

Ethan D. Coffel

CONTACT INFORMATION

E-mail: ec2959@columbia.edu
Web: www.ethancoffel.com

RESEARCH INTERESTS

Climate change impacts, extreme weather, atmospheric dynamics, machine learning

EDUCATION

Columbia University, New York, NY
Ph.D Earth and Environmental Science, September 2013 – present

Northwestern University, Evanston, IL
B.A. with honors, Computer Science, Integrated Science, June 2013

Iowa City West High School, Iowa City, IA
Graduated May 2009

PUBLICATIONS

Coffel, E. D., Horton, R. M., De Sherbinin, A., 2016: *Rapid rise in heat stress exposure during the 21st century*. In review at Nature Climate Change.

Lesk, C., **Coffel, E. D.**, DAmato, T., Dodds, K., Horton, R. M., 2016: *Significant threat to North American forests from Southern Pine Beetle with warming winters*. In review at Nature Climate Change.

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.

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.

Coffel, E. D., Horton, R. M., 2015: *Climate change and the impact of extreme temperatures on aviation*. AMS Weather, Climate, and Society.

PRESENTATIONS

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

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

Coffel, E. D., Thompson, T. R., Horton, R. M. Climate change and aircraft weight restriction. AMS Annual Meeting - oral presentation, 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 - poster & oral presentation, San Francisco, CA, 2015.

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

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

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

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

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 - poster presentation, 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.

FUNDING **Coffel, E. D.**, Horton, R. M., 2015. Climate change, humidity, and impacts from extreme heat stress. Lamont Climate Center Grant, \$3,140.

HONORS, AWARDS, SCHOLARSHIPS NSF Graduate Research Fellowship, 2015 – 2018
Columbia Graduate Student Travel Grant, April 2015
Northeast Climate Science Center Fellow, September 2013
NOAA Hollings Scholarship, 2011 – 2013

SELECTED PAST RESEARCH **Geophysical Fluid Dynamics Laboratory**, Princeton, NJ
Student Researcher. Advisers: Dr. Lucas Harris, Dr. Shian-Jiann Lin **June – August, 2012**

- I developed a cyclone tracker in Fortran 90 for use in seasonal hurricane prediction with the GFDL 25-km High Resolution Atmospheric Model (HiRAM).

Northwestern Microgravity Group, Evanston, IL
Co-founder, Co-president. Adviser: Dr. Seth Lichter **June 2010 – Nov. 2011**

- I co-founded an undergraduate team to design and perform an experiment aboard a NASA microgravity aircraft through the Reduced Gravity Student Flight Opportunities Program. We investigated the effect of cathode surface geometry on electrolysis efficiency in microgravity, and we received three grants totaling \$14,000.

CONFERENCES AND WORKSHOPS AMS Summer Policy Colloquium. Washington, DC, Jun. 2016.
University of Graz “Climate change thresholds” workshop. Graz, Austria, Feb. 2016.
Northwest Climate Science Center “Climate boot camp.” Oregon, Aug. 2014.
South Central Climate Science Center “Communicating climate change” workshop. Dallas, TX, Feb. 2014.

OUTREACH AND TEACHING **Columbia University**, New York, NY
Teaching Assistant. Dynamics of climate variability and climate change. **Fall 2014 - 2015**

Northwestern University, Evanston, IL

Instructor. Accelerated Scientific Computing.

Sept. 2012 – March 2013

- I co-taught a two quarter accelerated scientific computing course to Northwestern freshmen. I designed lectures and homework assignments, coordinated grading, and managed four student teaching assistants.
- The course covered Python programming, numerical techniques, agent-based modeling, Monte Carlo simulations, and graphical user interfaces.

Blogger. Northwestern Science in Society.

June 2012 – present

- I write bi-weekly blog posts about science for the general public.

PROFESSIONAL
SOCIETIES

American Meteorological Society
American Geophysical Union