

DR. OLIVIA E. CLIFTON

Advanced Study Program Postdoctoral Fellow | National Center for Atmospheric Research

National Center for Atmospheric Research (NCAR)
P.O. Box 3000
Boulder, Colorado, 80307 USA

oclifton@ucar.edu
(303) 497-8210
www.oliviACLIFTON.com

Education

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

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

Professional Experience

Postdoctoral Fellow Advanced Study Program (ASP), NCAR, 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

15th Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS XV), 2019.

Earth Educators' Rendezvous travel grant recipient, 2019.

NCAR ASP Postdoctoral Fellowship, 2018.

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.

Manuscripts in preparation

1. **Clifton, O. E.**, F. Paulot, A. M. Fiore, L. W. Horowitz, S. Malyshev, G. Correa, E. Shevliakova, et al., Influence of dynamic ozone dry deposition on ozone pollution, in preparation for *Atmospheric Chemistry and Physics*
2. **Clifton, O. E.**, A. M. Fiore, W. J. Massman, C. B. Baublitz, M. Coyle, L. Emberson, S. Fares, D. K. Farmer, P. Gentine, G. Gerosa, A. Guenther, D. Helmig, D. L. Lombardozzi, J. W. Munger, E. G. Patton, S. E. Pusede, D. B. Schwede, S. J. Silva, M. Sörgel, A. L. Steiner, & A. P. K. Tai, Dry deposition of ozone over land: processes, measurement and modeling, in preparation for *Reviews of Geophysics*

Peer-reviewed Publications

3. **Clifton, O. E.**, A. M. Fiore, J. W. Munger, and R. Wehr (2019), Spatiotemporal controls on observed daytime ozone deposition velocity over Northeastern U.S. forests during summer, *Journal of Geophysical Research: Atmospheres*. <https://doi.org/10.1029/2018JD029073>
4. 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, *Atmospheric Chemistry and Physics*, 18, 15345-15361. <https://doi.org/10.5194/acp-18-15345-2018>
5. 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*. <https://doi.org/10.1016/j.atmosenv.2018.07.042>
6. **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. <https://doi.org/10.1002/2016GL070923>

DR. OLIVIA E. CLIFTON

Advanced Study Program Postdoctoral Fellow | National Center for Atmospheric Research

7. 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. <https://doi.org/10.1002/2014GL061378> *Featured as an AGU EOS Research Spotlight.*
8. 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. <https://doi.org/10.1016/j.atmosenv.2014.07.045>

Professional Activities

Primary Convener Biosphere-Atmosphere Interactions and Atmospheric Chemistry, AGU 2019

Member NCAR ASP Professional Development Committee, 2018-

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

Co-organizer Workshop on Ozone Dry Deposition (Funding from NASA, NOAA, and Lamont Climate Center), 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

Reviewer *Atmospheric Chemistry and Physics, Biogeosciences, Environmental Science and Pollution Research, Environmental Pollution, Geoscientific Model Development, Geophysical Research Letters, Journal of Advances in Modeling Earth Systems, Journal of Geophysical Research-Atmospheres*

Member American Geophysical Union (since 2012), Earth Science Women's Network (ESWN; since 2012), Women In Science at Columbia (2013-2018)

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.

Invited Talks

1. [Forthcoming] iLEAPS Early Career Scientists Conference: Air Quality-Ecosystem Interactions, Boulder, CO, October 17, 2019.
2. [Forthcoming] Colorado State University, Atmospheric Chemistry Group Meeting, Fort Collins, CO, October 4, 2019.
3. [Forthcoming] Fourth Conference on Meteorology and Climate-Modeling for Air Quality (MAC-MAQ), Davis, CA, Sept. 2019
4. [Forthcoming] Stony Brook University, School of Marine and Atmospheric Sciences, Topics in Atmospheric and Oceanic Sciences seminar, Stony Brook, NY, August 28, 2019
5. 15th Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS XV), Brookhaven National Laboratory, NY 2019
"Influence of dynamic ozone dry deposition on ozone pollution"
6. NASA Jet Propulsion Laboratory Climate Center Workshop on Air Quality - Ecosystem Interactions, Pasadena, CA 2019
"Observations and modeling transformative for understanding ozone dry deposition"
7. NCAR Atmospheric Chemistry Observations and Modeling Seminar, Boulder, CO 2019
"Constraints on ozone removal by land and implications for 21st Century ozone pollution"
8. Long-term Biosphere-Atmosphere Chemical Flux Workshop, Irvine, CA 2017
"Why do we need long-term measurements of ozone dry deposition?"
9. Global Decadal Hydroclimate Predictability, Variability & Change Meeting, Palisades, NY 2014

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“21st Century Reversal of the Surface Ozone Seasonal Cycle over the Northeastern United States”

First-Author Presentations (P for poster)

1. Gordon Research Conference on Atmospheric Chemistry, Newry, ME 2019 (P)
“Influence of dynamic ozone dry deposition on ozone pollution”
2. NCAR MUSICA Kick-off Meeting, Boulder, CO 2019
“Towards mechanistic modeling of ozone dry deposition”
3. NCAR/NEON Workshop on Predicting life in the Earth system: linking the geosciences and ecology, Boulder, CO 2019
“Why do we need long-term measurements of ozone dry deposition?”
4. NCAR Chemistry-Climate Working Group Meeting, Boulder, CO 2019
“Coupling the land and atmospheric chemistry through ozone dry deposition in a global chemistry-climate model, and implications for ozone pollution”
5. NCAR Land Model and Biogeochemistry Working Group Meeting, Boulder, CO 2019
“Simulating the terrestrial sink of tropospheric ozone with a global land model and its influence on ozone pollution”
6. American Geophysical Union Fall Meeting, Washington, DC 2018 (P)
“What controls variations in summertime ozone dry deposition over the Northeastern US? Observational and modeling insights, and implications for ozone pollution”
7. 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”
8. Lamont Climate Center Workshop on Ozone Dry Deposition, Palisades, NY 2017
“Interannual variability in ozone dry deposition at a temperate deciduous forest”
9. 5th Integrated Land Ecosystem-Atmosphere Processes Study Science Conference, Oxford, UK 2017
“Interannual variability in ozone dry deposition at a temperate deciduous forest”
10. 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”
11. Annual Harvard Forest Ecology Symposium, Petersham, MA 2017 (P)
“Interannual variability in ozone dry deposition at Harvard Forest”
12. International Global Atmospheric Chemistry Science Conference, Breckenridge, CO 2016 (P)
“Interannual variability in ozone dry deposition at a temperate deciduous forest”
13. 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”
14. 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”
15. European Geophysical Union 2016 Conference, Vienna, Austria 2016
“Phenological controls on interannual variability in ozone dry deposition velocity”
16. 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”
17. 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*
18. 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.”
19. 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)
“Shifting seasonal cycles of surface ozone: the role of regional vs. global emission changes in Northeast & Mountainous West U.S.”

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20. American Geophysical Union Fall Meeting, San Francisco, CA 2012 (P)
“Estimating Western U.S. Oil & Gas Emissions with OMI NO₂ Data”
21. 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”
22. NASA Air Quality Applied Sciences Team 3 Meeting, Madison, WI 2012 (P)
“Estimating Western U.S. Oil & Gas Emissions with OMI NO₂ Data”

Outreach Activities

Volunteer NCAR Explorer Series, 2019.

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.