oxford, UK 2017
"Interannual variability in ozone dry deposition at a temperate deciduous forest"
5. New York City Metro Area Energy and Air Quality Data Gaps Workshop, Palisades, NY 2017 (P)
"Interannual variability in ozone dry deposition at a temperate deciduous forest"
6. Annual Harvard Forest Ecology Symposium, Petersham, MA 2017 (P)
"Interannual variability in ozone dry deposition at Harvard Forest"
7. International Global Atmospheric Chemistry Science Conference, Breckenridge, CO 2016 (P)
"Interannual variability in ozone dry deposition at a temperate deciduous forest"
8. International Summer School on Atmospheric and Oceanic Sciences: Advanced Programming Techniques for the Earth System Science, L'Aquila, Italy 2016 (P)
"Hierarchy of models for investigating role of dry deposition on air quality-climate connections"
9. 3rd Conference on Atmospheric Biogeosciences, Salt Lake City, UT 2016
"Non-stomatal uptake controls interannual variability in ozone dry deposition at a northern mid-latitude broadleaf deciduous forest"
10. European Geophysical Union 2016 Conference, Vienna, Austria 2016
"Phenological controls on interannual variability in ozone dry deposition velocity"
11. NASA Air Quality Applied Sciences Team 7 Meeting, Cambridge, MA 2014 (P)
"21st Century Reversal of the Surface Ozone Seasonal Cycle over the Northeastern United States"
12. Global Decadal Hydroclimate Predictability, Variability & Change Meeting, Palisades, NY 2014
"21st Century Reversal of the Surface Ozone Seasonal Cycle over the Northeastern United States" *Invited*
13. 3rd Chemistry-Climate Modeling Initiative Workshop, Lancaster, UK 2014 (P)
"21st Century Reversal of the Surface Ozone Seasonal Cycle over the Northeastern United States" *Recipient of International Global Atmospheric Chemistry (IGAC) travel grant*
14. First Year Colloquium, Palisades, NY 2014
"21st Century Reversal of the Surface Ozone Seasonal Cycle over the Northeastern United States"
15. American Geophysical Union Fall Meeting, San Francisco, CA 2013 (P)
"Shifting seasonal cycles of surface ozone: the role of regional vs. global emission changes in Northeast & Mountainous West U.S."
16. New York State Energy Research and Development Authority Environmental Monitoring, Evaluation and Protection in New York: Linking Science and Policy Conference, Albany, NY 2013 (P)

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- “Shifting seasonal cycles of surface ozone: the role of regional vs. global emission changes in Northeast & Mountainous West U.S.”
17. Columbia University Atmospheric Chemistry Symposium, New York, NY 2013
“Shifting seasonal cycles of surface ozone: the role of regional vs. global emission changes”
 18. American Geophysical Union Fall Meeting, San Francisco, CA 2012 (P)
“Estimating Western U.S. Oil & Gas Emissions with OMI NO₂ Data”
 19. NASA Student Airborne Research Program, Irvine, CA 2012
“Modeling time evolution of C5 alkyl nitrates for use as indicator species of crude oil emissions in southern California”
 20. NASA Air Quality Applied Sciences Team 3 Meeting, Madison, WI 2012 (P)
“Estimating Western U.S. Oil & Gas Emissions with OMI NO₂ Data”

Technical Skills and Training

- Proficiency with Fortran, NetCDF, python, Matlab, IDL, UNIX, git
- Configuration of sensitivity simulations in NOAA GFDL models, including development to land model
- Short courses: NCAR Community Land Model 2016 Tutorial, Collaboratory@Columbia Data Science Bootcamp, International Summer School on Atmospheric & Oceanic Sciences: Advanced Programming Techniques for the Earth System Science

Outreach Activities

Lunchtime Mentor Lamont Secondary School Field Research Program, Palisades, NY 2014, 2016, 2018.

Presenter Lamont Open House, Palisades, NY 2014, 2016, 2017.

Presenter Career Day, Public School 180, New York, NY 2017.

Presenter Columbia University EESC UN2100 Field Trip to Lamont, Palisades, NY 2015, 2016.

Presenter Earth2Class, Palisades, NY 2016.

Panelist Inspiring Voices: STEAM Working Professionals Panel, Potomac, MD 2015.

Presenter Pascack Hills High School Girls' Climate Stewards Club, Palisades, NY 2014.

Exhibitor Princeton Plasma Physics Laboratory Young Women's Conference, Princeton, NJ 2014.

Experimental Leader Women In Science at Columbia Girls' Science Day, New York, NY 2013.

Presenter Expand Your Horizons, Madison, WI 2012.