

# Ethan D. Coffel

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## CONTACT INFORMATION

Syracuse University  
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Syracuse, NY

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## ACADEMIC APPOINTMENTS

**Syracuse University**, Syracuse, NY **Fall 2020 -**  
Assistant Professor, Department of Geography and the Environment

**Dartmouth College**, Hanover, NH **Fall 2018 - Aug. 2020**  
Neukom Institute Postdoctoral Fellow  
Departments of Geography and Earth Sciences

## EDUCATION

**Columbia University**, New York, NY **2013 - 2018**  
Ph.D Atmospheric Science

**Columbia University**, New York, NY  
M.A. Atmospheric Science, May 2015

**Northwestern University**, Evanston, IL **2009 - 2013**  
B.A. with honors, Computer Science, Integrated Science

## PUBLICATIONS: SUBMITTED

18. Ting, M., Lesk, C., Liu, C., Li, C., Horton, M., **Coffel, E. D.**, Rogers, C. D.W., Singh, D. *Extreme Dry and Humid Heat Impact on US Corn and Soybean Yields*. Submitted.

17. **Coffel, E. D.**, Lesk, C., Winter, J. M., Osterberg, E. C., Mankin, J. S. *Crop-climate feedbacks boost U.S. maize and soy yields*. Revising.

16. Kaufman, J., Vicedo-Cabrera, A. M., Tam, V., Song, L., **Coffel, E. D.**, Tasian, G. *The Impact of Climate Change on Kidney Stone Presentations in South Carolina*. Submitted.

## PUBLISHED PEER-REVIEWED ARTICLES

15. Rogers, C., Ting, M., Li, C., Kornhuber, K., **Coffel, E. D.**, Horton, R. M., Raymond, C., Singh, D., 2021. *Recent increases in exposure to extreme humid-heat events disproportionately affect populated regions*. Geophysical Research Letters. 10.1029/2021GL094183

14. Lesk, C., **Coffel, E. D.**, Winter, J. M., Ray, D., Zscheischler, J., Seneviratne, S., Horton, R. M., 2021. *Stronger temperature–moisture couplings exacerbate the impact of climate warming on global crop yields*. Nature Food. 10.1038/s43016-021-00341-6

13. Teitelbaum, C. S., Sirén, A. P. K., **Coffel, E. D.**, Foster, J. R., Frair, J. L., Hinton, J. W., Horton, R. M., Kramer, D. W., Lesk, C. Raymond, C., Wattles, D. W., Zeller, K. A., Morelli, T. L., 2021. *Can behavioral adaptations to climate maintain a species' distribution?* Diversity and Distributions. 10.1111/ddi.13223

12. **Coffel, E. D.**, Mankin, J. S., 2020. *Thermal power generation is disadvantaged in a warming world*. Environmental Research Letters. 10.1088/1748-9326/abd4a8

11. Barnston, A. G., Lyon, B., **Coffel, E. D.**, Horton, R. M., 2020. *Daily Autocorrelation and Mean Temperature/Moisture Rise as Determining Factors for Future Heatwave Patterns in the U.S.* Journal of Applied Meteorology and Climatology. 10.1175/JAMC-D-19-0291.1

10. Lesk, C., **Coffel, E. D.**, Horton, R. M., 2020. *Sensitivity of maize yields to sub-seasonal rainfall distribution and extremes in the United States*. Nature Climate Change. 10.1038/s41558-020-0830-0
9. Lyon, B., Barnston, A. G., **Coffel, E. D.**, Horton, R. M., 2019. *Projected increase in the spatial extent of contiguous U.S. summer heat waves and associated attributes*. Environmental Research Letters. 10.1088/1748-9326/ab4b41
8. **Coffel, E. D.**, Keith, B., Lesk, C., Bower, E., Lee, J., Horton, R. M., Mankin, J. S., 2019. *More frequent concurrently hot and dry years in the Nile basin despite increasing precipitation*. Earth's Future. 10.1029/2019EF001247
7. **Coffel, E. D.**, Horton, R. M., Winter, J. M., Mankin, J. S., 2019. *Nonlinear increases in extreme temperatures paradoxically dampen extreme humid-heat increases*. Environmental Research Letters. 10.1088/1748-9326/ab28b7
6. **Coffel, E. D.**, Horton, R. M., de Sherbinin, A., 2017. *Temperature and humidity based projections of a rapid rise in global heat stress exposure during the 21st century*. Environmental Research Letters. 10.1088/1748-9326/aaa00e
5. **Coffel, E. D.**, Thompson, T. R., Horton, R. M., 2017. *The impact of rising temperatures on aircraft takeoff performance*. Climatic Change Letters. 10.1007/s10584-017-2018-9
4. Lesk, C., **Coffel, E. D.**, D'Amato, T., Dodds, K., Horton, R. M., 2017. *Significant threat to North American forests from Southern Pine Beetle with warming winters*. Nature Climate Change. 10.1038/nclimate3375
3. Horton, R. M., Mankin, J. S., Lesk, C., **Coffel, E. D.**, Raymond, C., 2016. *A Review of Recent Advances in Research on Extreme Heat Events*. Current Climate Change Reports. 10.1007/s40641-016-0042-x
2. Horton, R. M., **Coffel, E. D.**, Winter, J. M., Bader, D. A., 2015. *Projected changes in extreme temperature events based on the NARCCAP model suite*. Geophysical Research Letters. 10.1002/2015gl064914
1. **Coffel, E. D.**, Horton, R. M., 2015. *Climate change and the impact of extreme temperatures on aviation*. AMS Weather, Climate, and Society. 10.1175/wcas-d-14-00026.1

PUBLISHED BOOK  
CHAPTERS

1. **Coffel, E. D.**, Sherbinin, A. de, Horton, R. M., Lane, K., Kienberger, S., Wilhelmi, O., 2018. "The Science of Adaptation to Extreme Heat". *Resilience: The Science of Adaptation to Climate Change*. Eds. Frank, T., Zommers, Z. Elsevier.

OTHER  
PUBLICATIONS

5. **Coffel, E. D.**, Mankin, J. S., 2021. *How global warming is making power plants produce less electricity*. Carbon Brief.
4. **Coffel, E. D.**, Mankin, J. S., 2020. *In the future there will be more rain, but less water, in the Nile Basin*. The Conversation.
3. **Coffel, E. D.**, Horton, R. M., Raymond, C., 2018. *Heat and humidity are a killer combination*. The New York Times.
2. **Coffel, E. D.**, 2017. *Climate change and infrastructure impacts*. Early Career Climate Forum.
1. **Coffel, E. D.**, Horton, R. M., 2017. *How hot weather and climate change affect airline flights*.

The Conversation.

FUNDING

PI: **National Science Foundation** Human-Environment and Geographical Sciences Program. \$360,000. 7/1/21 - 6/30/24. Award 2049262. *Crops help themselves: agriculture-driven local cooling and implications for global food production in a warming world.*

PI: **Syracuse University CUSE Grant**, \$23,686. 6/1/21 - 5/30/23. *Land use drivers of extreme heat waves.*

PI: **Syracuse University Appleby-Mosher Grant**, 12/11/2020 - 6/30/2022, \$1,500. *Incorporating crop-climate interactions to improve projections of climate impacts on agriculture.*

**Dartmouth College Neukom Institute Postdoctoral Fellowship**, 2018 – 2020, \$131,500.

**NASA NPP Postdoctoral Fellowship**, 2018 – 2020, NASA Goddard Institute for Space Studies, (*declined*).

**NSF Funding for the AMS Summer Policy Colloquium**, 2016, \$5,000.

**National Science Foundation Graduate Research Fellowship**, 2015 – 2018, \$138,000.

**Lamont Climate Center Grant**, 2015, \$3,140. *Heat stress in the 21st century.*

TEACHING

**Syracuse University**, Syracuse, NY

*Instructor.* Environmental Change in the Anthropocene (GEO 426), The Natural Environment (GEO 155).

**Dartmouth College**, Hanover, NH

*Instructor.* Life in the Anthropocene.

**Winter 2019, 2020**

PRESENTATIONS

**Coffel, E. D.**. Amplified CMIP6 biases over global croplands. Cornell University Department of Earth and Atmospheric Sciences. 2021. **Invited.**

**Coffel, E. D.**. Crop-climate feedbacks boost U.S. maize and soy yields. Syracuse University Department of Earth Sciences, K.D. Nelson Lecture. 2021.

**Coffel, E. D.**. Crop-climate feedbacks boost U.S. maize and soy yields. Syracuse University Department of Geography and the Environment Seminar, 2020.

**Coffel, E. D.**, Lesk, C., Winter, J. M., Osterberg, E. C., Mankin, J. S. Crop-climate feedbacks boost U.S. maize and soy yields. AGU Fall Meeting, 2020.

**Coffel, E. D.**, Mankin, J. S. Thermal electricity generation disadvantaged in a warming world. AGU Fall Meeting, San Francisco, CA, 2019.

**Coffel, E. D.**, Keith, B., Lesk, C., Bower, E., Lee, J., Horton, R. M., Mankin, J. S. More frequent concurrently hot and dry years in the Nile basin despite increasing precipitation. Workshop on compound extremes, Columbia University, New York, NY, 2019.

**Coffel, E. D.**, Horton, R. M., Winter, J. M., Mankin, J. S. Nonlinear increases in extreme temperatures paradoxically dampen extreme humid-heat increases. AGU Fall Meeting, Washington, DC, 2018.

**Coffel, E. D.**, Mankin, J. S., Winter, J. M, Horton, R. M. Seasonal warming amplification and land-air coupling. AGU Fall Meeting, New Orleans, LA, 2017.

**Coffel, E. D.**, Thompson, T. R., Horton, R. M. Climate change and aircraft weight restriction. AGU Fall Meeting, New Orleans, LA, 2017.

**Coffel, E. D. (invited)**, Sherbinin, A. de, Horton, R. M., Lane, K., Kienberger, S., Wilhelmi, O. The Science of Adaptation to Extreme Heat. IAPSO-IAMAS-IAGA Assembly, Cape Town, South Africa, 2017.

**Coffel, E. D.**, Thompson, T. R., Horton, R. M. Climate change and aircraft weight restriction. AMS Annual Meeting, New Orleans, LA, 2016.

**Coffel, E. D.**, Horton, R. M., de Sherbinin, A. M. Rapid rise in heat stress exposure during the 21st century. AGU Fall Meeting, San Francisco, CA, 2015.

**Coffel, E. D.**, Horton, R. M. Climate change and the impact of extreme temperatures on aviation. ICNS 2015, Washington, DC, 2015.

**Coffel, E. D.**, Horton, R. M. Climate change and the impact of extreme temperatures on aviation. AMS Annual Meeting, Phoenix, AZ, 2015.

**Coffel, E. D.**, Horton, R. M. Climate change and the impact of extreme temperatures on aviation. AGU Fall Meeting, San Francisco, CA, 2014.

POSTER  
PRESENTATIONS

**Coffel, E. D.**, Mankin, J. S., Winter, J. M, Horton, R. M. Seasonal warming amplification and land-air coupling. AMS Annual Meeting, Austin, TX, 2018.

**Coffel, E. D.**, Thompson, T. R., Horton, R. M. Climate change and aircraft weight restriction. AMS Annual Meeting, Austin, TX, 2018.

**Coffel, E. D.**, Thompson, T. R., Horton, R. M. Climate change and aircraft weight restriction. AMS Annual Meeting, Seattle, WA, 2017.

**Coffel, E. D.**, Horton, R. M. Geographic extent of future heat waves. AGU Fall Meeting, San Francisco, CA, 2016.

**Coffel, E. D.**, Horton, R. M., de Sherbinin, A. M. Rapid rise in heat stress exposure during the 21st century. Graduate Climate Conference, Woods Hole, MA, 2015.

Morelli T. L, Palmer R., **Coffel E. D.**. Regional collaborations to combat climate change: the climate science centers as strategies for climate adaptation. AGU Fall Meeting, San Francisco, CA, 2014.

**Coffel, E. D.**, Horton, R. M. Climate change and the impact of extreme temperatures on aviation. Columbia First Year Symposium, New York, NY, 2014.

**Coffel, E. D.**. Tornado detection with machine learning. Northwestern Undergraduate Research Symposium, Evanston, IL, 2013.

**Coffel, E. D.**. Development and performance analysis of a cyclone tracker for use in seasonal hurricane prediction. NOAA Hollings Scholarship Program Conference, Silver Spring, MD, 2012.

WORKSHOPS

4. AMS Summer Policy Colloquium. Washington, DC, Jun. 2016.

3. University of Graz “Climate change thresholds” workshop. Graz, Austria, Feb. 2016.
2. Northwest Climate Science Center “Climate boot camp.” Oregon, Aug. 2014.
1. South Central Climate Science Center “Communicating climate change” workshop. Dallas, TX, Feb. 2014.

COMMUNICATION **Media:** Coverage in The New York Times, The Washington Post, The Guardian, NPR, Science, National Geographic, Scientific American, and others.

SERVICE **Co-guest editor:** Environmental Research Letters, special collection on climate change and transportation.

**Journal referee:** Nature Communications, Environmental Research Letters, Geophysical Research Letters, Climatic Change, Journal of Applied Meteorology and Climatology, International Journal of Climatology, and Journal of Air Transport Management.

**Conference session organizer:** Climate change impacts on transportation. AGU Fall Meeting, 2016.

TECHNICAL SKILLS Python, Matlab, C/C++, Java, C#, HTML/CSS, L<sup>A</sup>T<sub>E</sub>X, Linux

PROFESSIONAL SOCIETIES	American Meteorological Society	<b>2013 – Present</b>
	American Geophysical Union	<b>2013 – Present</b>