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### Education

- Columbia University**, New York, NY 2019  
Ph.D., Ocean and Climate Physics; Advisor: Dr. Radley Horton  
Dissertation title: "Regional Geographies of Extreme Heat"
- Cornell University**, Ithaca, NY 2014  
B.S., Atmospheric Science, Magna cum laude with Distinction in Research

### Publications

#### **PEER-REVIEWED JOURNAL ARTICLES**

2021

Mukherjee, S., Mishra, A. K., Mann, M. E., and Raymond, C. **Anthropogenic warming and population growth may double US heat stress by the late 21<sup>st</sup> century.** *Earth's Future*. doi:10.1029/2020ef001886.

Teitelbaum, C. S., Sirén, A. P. K., Coffel, E., Foster, J., Frair, J. L., Hinton, J. W., Horton, R. M., Kramer, D. W., Lesk, C., Raymond, C., Wattles, D. W., Zeller, K. A., and Morelli, T. L. **Habitat use as indicator of adaptive capacity to climate change.** *Diversity and Distributions*. doi:10.1111/ddi.13223.

2020

Raymond, C., Matthews, T. K., and Horton, R. M. **The emergence of heat and humidity too severe for human tolerance.** *Science Advances*. doi:10.1126/sciadv.aaw1838.  
[as of July 2021, ranked as the #4 climate paper of 2020 by AltMetric score]

Raymond, C., Horton, R. M., Zscheischler, J., Martius, O., AghaKouchak, A., Balch, J., Bowen, S. G., Camargo, S. J., Hess, J., Kornhuber, K., Oppenheimer, M., Ruane, A. C., Wahl, T., and White, K. **Understanding and managing connected extreme events.** *Nature Climate Change*. doi:10.1038/s41558-020-0790-4.

Zscheischler, J., Martius, O., Westra, S., Bevacqua, E., Raymond, C., Horton, R. M., van den Hurk, B., AghaKouchak, A., Jézéquel, A., Mahecha, M. D., Maraun, D., Ramos, A. M., Ridder, N., Thiery, W., and Vignotto, E. **A typology of compound weather and climate events.** *Nature Reviews Earth and Environment*. doi:10.1038/s43017-020-0060-z.

Massoud, E., Massoud, T., Guan, B., Sengupta, A., Espinoza, V., De Luna, M., Raymond, C., and Waliser, D. **Atmospheric rivers and precipitation in the Middle East and North Africa.** *Water*. doi:10.3390/w12102863.

2016-19

Raymond, C., and Mankin, J. S. (2019). **Assessing present and future coastal moderation of extreme heat in the eastern United States.** *Environmental Research Letters*. doi:10.1088/1748-9326/ab495d.

Raymond, C., Singh, D., and Horton, R. M. (2017). **Spatiotemporal patterns and synoptics of extreme wet-bulb temperature in the contiguous United States.** *Journal of Geophysical Research: Atmospheres*. doi:10.1002/2017jd027140.

Horton, R. M., Mankin, J. S., Lesk, C., Coffel, E., and Raymond, C. (2016). **A review of recent advances in research on extreme heat events.** *Current Climate Change Reports*. doi:10.1007/s40641-016-0042-x.

#### ***JOURNAL ARTICLES ACCEPTED, IN REVIEW, or SUBMITTED***

Raymond, C., Fischer, E. M., Fueglistaler, S., Horton, R. M., Ivanovich, C., Matthews, T. K., Suarez, L., and Zhang, Y. **On the controlling factors for globally extreme humid heat.** *Submitted*.

Ivanovich, C., Anderson, W. B., Horton, R. M., Raymond, C., and Sobel, A. H. **The influence of intraseasonal oscillations on humid heat in the Persian Gulf and South Asia.** *Submitted*.

Matthews, T. K., Byrne, M., Horton, R. M., Murphy, C., Pielke Sr., R. A., Raymond, C., Thorne, P., and Wilby, R. **Latent heat must be visible in climate communications.** *In review*.

Rogers, C. D. W., Ting, M., Li, C., Kornhuber, K., Coffel, E. D., Horton, R. M., Raymond, C., and Singh, D. **Disproportionate increases in population exposure to humid-heat extremes relative to dry-heat.** *In review*.

#### ***BOOK CHAPTERS and CONFERENCE PROCEEDINGS***

Messori, G., Bevacqua, E., Caballero, R., Coumou, D., De Luca, P., Faranda, D., Kornhuber, K., Martius, O., Pons, F., Raymond, C., Ye, K., Yiou, P., and Zscheischler, J. (2020). **Compound climate events and extremes in the mid-latitudes: Dynamics, simulation and statistical characterisation.** *Bulletin of the American Meteorological Society*. doi:10.1175/bams-d-20-0289.1.

Raymond, C., Coumou, D., Foreman, T., King, A., Kornhuber, K., Lesk, C., Mora, C., Perkins-Kirkpatrick, S., Russo, S., and Vijverberg, S. (2019). **Projections and hazards of future extreme heat.** In *The Oxford Handbook of Planning for Climate Change Hazards* [W. Pfeffer, J. Smith, and K. Ebi, Eds.]. Oxford University Press. doi:10.1093/oxfordhb/9780190455811.013.59.

Raymond, C., Matthews, T. K., and Horton, R. M. (2019). **Exceptional heat-humidity combinations increasing faster than expected.** Abstract of presentation at the American Meteorological Society Annual Meeting 2019, Phoenix, AZ. *Bulletin of the American Meteorological Society*, 100 (3), 397-398.

#### **Fellowships and Awards**

<b>PREEVENTS Conference Grant</b> (\$44,792), National Science Foundation	2019
• "Workshop on Correlated Extreme Events"; grant no. 1928623	
<b>Herrenhausen Conf. on Extreme Events Travel Grant</b> (~\$3,000), VW Foundation	2019
<b>Dean's Fellowship</b> (\$78,000 annually), Columbia University	2014-19
<b>Lead Teaching Fellowship</b> (\$2,000), Columbia University	2017-18

<b>Teaching Observation Fellowship</b> (\$2,000), Columbia University	2016-17
<b>Research Grant</b> (\$10,000), Columbia Climate Center	2015
<b>Hollings Scholarship</b> (\$8,000 annually), NOAA	2012-14

### **Professional Service and Activities**

<b>Board Member</b> , NCAR Climate Data Guide Board of Advisors	2020-present
<b>Working-Group Lead</b> , Risk KAN	2019-present
<ul style="list-style-type: none"> <li>• Initiated Compound Events group of the Knowledge Action Network on Emergent Risks &amp; Extreme Events; organize webinars and networking activities for ~200 members.</li> </ul>	
<b>Mentor</b> , NASA Data Intensive Research and Education Center for STEM	2019-present
<b>Steering-Committee Member</b> , Workshop on Compound Weather and Climate Events	2020-21
<ul style="list-style-type: none"> <li>• Planned and chaired sessions at 200-person online workshop in January 2021.</li> </ul>	
<b>Session Co-Chair</b> , AGU Fall Meeting	2019-21
<ul style="list-style-type: none"> <li>• “Correlated climate extremes” (2019, 2020); “Compounding climate extremes” (2021)</li> </ul>	
<b>Workshop Co-Organizer</b> , Workshop on Correlated Extreme Events	2017-19
<ul style="list-style-type: none"> <li>• Developed concept and structure, invited speakers, and organized logistics for 175-person workshop at Columbia University in May 2019.</li> </ul>	
<b>Session Co-Chair</b> , EGU General Assembly 2019	2018-19
<ul style="list-style-type: none"> <li>• "Extreme heat events: processes, impacts and adaptation"</li> </ul>	
<b>Review-Panel Member</b> , Lamont-Doherty Chevron Student Initiative Fund	2016-19
<b>Member</b> , AMS Student Conference 2016 Planning Committee	2015-16
<b>Reviewer</b> for journal manuscripts: approximately 6 per year	
<b>Reviewer</b> for proposals: NSF Climate & Large-scale Dynamics; JPL Data Science Pilot program	

### **Teaching Experience and Activities**

<b>Teaching Assistant</b> , Dinosaurs and the History of Life	Spring 2017
<b>Teaching Assistant</b> , Dynamics of Climate Variability and Climate Change	Fall 2016
<b>Teaching Assistant</b> , Earth’s Climate System [ <i>lab course</i> ]	Spring 2016
<b>Microteaching Facilitator</b> , Columbia University	2017-19
<b>Member</b> , Columbia University STEM Education Research Journal Club	2017-19

### **Presentations as Lead Author/Presenter**

“Sharpening the view of extreme heat stress.” Extreme Value Analysis Conference 2021 (Online). Jun. 2021. *Invited*.

“Extreme heat-humidity combinations and their relationship to hydroclimatic extremes.” NASA Jet Propulsion Laboratory, Terrestrial Hydrology Group seminar (Online). Mar. 2021.

“Investigating the controlling factors for global heat-humidity extremes.” Portland State University, Climate Science Lab seminar (Online). Jan. 2021. *Invited*.

“Extreme heat-humidity combinations and their relationship to hydroclimatic extremes.” Workshop on Compound Weather and Climate Events (Online). Jan. 2021. *Invited*.

“Investigating the controlling factors for global heat-humidity extremes.” AGU Fall Meeting 2020 (Online). Dec. 2020.

- “Investigating the controlling factors for global heat-humidity extremes.” Workshop on Mid-Latitude Compound Climate Extremes (Online). Sep. 2020. *Invited.*
- “Regional geographies of extreme heat.” NASA Jet Propulsion Laboratory, Center for Climate Sciences seminar (Pasadena, CA). Jan. 2020. *Invited.*
- “Climatology and dynamics of disruptive springtime temperature sequences.” AGU Fall Meeting 2019 (San Francisco, CA). Dec. 2019.
- “Dynamics of disruptive springtime temperature sequences.” Herrenhausen Conference on Extreme Events (Hanover, Germany). Oct. 2019.
- “Regional geographies of extreme heat.” NOAA Geophysical Fluid Dynamics Laboratory, informal seminar (Princeton, NJ). Jun. 2019. *Invited.*
- “Regional geographies of extreme heat.” Lawrence Berkeley National Laboratory, informal seminar (Berkeley, CA). Jan. 2019. *Invited.*
- “Exceptional heat-humidity combinations in the observational record.” AGU Fall Meeting 2018 (Washington, DC). Dec. 2018.
- “Spatiotemporal patterns and synoptics of extreme wet-bulb temperature in the contiguous United States.” EGU General Assembly 2018 (Vienna, AT). Apr. 2018.
- “Climatological occurrence and projected changes of cold-shore days along the eastern coast of the United States.” EGU General Assembly 2018 (Vienna, AT). Apr. 2018.
- “Parameterization and projection of sea breezes in New York City.” Rutgers Climate Symposium 2017 (New Brunswick, NJ). Nov. 2017.
- “Sea breezes and New York City heat waves: interactions, effects, and predictability.” AMS Annual Meeting 2017 (Seattle, WA). Jan. 2017.
- “Co-occurrence of extreme temperature and moisture over the continental United States.” AMS Annual Meeting 2017 (Seattle, WA). Jan. 2017.
- “Predictability and spatial characteristics of New-York-City-area heat waves.” AGU Fall Meeting 2016 (San Francisco, CA). Dec. 2016.
- “Changes in precipitation extremes under two climate-change scenarios.” AMS Annual Meeting 2014 (Atlanta, GA). Jan. 2014.

## **Science Communication**

### **Publications**

- The Conversation article (with T. Matthews) *May 2020*  
 • Article title: "Global warming now pushing heat into territory humans cannot tolerate"  
 New York Times op-ed (with E. Coffel and R. Horton) *Oct 2018*  
 • Article title: "Heat and humidity are a killer combination"

### **Talks**

- Invited panelist for Science Facebook Live event on ‘Cooling in a warming world’ *Dec 2020*  
 AGU Pop-Up Talk on 'The role of a scientist in the 21st century’ *Dec 2018*

### **Interviews**

- Wall Street Journal • New York Times Magazine • Live Science *Jul 2021*  
 CBS News *Jun 2021*  
 California Council on Science and Technology *May 2021*  
 Yale Climate Connections *Feb 2021*  
 Climate Central *Jul 2020*

AAAS • National Geographic • Quartz • Science • Scientific American • Thomson Reuters •  
Washington Post • Weather.com • Wunderground  
CBC Radio

*May 2020*  
*Jul 2017*

### **Professional Memberships**

**American Meteorological Society, 2011-pres. • American Geophysical Union, 2014-pres.**

### **Languages**

**Programming:** MATLAB • Python • R

**Foreign:** French • Spanish