Luke A. Parsons | Climate Scientist

Global Science, The Nature Conservancy

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Education

University of Arizona
Ph.D. in Geosciences *2012–2017*
Research Focus: Climate dynamics, climate change, paleoclimate, drought

Brown University
B.A. (Cum Laude) Geology and Spanish *2002–2006*
Research Focus: Pre-instrumental climate reconstructions using lake sediments

Research Experience

The Nature Conservancy, Global Science
Associate Senior Climate Scientist *2026–Current*
- Climate change impacts, climate risk assessment, Nature-Based Solutions (NBS)

The Nature Conservancy, Global Science
Applied Climate Modeling Scientist *2023–2026*

Duke Nicholas School of the Environment
Research Scientist and Lecturer *2020–2023*
- Climate change, mitigation, and air pollution impacts on human health, labor, economy
- Quantitative analysis of climate model (CMIP6) and reanalysis data
- Estimation of health impacts of wildfire-specific $PM_{2.5}$ using GEOS-Chem
- Primary lecturer in undergraduate and graduate climate classes

University of Washington
Washington Research Foundation Postdoctoral Fellow *2018–2020*
- Paleoclimate data assimilation; climate variability, drought dynamics in climate models
- Climate and land use change impacts on human health and the environment
- Competitive fellowship awarded $277,500 for three years of postdoctoral research

Department of Geosciences, University of Arizona
Postdoctoral Research Associate *2017–2018*
- Drought dynamics in Southwestern North America using clustering algorithms
- Quantitative analysis of CESM Ensemble, CMIP5 ensemble, instrumental data

Department of Geosciences, University of Arizona
NSF Graduate Research Fellow *2012–2017*
- Climate model, instrumental, paleoclimate data reconstruction and analysis
- Competitive NSF Fellowship awarded $32,000/year for three years of research

Water Science Center, U.S.G.S.
Hydrologist (NAGT Fellow) *2006–2007*
- Groundwater tracer experiments and analysis

Paleoclimate Laboratory, Brown University
Undergraduate Researcher *2005–2006*
- Paleoclimate reconstructions using lake sediments

Publications

Peer-Reviewed Journal Articles

40. Mazumder, L. T., M. Kaur, P. Shyamsundar, **L. Parsons**, J. Gambo, J. Erbaugh (2026), Influence of frameworks and data on climate risk estimates: A county-level analysis from Kenya, *Theoretical and Applied Climatology*, 157, 767, DOI: 10.1007/s00704-026-06608-x.

39. Hughes, F., **L. Parsons**, B. Alhanti, J. Simon, P. Kasibhatla, D. Shindell, T. Ohnuma, K. Ragunathan, H. Montgomery, V. Krishnamoorthy (2026), The impact of wildfire smoke on acute cardiovascular and respiratory illness in the US, *Scientific Reports*, DOI: 10.1038/s41598-026-72845-9.

38. Heinrich, V., A. Holcomb, et al., including **L. A. Parsons** (2026), A meta-analysis of carbon losses and gains from tropical moist forest degradation and regeneration, *Science Advances*, 12, eadz1923, DOI: 10.1126/sciadv.adz1923.

37. McDonald, R. I., T. C. Chakraborty, T. A. Endreny, **L. A. Parsons**, M. Marsagishvili, M. Esperon-Rodriguez (2026), Trees halve urban heat island effect globally but unequal benefits only modestly mitigate climate-change warming, *Nature Communications*, 17, 3569, DOI: 10.1038/s41467-026-71825-x.

36. **Parsons, L. A.**, J. W. Baldwin, G. Guzman-Echavarria, O. Jay, P. Kalmus, H. Staudmyer, J. K. Vanos, N. H. Wolff (2026), Intensifying global heat threatens livability for younger and older adults, *Environmental Research: Health*, 4(1), 015013, DOI: 10.1088/2752-5309/ae3c3a.

35. Reek, J. E., C. M. Zohner, G. R. Smith, S. C. Cook-Patton, P. De Frenne, P. D'Odorico, M. G. Floriancic, R. B. Jackson, J. A. Jones, J. W. Kirchner, M. Laguë, Y. Liang, Y. J. Masuda, R. I. McDonald, **L. A. Parsons**, B. S. Probst, J. T. Spector, T. A. P. West, N. H. Wolff, F. Zellweger, T. W. Crowther (2026), More than mitigation: The role of forests in climate adaptation, *Science*, 391(6786), DOI: 10.1126/science.ads4361.

34. **Parsons, L. A.**, J. T. Erbaugh, F. Lo, R. McCrary, S. R. Raman, D. Shindell, et al. (2026), Climate change and disparities in extreme heat exposure for socially vulnerable areas in the contiguous United States, *Earth's Future*, 14, e2025EF006463, DOI: 10.1029/2025EF006463.

33. Mishra, V., D. S. Chuphal, Q. Kong, C. Raymond, **L. Parsons**, R. Kumar, et al. (2025), Migrant laborers in India face increased heat stress driven by climate warming and ENSO variability, *Earth's Future*, 13, e2025EF006167, DOI: 10.1029/2025EF006167.

32. Luo, X., S. Deem Y. Okumura, **L. A. Parsons** (2024), Nonstationary Teleconnections Over North America Revealed in Paleoclimate Data Assimilation Reconstructions Spanning the Last Millennium, *JGR Atmospheres*, DOI: 10.1029/2024JD041150.

31. Shindell, D., I. Petropoulos, G. Faluvegi, **L. A. Parsons**, M. Bergin (2024), The Impact of Decarbonization on Particulate Soiling of Solar Panels, *ACS ES&T Air*, DOI: 10.1021/acsestair.4c00105.

30. Hughes, F., **L. A. Parsons**, J. Levy, D. Shindell, B. Alhanti, T. Ohnuma, P. Kasibhatla, H. Montgomery, V. Krishnamoorthy (2024), Impact of Wildfire Smoke on Acute Illness (Review), *Anesthesiology*, DOI: 10.1097/ALN.0000000000005115.

29. Shindell, D., et al.... **L. A. Parsons** (2024), The Methane Imperative, *Frontiers in Science*, DOI: 10.3389/fsci.2024.134977

28. Masuda, Y. J., **L. A. Parsons**, J.T. Spector, D. Battisti, B. Castro, J.T. Erbaugh, E.T. Game, T. Garg, P. Kalmus, T Kroeger, V. Mishra, D. Shindell, M. Tigchelaar, N. Wolff, L R. Vargas Zeppetello, (2024), Impacts of warming on outdoor worker well-being in the tropics and mitigation options., *One Earth*, DOI: 10.1016/j.oneear.2024.02.001.

27. Shindell, D., G. Faluvegi, E. Nagamoto, **L. A. Parsons,** Y. Zhang (2024), Reductions in premature mortality from heat and air pollution in South Asia, China, and the US under decarbonization, *Proceedings of the National Academy of Sciences (PNAS)*, DOI: 10.1073/pnas.2312832120.

26. Shindell, D., R. Hunter, G. Faluvegi, **L. A. Parsons** (2024), The effects of neighborhood-level versus city-level acclimatization on premature deaths due to heat exposure within US cities, *GeoHealth*, DOI: 10.1029/2023GH000970.

25. **Parsons, L. A.**, D. Shindell, G. Faluvegi, E. Nagamoto (2023), Geophysical uncertainties in air pollution exposure and benefits of emissions reductions for global health, *Earth's Future*, DOI: 10.1029/2023EF003839.

24. **Parsons, L. A.**, F. Lo, A. Ward, D. Shindell, S. Raman (2023), Higher temperatures in socially vulnerable US communities increasingly limit safe use of electric fans for cooling, *GeoHealth*, DOI: 10.1029/2023GH000809.

23. Shindell, D., **Parsons, L. A.**, G. Faluvegi, K. Hicks, J. Kutlenstierna, C. Heaps (2023), The important role of African emissions reductions in projected local rainfall changes, *NPJ Climate and Atmospheric Science*, DOI: 10.1038/s41612-023-00382-7.

22. Shindell, D., G. Faluvegi, **L. A. Parsons,** E. Nagamoto, J. Chang (2022), Premature deaths in Africa due to particulate matter under high and low warming scenarios, *GeoHealth*, 6, e2022GH000601, DOI: 10.1029/2022GH000601.

21. Luo, X., S. Dee, S. Stevenson, Y. Okumura, N. Steiger, **L. A. Parsons** (2022), Last millennium ENSO diversity and North American teleconnections: new insights from paleoclimate data assimilation, *Paleoceanography and Paleoclimatology*, DOI: 10.1029/2021PA004283.

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

19. **Parsons, L. A.**, Y. Masuda, T. Kroeger, D. Shindell, N. Wolff, J. Spector (2022), Global labor loss due to humid heat exposure underestimated for outdoor workers, *Environmental Research Letters*, DOI: 10.1088/1748-9326/ac3dae.

18. **Parsons, L. A.**, D. Shindell, M. Tigchelaar, Y. Zhang, J. Spector (2021), Increased labor losses and decreased adaptation potential in a warmer world, *Nature Communications*, DOI: 10.1038/s41467-021-27328-y.

17. **Parsons, L. A.**, J. Jung, T. Kroeger, Y. Masuda, L. Vargas Zeppetello, N. Wolff, D. Battisti, J. Spector, (2021), Tropical deforestation accelerates local warming and loss of safe outdoor working hours, *One Earth*, DOI: 10.1016/j.oneear.2021.11.016.

16. Wolff, N., L. Vargas Zeppetello, **L. A. Parsons**, I. Aggraeni, D. Battisti, E. Game, T. Kroeger, Y. Masuda, J. Spector (2021), The effect of land use and climate change on heat exposure, health, and well-being in Indonesia, *Lancet Planetary Health*, DOI: 10.1016/S2542-5196(21)00279-5.

15. Shindell, D., M. Ru, Y. Zhang, K. Seltzer, G. Faluvegi, L. Nazarenko, G. A. Schmidt, **L. A. Parsons**, A. Challapalli, L. Yang, A. Glick (2021), Temporal and spatial distribution of health, labor, and crop benefits of climate change mitigation in the US, *Proceedings of the National Academy of Sciences (PNAS)*, DOI: 10.1073/pnas.2104061118.

14. Wills, R. C. J., K. C. Armour, D. S. Battisti, C. Proistosescu, **L. A. Parsons** (2021), Slow modes of global temperature variability and their impact on climate sensitivity estimates, *Journal of Climate*, DOI: 10.1175/JCLI-D-20-1013.1.

13. **Parsons, L. A.**, D. Amrhein, S. Sanchez, R. Tardif, M. K. Brennan, G. Hakim, (2021), Do multi-model ensembles improve reconstruction skill in paleoclimate data assimilation?, *Earth and Space Science*, DOI: 10.1029/2020EA001467.

12. D. Amrhein, G. Hakim, **L. A. Parsons,** (2020), Quantifying structural uncertainty in paleoclimate data assimilation with an application to the Last Millennium, *Geophys. Res. Lett.*, DOI: 10.1029/2020GL090485.

11. **Parsons, L. A.,** (2020), Implications of CMIP6 projected drying trends for 21^{st} century Amazonian drought risk, *Earth's Future*, DOI: 10.1029/2020EF001608.

10. Vargas Zeppetello, L., **L. A. Parsons**, J. Spector, R. Nayolor, D. Battisti, Y. Masuda, N. Wolff, (2020), Large scale tropical deforestation drives extreme warming, *Environmental Research Letters*, DOI: 10.1088/1748-9326/ab96d2

9. **Parsons, L. A.**, M. K. Brennan, R. Wills, C. Proistosescu, (2020), Magnitudes and spatial patterns of interdecadal temperature variability in CMIP6, *Geophys. Res. Lett.*, DOI: 10.1029/2019GL086588.

8. **Parsons, L. A.**, G. Hakim, (2019), Local regions associated with interdecadal global temperature variability in the Last Millennium Reanalysis and CMIP5 Models, *Journal of Geophysical Research Atmospheres*, DOI: 10.1029/2019JD030426.

7. **Parsons, L. A.**, S. Coats (2019), Ocean-atmosphere trajectories of extended drought in Southwestern North America, *Journal of Geophysical Research Atmospheres*, DOI: 10.1029/2019JD030424.

6. **Parsons, L. A.**, S. Coats, J. Overpeck (2018), The continuum of drought in Southwestern North America, *Journal of Climate*, DOI: 10.1175/JCLI-D-18-0010.1.

5. **Parsons, L. A.**, S. LeRoy, J. Overpeck, M. Bush, G.M. Cárdenes-Sandí, S. Saleska (2018), The threat of multi-year drought in western Amazonia, *Water Resources Research*, DOI: 10.1029/2017WR021788.

4. Stevenson, S., J. Overpeck, J. Fasullo, S. Coats, **L. A. Parsons**, B. Otto-Bliesner, T. Ault, G. Loope, J. Cole (2018), Climate variability, volcanic forcing, and last millennium hydroclimate extremes, *Journal of Climate*, DOI: 10.1175/JCLI-D-17-0407.1.

3. **Parsons, L. A.**, G. Loope, J. Overpeck, T. Ault, R. Stouffer, J. Cole (2017), Temperature and precipitation variance in CMIP5 simulations and paleoclimate records of the past millennium, *Journal of Climate*, DOI: 10.1175/JCLI-D-16-0863.1.

2. Dee, S. G., **L. A. Parsons**, G. Loope, J. Overpeck, T. Ault, J. Emile-Geay (2017), Improved spectral comparisons of paleoclimate models and observations via proxy system modeling: Implications for multi-decadal variability, *Earth and Planetary Science Letters*. DOI: 10.1016/j.epsl.2017.07.036

1. **Parsons, L. A.**, J. Yin, J. T. Overpeck, R. J. Stouffer, and S. Malyshev (2014), Influence of the Atlantic Meridional Overturning Circulation on the monsoon rainfall and carbon balance of the American tropics, *Geophys. Res. Lett.*, 41, DOI: 10.1002/2013GL058454.

Journal Articles In Review, Submitted, and In Preparation

1. Singh, D., T. Matthews, L. L. Turek-Hankins, **L. A. Parsons**, K. L. Ebi, K. J. Mach, I. Ajibade, J. Doss-Gollin, E. Fischer, J. Justine, T. E. Morakinyo, N. Mueller, A. Laverty, R. M. Horton, M. Ting (submitted *Nature Reviews Earth and Environment*), Enhancing livability in a hotter world.
2. **Parsons, L. A.**, D. Shindell, E. Nagamoto, J. Chang, G. Faluvegi, T. Kroeger (in preparation *NPJ Climate and Atmospheric Science*), Climate change mitigation benefits for labor could exceed mitigation costs.

Other Edited/Reviewed Contributions

Intergovernmental Reports

1. FAO, SEI, CI & TNC (2025), Climate and ecosystem service benefits of forests and trees for agriculture, Rome, Stockholm, and Arlington, 176 p., ISBN: 978-92-5-140296-2, DOI: 10.4060/cd7599en. Chapter 5: Benefits of tropical forests for rural workers (lead authors: N. H. Wolff, **L. A. Parsons**, Y. J. Masuda, J. T. Spector, L. Vargas Zeppetello, O. Crompton, R. I. McDonald, T. Kroeger, J. T. Erbaugh, E. T. Game, D. S. Battisti, R. Flach).
2. Climate and Clean Air Coalition (CCAC)/UN Environment Programme (UNEP)/African Union Commission (AUC), (2022), Integrated Assessment of Air Pollution and Climate Change for Sustainable Development in Africa, https://wedocs.unep.org/20.500.11822/41223.

Media Features and Coverage of Research

2023: **BBC:** *'Heatwave: Is India ready to deal with extreme temperatures?'*
2023: **The Economist:** *'At the limits of human endurance'*
2023: **The Times of India:** *'India at the bullseye of climate change's heat impacts on workers'*
2022: **AFP:** *'Climate change worsening toll of humid heat on outdoor workers'*
2022: **ABC Australia:** *'Work is getting harder and hotter for Pacific Islanders'*
2022: **Ouest-France:** *'Réchauffement climatique: il va faire trop chaud pour travailler'*
2022: **Heidi News:** *'Le changement climatique menace les travailleurs d'extérieur'*
2022: **Olive Oil Times:** *'Global Agriculture Loses Billions of Working Hours to Heat'*
2021: **Anthropocene:** *'In the face of climate change, it's time to rethink regular work hours'*
2021: **The Guardian:** *'Deforestation making outdoor work unsafe for millions, says study'*
2021: **New Scientist:** *'Outdoor workers are losing hours due to overheating'*
2021: **Barron's:** *'Deforestation, Climate Change Making Outdoor Work Unsafe: Study'*
2021: **Reuters:** *'Global warming of 3C could cost $1.6 trillion a year in lost labour'*
2021: **Phys.org:** *'As Earth warms, safe times for outdoor work will shrink'*
2021: **Times of India:** *'City may have to shift working hours towards morning or evening'*
2021: **Hindustan Times:** *'India facing highest labour work hour loss due to heat stress'*
2021: **Publico:** *'La crisis climática y el calor extremo generarán pérdidas en empleo'*
2021: **Mongabay:** *'In a warming world, deforestation turns the heat deadly, study finds'*
2021: **The Ecologist:** *'Deforestation harms vulnerable communities'*

Grants and Fellowships (Awarded)

Duke Climate + Health: Wildfire Smoke Exposure Response (WiSER) *2023–2025*
$1,400,000 for three years of research funding to develop wildfire-specific exposure response functions by combining health data from Singapore, Brazil, and the US with GEOS-Chem model simulations.

Washington Research Foundation (WRF) Postdoctoral Fellowship *2018–2020*
$277,500 for three years of postdoctoral funding to conduct climate research.

National Science Foundation Graduate Research Fellowship Program (NSF GRFP) *2013–2016*
$32,000/year for three years to conduct independently funded drought research.

Grants (Applied)

Duke Climate Research Innovation Seed Program *2023*
Title: *Identifying and communicating geographic extent of safe, low-cost cooling options for socially vulnerable communities in the United States*. $17,450 for one year of climate/health and stakeholder engagement research

NIH Climate Change and Health Initiative *2022*
Title: *Identifying and communicating geographic extent of safe, low-cost cooling options for older adults in a warming world*. $1,192,482 for three years of climate and health, stakeholder engagement research

Scholarships, Honors, and Awards

2025: **Outstanding Reviewer for Geophysical Research Letters**: American Geophysical Union (AGU)
2024: **Best Research Paper in GeoHealth Award**: Best research paper in journal in 2023

2019–2021: **ND Awards**: Honorable Mention for photographs

2016: **Montgomery Award**: Best Presentation in Conference, Univ. of Arizona. $2,000 one-time award for best oral presentation in multi-department conference

2014: **Galileo Circle Award**: Excellence in Scientific Research, Univ. of Arizona. $1,500 one-time award for excellence in graduate student research

2013–2014: **Chernoff Scholarship and Kartchner Caverns Scholarships**, Univ. Arizona. $1,500 one-time scholarships for summer research

2013: **Carson Scholarship**: Carson Scholars Program, Univ. Arizona. $5,000 one-time scholarship for excellence in science communication

2012: **Silver Medal**: Ranked top 50 in Epson International Photography Awards

2006: **Undergraduate Geology Research Award**: Brown University

Teaching Experience

Professional Development (ATMOS 3000), Atmospheric Sciences, Univ. of Utah
Guest Lecturer *2024–2025*
Invited to guest lecture for class of Atmospheric Science and Earth & Environmental Science majors

Climate and Society, Duke Nicholas School of the Environment
Primary Lecturer *2021–2022*
Create lectures, homework assignments, exams, projects, hold office hours, manage TAs. Teach class of 30-40 undergraduate and graduate students (two 1.5 hr. classes/week)

Exploring Atmo. Sciences, Atmospheric Sciences, Univ. of Washington
Guest Lecturer *2019–2021*
Invited to guest lecture once per semester for class of 50-80 undergraduate students

Earth Climate System, Earth and Space Sciences, Univ. of Washington
Guest Lecturer *2019*
Invited to guest lecture for class of 40-50 undergraduate students

Global Change, Department of Geosciences, Univ. of Arizona
Teaching Assistant *2016*
Grade assignments and help lead group discussions for class of 40-60 undergraduates

National Outdoor Leadership School (NOLS)
Faculty/Instructor *2011–2014*
Lead 30-day backpacking trips with 12 students in the Wind River Range

Newton Country Day School
Faculty/Teacher *2007–2012*
Create lectures, laboratory and homework assignments, exams, projects. Teach AP Environmental Science, Geology, Spanish classes, each with 15-20 students.

Volunteer and Outreach

Master Naturalist Climate Class
Instructor *2019–2025*
Teach class of ∼30 adults about climate basics, warming impacts in New Mexico.

Duke University Postdoctoral Association
Diversity Committee Co-Chair *2021–2023*
Organize, distribute, analyze postdoctoral DEI survey. Facilitate DEI trainings for postdocs

2022: **Older Adults and Climate Change – Aging in Place**. Panel discussion on perceptions and impacts of climate change on older adults. Follow-up article: AgingInPlace.org/older-adults-and-climate-change/.

2022: **Preparing for the next heat wave- Duke Media Briefing**. Discuss costs of extreme heat with Duke media and Dr. Ashley Ward.

2022: **Media Training for Indian Journalists in Heat Stress in India Workshop**. Teach journalists about heat stress metrics, heat exposure, labor impacts.

Atmospheric Sciences Diversity and Inclusion Group
Facilitator *2018–2020*
Facilitate department diversity and inclusion meetings.

2019: **Docent Training at Santa Fe Botanical Gardens**. Teach museum docents courses about climate change and drought.

Mentoring

The Nature Conservancy
Mentor Scientists *2024–Current*
Monthly meetings with scientists at TNC.

Duke University
Mentor Masters and Undergraduate Students *2020–Current*
Teach four students to use Python/Xarray and study climate impacts. Outcomes: Undergraduate thesis for one student, students co-authored publications

University of Washington
Mentor Undergraduate and Graduate Students *2018–2020*
Discuss student research and presentations, review NSF GRFP grant applications. Outcomes: successful NSF GRF proposals were funded

University of Arizona
Mentor Undergraduate Students in Geosciences *2014–2017*
Weekly meetings to discuss research, teach students model data analysis.

Newton Country Day School, MA
Advise Middle and High School Students *2007–2012*

Invited Oral Presentations

2024: 'Higher temperatures in socially vulnerable US communities & limits of safe electric fan use', AGU 2024 Fall Meeting, Washington, D.C.

2024: 'Higher temperatures in socially vulnerable US communities & limits of safe electric fan use', Department of Geosciences Colloquium, Idaho State University, Pocatello, Idaho.

2024: 'Estimating Global Labor Losses Associated with Heat Exposure for Outdoor Workers': Columbia University Extreme Heat Workshop, Columbia University, New York.

2023: 'Disproportionate heat exposure in socially vulnerable US communities and ability to safely use fans as a cooling option': Wegener Center Common Space seminar, University of Graz, Graz, Austria.

2023: 'Low-frequency precipitation variability in climate model simulations and paleoclimate data of the last millennium': PAGES2k Phase 4 Network Workshop, Potsdam, Germany.

2022: 'Impacts of heat exposure and climate change on global labor productivity': Frontiers in Geoscience Seminar Series, Los Alamos National Laboratory, Los Alamos, New Mexico.

2022: 'Rising wet-bulb temperatures and labor impact': Heat Stress in India: Accelerating mitigation and adaptation efforts in the face of a changing climate, Kolkata, India.

2022: 'Magnitudes and spatial patterns of forced and unforced interdecadal temperature variability in CMIP6 models': Climate & Global Dynamics Seminar Series, NCAR, Boulder, Colorado.

2020: 'Deforestation and Climate Change Impacts on Temperature and Heat Exposure in the Tropics': Science Seminar Series, WSU Vancouver, Washington.

2020: 'Forced and unforced interdecadal temperature variability in CMIP6': Canadian Centre for Climate Modeling and Analysis/University of Victoria, Victoria.

2019: 'Interdecadal Temperature Variability in Climate Model Simulations and Paleoclimate Data': Research School of Earth Sciences Seminar, Australia National University, Canberra, Australia.

Selected Oral Presentations

2025: 'Survivable but Not Livable: Intensifying Global Heat Threatens Livability for Younger and Older Adults': AGU 2025 Fall Meeting, New Orleans, LA.

2023: 'Heat exposure, climate change, global labor productivity, and ability of workers to adapt': Division of Earth and Climate Sciences Seminar, Duke University, Durham, NC.

2021: 'Humid Heat Exposure and Worker Adaptation in the Tropics': WRF Postdoctoral Fellows Symposium, Washington.

2020: 'Sources of Climate Variability and Impacts of Climate Change and Deforestation': WRF Postdoctoral Fellows Symposium, Washington.

2019: 'Impacts of Deforestation and Climate Change on Temperatures, Worker Health, and Well-Being in Berau Regency, Indonesia': AGU Fall Meeting eLightning talk.

2018: 'Local Regions Driving Interdecadal Global Climate Variability in the Last Millennium Reanalysis': American Geophysical Union (AGU) Fall Meeting, Washington D.C.

2018: 'The Continuum of Drought in Southwestern North America': Atmospheric and Climate Dynamics seminar series, University of Washington, Seattle, Washington.

Selected Poster Presentations

2023: 'Disproportionate heat hazard in socially vulnerable US communities limits use of fans as a safe cooling option': Poster at 2023 AGU Fall Meeting.

2023: 'Disproportionate heat exposure makes fan use unsafe for many vulnerable populations in the US': Poster at 2023 NOAA Climate Prediction Applications Science Workshop.

2022: 'Estimates of Global Air Pollution Exposure and Benefits of Emissions Reductions for Global Health': iPoster at 2022 AGU Fall Meeting.

2019: 'Patterns of forced decadal temperature variability over the last millennium in the tropics: perspectives from CMIP5 models and coral records': Poster at 2019 AGU Fall Meeting.

2017: 'Forced and internal climate variability over the last millennium in the CESM and CMIP5': Poster at 2017 AGU Fall Meeting.

Diversity, Equity, and Inclusion Training

2022: Neurodiversity and Your Classroom: Duke Univ., NC

2022: PRIDE Training - Language and Identities: Duke Univ., NC

2022: Sharing your experiences with inclusive and equitable teaching: Duke Univ., NC

2022: Inclusive Mentoring: Duke Univ., NC

2022: Inclusive Syllabus Creation: Duke Univ., NC

2022: Handling Uncomfortable Moments in the Classroom: Duke Univ., NC

2021: Teaching and Mentoring Diverse Learners: Duke Graduate School, NC

2020: Building a Welcoming and Inclusive Work Environment: NIEHS, NC

2020: Inclusive Learning Seminar Series: Duke Univ., Durham, NC

2020: Culturally Inclusive Communication in the Workplace: Duke Univ., Durham, NC

2019: Microaggressions Workshop: University of Washington, Seattle, WA

Selected Additional Training and Experience

2011–Current: Wilderness First Responder (WFR): NOLS Wilderness Medicine Institute, WY

2024: Science Mentorship Training: 3-day mentorship training course at TNC Portland, OR

2022: Incorporating Environmental Justice into Teaching: NSOE, Duke Univ., NC

2022: Write Winning NIH Grant Proposals: Grant Writers' Seminars and Workshops

2022: Mentorship: Efficient and Effective Practices: Online training, NCFDD

2022: Nuts and Bolts of Professional Presentations: Online training

2022: Pandemic Pedagogy Teaching Symposium 2022: Online training. Emerging research on pandemic-era teaching innovations

2020: Active Learning Workshop: UW Learning Technologies, Seattle, WA. Online learning (Zoom, pollev.com, Google Docs), active learning strategies

2019: CMIP6 Hackathon: UW eScience Institute/Atmospheric Sciences, Seattle, WA. Data management in Python

2019: Software Carpentry Workshop: eScience Institute, Seattle, WA. Data/code management: Unix, Git, Python

2017: Last Millennium Reanalysis Workshop: NCAR, Boulder, CO

2017: Earth Educators' Rendezvous: Albuquerque, NM

2015: Expert Witness Training Academy: William Mitchell College of Law, MN

Field Experience

2014–2016: **Nepali Himalaya**: Six weeks per year coring lakes in far western Nepal

2014–2015: **Peruvian, Ecuadorian Amazon**: Two-four weeks coring lakes

2015: **Bottomless Lakes State Park**: Three days coring lakes in southern New Mexico

Peer Review

Geophysical Research Letters, Earth and Space Science, Atmosphere, Nature Communications, Nature Geoscience, Climate of the Past, Journal of Quaternary Science, Quaternary International, Climatic. Change, Earth's Future, Natural Hazards

Skills and Interests

Languages: Fluent in English, fluent in Spanish

Computer: Python (Jupyter, Xarray, Matplotlib, Numpy, GeoCat), Matlab, bash, slurm/sbatch, Unix/Linux, Machine Learning (Self-Organizing Maps), GitHub, GEOS-Chem, NOAA Ferret, R, KNMI Climate Explorer, Illustrator, Photoshop, Arcpad, S-Plus, KaleidaGraph, Excel, Access, Word, PowerPoint, Poll Everywhere, Zoom + Google Docs (group breakouts)

Paleoclimate Field Work: Universal Core Sampler, YSI Water Quality Meter, Ekman Sampler

Lab Sample Preparation and Analysis: AMS radiocarbon (^{14}C) dating, μ-XRF scanning, Grain size, Loss on Ignition, Bulk carbon and nitrogen, Accelerated solvent extraction

Hydrology: Ground-water tracer tests, flow-meter installation, water-quality monitoring

Photography: Digital SLR, fieldwork documentation, maintained website for 10+ years

Baking: I bring baked goods (cookies, breads, etc.) to colleagues to promote a friendly environment