

Lucas R. Vargas Zeppetello

(415) 418-4326 || lzeppetello@fas.harvard.edu || vargaszeppetello.weebly.com

Postdoctoral Appointment:

James S. McDonnell Foundation postdoctoral scholar at the Harvard University Department of Earth and Planetary Sciences.

— Advising committee: Peter Huybers, Kaighin McColl, Missy Holbrook

Education:

PhD. Atmospheric Sciences, University of Washington, October 2021

— Thesis committee: David Battisti, Marcia Baker, Abigail Swann, Dennis Hartmann, Brain Harvey

B.S. Applied Physics Columbia University (Cum Laude), Minor: Religion, 2016

Honors:

Harvard University Center for the Environment (HUCE) Honorary Fellow

James S. McDonnell Foundation Fellowship Awardee (2022-2024)

NSF Alliance for Graduate Education and the Professoriate (AGEP) Research Exchange Fellow (2019)

Participant in Advanced Climate Dynamics Course in Finse, Norway (2018)

National Science Foundation Graduate Research Fellowship Program Awardee (2016-2019)

Achievement Rewards for College Scientists Graduate Fellowship Awardee (2016-2019)

U.W. Graduate Opportunities and Minority Achievement Program Fellowship Awardee (2016)

Peer-Reviewed Publications:

Vargas Zeppetello, L.R., Raftery, A.E, Battisti, D.S. (2022): Probabilistic projections of increased heat stress driven by climate change. *Communications Earth & Environment* 3, (183), doi: 10.1038/s43247-022-00524-4

Vargas Zeppetello, L.R., Battisti D.S., Baker, M.B. (2022): The Physics of Heat Waves: What Causes Extremely High Summertime Temperatures? *Journal of Climate*, 35, (7), 2231-2251, doi: 10.1175/JCLI-D-21-0236.1

Vargas Zeppetello, L.R., S.C. Cook-Patton, L.A. Parsons, N.H. Wolff, T. Kroeger, J.T. Spector, Battisti D.S., A. Balakumar, J. Bettles, Y.J. Masuda (2022): Consistent cooling benefits of silvopasture in the tropics. *Nature Communications*, 13, 708, doi: 10.1038/s41467-022-28388-4.

Parsons, L.A, J. Jung, Y.J. Masuda, **Vargas Zeppetello, L.R.,** N.H. Wolff, T. Kroeger, D.S. Battisti, J.T. Spector (2021): Tropical Deforestation Accelerates Local Warming and Loss of Safe Outdoor Working Hours. *One Earth*, 4, 1-11, doi: 10.1016/j.oneear.2021.11.016.

Wolff, N., **Vargas Zeppetello, L.R.,** Parsons, L.A., I. Aggraeni, D.S. Battisti, K.L. Ebi, E.T. Game, T. Kroeger, Y.J. Masuda, and J.T. Spector (2021): The Effect of Deforestation and Climate Change on All-Cause Mortality and Unsafe Work Conditions due to Heat Exposure in Berau, Indonesia: A Modelling Study. *Lancet Planetary Health*, doi: 10.1016/S2542-5196(21)00279-5.

Vargas Zeppetello, L.R., Battisti, D.S. (2020): Projected Increases in Summertime Temperature Variance are Driven by Local Thermodynamics. *Geophysical Research Letters* 47 (19) e2020GL090197, doi: 10.1029/2020GL090197

Vargas Zeppetello, L.R., Parsons, L.A., Naylor, R.A., J.T. Spector, Battisti, D.S., Y.J. Matsuda, N. Wolff (2020): Large Scale Tropical Deforestation Drives Extreme Warming. *Environmental Research Letters* 15, 084012, doi: 10.1088/1748-9326/ab96d2

Vargas Zeppetello, L.R., Battisti D.S., Baker M.B (2020): A New Look at Land Surface Summertime Temperature Variance. *Journal of Climate*, 33 (13) 5465-5477, doi: 10.1175/JCLI-D-19-0887.1

Vargas Zeppetello, L.R., Tétreault-Pinard, E., Battisti, D.S., Baker, M.B. (2020): Identifying the Sources of Continental Summertime Temperature Variance Using a Diagnostic Model of Land-Atmosphere Interactions. *Journal of Climate*, 33 (9) 3547–3564, doi: 10.1175/JCLI-D-19-0276.1

Chan, D., Cobb, A., **Vargas Zeppetello, L.R.,** Battisti D.S., P. Huybers (2020): Summertime Temperature Variability Increases with Local Warming in Midlatitude Regions. *Geophysical Research Letters* 47 (13) e2020GL087624, doi: 10.1029/2020GL087624.

Vargas Zeppetello, L.R., Battisti, D.S., Baker, M.B. (2019): The Origin of Soil Moisture Evaporation “Regimes.” *Journal of Climate*, 32 (20) 6939 - 6960 doi: 10.1175/JCLI-D-19-0209.1

Vargas Zeppetello, L. R., Donohoe, A., Battisti, D.S. (2019): Does Surface Temperature Respond to or Determine Downwelling Longwave Radiation? *Geophysical Research Letters*, 46, 2781–2789. doi: 10.1029/2019GL082220

Voigt, A., M. Biasutti, J. Scheff, J. Bader, S. Bordoni, F. Codron, R.D. Dixon, J. Jonas, S.M. King, N.P. Klingaman, R. Leung, J. Lu, B. Mapes, E.A. Maroon, S. McDermid, J. Park, R. Roehrig, B.E.J. Rose, G.L. Russell, J. Seo, T. Toniazzo, H. Wie, M. Yoshimori, **Vargas Zeppetello, L.R.** (2016): The Tropical Rain Belts with an Annual Cycle and a Continent Model Intercomparison Project: TRACMIP. *J. Adv. Model. Earth Syst* 8 (4): 1868-91. doi: 10.1002/2016MS000748.

Other Publications:

Contributed Analysis for “Extreme Heat Will Change Us” *New York Times*, November 2022

Vargas Zeppetello, L. R. (2020): Don’t @ me: What happened when climate skeptics misused my work, *Eos*, 101, doi: 10.1029/2020EO140098

Selected Presentations:

Ocean & Climate Seminar Series at LDEO, January 2023

AGU December 2022

Georgia Tech Earth and Atmospheric Sciences Seminar, October 2022

Colorado State University Ecosystem Science and Sustainability Seminar, April 2022

Stanford Earth Science Seminar, April 2022

U.C. Berkeley Environmental Science, Policy, and Management Seminar, April 2022

U.C. Berkeley Earth and Planetary Science Seminar, March 2022

Caltech Environmental Science and Engineering Seminar, March 2022

Scripps Institute of Oceanography Climate Journal Club, Jan. 2022

Canadian Meteorological and Oceanographic Society Congress, June 2021

U.S.C. Earth Science Seminar, Mar. 2021

CESM Land Model Working Group, Feb. 2021
Australian Research Council Centre of Excellence for Climate Extremes, Feb. 2021
U.W. Program on Climate Change Spring Symposium, May 2020
U.W. Atmospheric Sciences department seminar, May 2020
The Nature Conservancy, April 2020
Harvard University ClimaTea seminar, Jan. 2020
American Geophysical Union Fall Meeting, Dec. 2019
NSF AGEP Research Exchange, Stanford University, Oct. 2019
Advanced Climate Dynamics Reunion, University of Bergen, Mar. 2019
Master's defense, University of Washington, Nov. 2018

Teaching:

Guest Lecture for *Planet in Peril* - "Climate Change and Heat Stress" (Winter 2022)
Teaching Fellow for *Human Environmental Data Science: Agriculture, Conflict, and Health* (Fall 2022)
Course Coordinator for *Blind Spots: Atmospheric Science Research, Diversity, and an Evolving Discipline* (Fall 2021)
Guest Lecture in *Exploring Atmospheric Sciences* – "Climate Change and the Biosphere" (2020)
Course Coordinator for *Racial Justice and Equity in Environmental Science and Beyond* (2020)
Guest Lecture in *Climate and Climate Change* – "Plants and the Global Climate" (2019)
Teaching Assistant for *Weather 101* (2018)

Academic Service:

Plants and Climate Reading Group Co-Leader (2023-)
Department Outreach Coordinator, U.W. Atmospheric Sciences (2019 - 2020)
College of the Environment Diversity Committee, Atmospheric Sciences Representative (2018 - 2020)
Growing our Own, U.W. Office of Minority Affairs and Diversity (2017)

Other Community Service:

350 Seattle Leadership Team (2019 - 2021)
Steering Committee Member, Alliance for Jobs and Clean Energy (2019 - 2020)
Math Tutor, Minds Matter Seattle Chapter (2018 - 2019)

Peer Review:

Science
Journal of Climate
Journal of Hydrometeorology
Nature Communications
NPJ Climate and Atmospheric Science
Earth's Future
Geophysical Research Letters
One Earth
Communications Earth & Environment
Weather and Climate Dynamics
Journal of Geophysical Research Atmospheres
Agricultural and Forest Meteorology
Journal of Applied Meteorology & Climatology

Grants Applied For:

NOAA MAPP Science for the 21st Century: Western U.S. Hydroclimate (2022)

- Proposal Title: Can understanding interannual temperature variability improve drought predictions in the American West? (Lead PI)

NOAA MAPP Climate Futures: Projections for Societally-Relevant Problems (2022)

- Proposal Title: How will summertime temperature variability change in a warmer world? Identifying robust predictions in light of model biases in natural variability. (Co-PI with Aaron Donohoe)