HUSILE BAI

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RESEARCH INTERESTS

My research centers on large-scale circulations, climate dynamics and variability, regional and global climate modeling, ecosystem-climate teleconnections, surface-atmosphere interactions, hydroclimate and extreme events

EDUCATION

University of Utah
Ph.D., Atmospheric Sciences and Meteorology 2018-2022
Chinese Academy of Sciences
M.S., Earth and Environmental Sciences 2015-2018
Lanzhou University
B.S., Atmospheric Sciences and Meteorology 2011-2015

PROFESSIONAL EXPERIENCE

Assistant Professor of the Practice, Vanderbilt University 2025-
Climate and Environmental Studies
Assistant Professor of the Practice, Vanderbilt University 2024-
Department of Earth and Environmental Sciences
Research Associate, University of Utah 2024-2025
Department of Atmospheric Sciences
Postdoctoral Research Associate, University of Utah 2023-2024
Advisor: Dr. Summer Rupper
Adjunct Professor, Salt Lake Community College 2021-2022
Department of Geosciences
Graduate Teaching Assistant, University of Utah 2020-2022
Department of Atmospheric Sciences
Graduate Research Assistant, University of Utah 2018-2022
Advisor: Dr. Courtenay Strong

PUBLICATIONS

(Google Scholar)

1. **Husile Bai,** Summer Rupper, and Courtenay Strong. Brief Communications: Impact of mountain glaciers on regional hydroclimate. (*submitted*)
2. Jalene M. LaMontagne, Courtenay Strong, **Husile Bai**, Jessie J. Forest, Andrew Hacket-Pain, Mark Schulze, and Benjamin Zuckerberg, Atmospheric waves synchronize and desynchronize mast seeding at a hemispheric scale, (*submitted*)
3. **Husile Bai,** Olivia Mondlock, Courtenay Strong, Jalene M. LaMontagne, and Benjamin Zuckerberg. Probabilistic explanation for episodic ecological events, *Environmental Research Letter*, 19, 114004, https://iopscience.iop.org/article/10.1088/1748-9326/ad78ee
4. **Husile Bai,** Courtenay Strong, Jalene M. LaMontagne, Ivy V. Widick, and Benjamin Zuckerberg. A North American climate-masting-irruption teleconnection and its change under global warming, *Science of The Total Environment*, 948, 174473, https://doi.org/10.1016/j.scitotenv.2024.174473
5. Luke Stone, Courtenay Strong, **Husile Bai**, Thomas Reichler, Greg McCabe, and Paul D. Brooks (2023). Atlantic Ocean influence on western U.S. hydroclimate and water resources, *npj Climate and Atmospheric Science*, 6, 139, https://doi.org/10.1038/s41612-023-00471-7
6. **Husile Bai** and Courtenay Strong (2023). Atmospheric modeling study on convection-triggered teleconnections driving the summer North American dipole, *Journal of Climate,* 36, 6991–7003, https://doi.org/10.1175/JCLI-D-23-0015.1
7. **Husile Bai**, Courtenay Strong, and Benjamin Zuckerberg (2023). Drivers of an ecologically relevant summer North American dipole, *Journal of Climate*, 36, 2387-2399, https://doi.org/10.1175/JCLI-D-22-0542.1
8. **Husile (**胡思乐**)**, Liu Yu, Li Guohui (2019). Impact of ice nuclei on the development of cumulus clouds over the North China Plain, *Journal of Earth Environment*, 10(3):257-266 (in Chinese) https://doi.org/10.7515/JEE182078
9. **Husile (**胡思乐**)**, Li Yan, Fang Congxi, Chen Zhihong (2018). The relationship between Ural blocking, Siberian high, and East Asian winter monsoon, *Journal of Lanzhou University (natural sciences)*, 54(4):440-452 (in Chinese) https://doi.org/10.13885/j.issn.0455-2059.2018.04.003
10. Yu Liu, Weiyuan Ta, Qiang Li, Huiming Song, Changfeng Sun, Qiufang Cai, Han Liu, Lu Wang, **Hu Sile**, Junyan Sun, Wenbiao Zhang, Wenzhu Li (2018). Tree-ring stable carbon isotope-based April-June relative humidity reconstruction since AD 1648 in Mt. Tianmu, China, *Climate Dynamics*, 50, 1733–1745, https://doi.org/10.1007/s00382-017-3718-6

11. Yu Liu, Han Liu, Huiming Song, Qiang Li, George S. Burr, Lu Wang, and **Hu Sile** (2017). A monsoon-related 174-year relative humidity record from tree-ring δ18O in the Yaoshan region, eastern central China, *Science of the Total Environment*, 593: 523-534, https://doi.org/10.1016/j.scitotenv.2017.03.198

AWARDS AND GRANTS

Great Salt Lake Basin Integrated Plan - State of Utah Department of Natural Resources(*$60K*) 2024-2026

Poster Evaluator, Office of Undergraduate Research, University of Utah 2023

Dr. Norihiko Fukuta Memorial Award Best Peer-Reviewed Publication, Department of Atmospheric Sciences, University of Utah (*$1.5K*) 2023

AGU Chapman Conference Second National Conference travel grant ($*2.5K*) 2023

Rockstars Student Service Award, Department of Geology & Geophysics, University of Utah 2022

University of Utah Graduate Student Travel Award ($*0.5K*) 2021

INVITED TALKS AND SEMINARS

2025 University of Missouri-St. Louis - Department of Biology

2024 Vanderbilt University - The School for Science and Math

2024 Vanderbilt University - Environmental Humanities Seminar

2024 Vanderbilt University - Department of Earth and Environmental Sciences

2024 Rutgers University - Department of Civil and Environmental Engineering

2024 University of Utah - Department of Geography

2023 Columbia University - Mountain Glacier Contribution to Sea Level CE (MAGIC) workshop

CONFERENCE PRESENTATIONS

2024 Great Salt Lake Basin Integrated Plan Advisory Meeting, Virtual (Talk)

2024 Spatial Utah Data Science, Salt Lake City, UT (Talk)

2024 Macrosystems PI Annual Meeting, Virtual (Poster)
2023 AGU Fall Meeting, San Francisco, CA (Poster)
2023 NASA HiMAT workshop, Salt Lake City, UT (Talk)
2022 AGU Fall Meeting, Chicago, IL (Poster)
2021 AGU Fall Meeting, New Orleans, LA (Poster)
2021 Macrosystems PI Annual Meeting, Virtual (Poster)
2017 AGU Fall Meeting, New Orleans, LA (Talk)

TRAINING AND WORKSHOPS

2025 IOP Peer Review Excellence Certificate
2024 Graduate Teaching Institute - Teaching Certificate
2024 DELPHI Natural Language Processing (NLP) with applications to clinical data science workshop, Salt Lake City, UT
2024 MAGIC AI/ML workshop, Salt Lake City, UT
2023 European Geosciences Union (EGU) Peer Review Training (*Virtual*)
2023 Weather Research & Forecasting (WRF) tutorial, NCAR, Boulder, CO
2023 MAGIC workshop, Lamont-Doherty Earth Observatory, New York, NY
2023 NASA HiMAT workshop, Salt Lake City, UT
2023 2nd US Ice Core Open Science Meeting, Seattle, WA
2023 ICEPACK glacier model training, Seattle, WA
2023 MOOC machine learning in weather and climate training (*Virtual*)
2022 Research Mentoring training, (*Virtual*)
2022 AGU Chapman Conference Second National Conference, Washington, DC
2019 12th Annual Utah Snow and Avalanche Workshop, Salt Lake City, UT

TEACHING EXPERIENCE

Vanderbilt University Department of Earth and Environmental Sciences
EES 1081 & 1081 Lab: Earth and Atmosphere
Instructor Spring 2025
EES 2110: Introduction to Climate Change
Instructor Fall 2024, Spring 2025
University of Utah Department of Geography
GEOG 3020: Geographical Analysis
Lab Instructor Spring 2024

GEOG 5410/6410: Graduate-level Paleoclimatology
Guest Lecture Spring 2024

Salt Lake Community College Department of Geosciences
ATMO 1020: Climate Change
Instructor Summer 2022

University of Utah Department of Atmospheric Sciences
ATMOS 5400: Climate System
Teaching Assistant Fall 2020, Fall 2021

ATMOS 6040: Graduate-level Environmental Statistics
Teaching Assistant Spring 2021

RESEARCH MENTORING

Graduates:

- Bethan Lodge, Ph.D. committee, Department of Earth and Environmental Sciences, Vanderbilt University, 2025 -
- Sangseok Oh, Ph.D. committee, Department of Atmospheric Sciences, Pusan National University, 2024 -

Undergraduates:

- Yidi Wang, Immersion Vanderbilt Undergraduate Summer Research Program (VUSRP), 2025
- Zihan Sun, undergraduate directed study - Department of Earth & Environmental Sciences, Vanderbilt University, 2025 -
- Michael Witherspoon, undergraduate directed study - Department of Earth & Environmental Sciences, Vanderbilt University, 2024 - 2025
- Salma Elhandaoui, undergraduate directed study - Department of Earth & Environmental Sciences, Vanderbilt University, 2024 -2025
- Olivia Mondlock, supervised Capstone project, Department of Atmospheric Sciences, University of Utah, 2021-2022
- Zoe Exelbert, mentor for Wilkes Climate Center fellowship, University of Utah, 2022-2024

High School Students:

- Marcos Dedman Szendrey, John Overton High School, 2025 Summer

SERVICE AND OUTREACH

Committee for the AGU Fall Meeting Program 2025 -
Committee for the AGU Atmospheric Sciences Fall Meeting Program 2025 -
Committee for the Climate and Environmental Studies**,** Vanderbilt University 2024 -
Advisor of Vanderbilt University Mongolian Student Association (VUMoSA), Vanderbilt University 2024 -
Member of Board of Higher Education for 2-year College, American Meteorological Society (AMS BHE 2YC) 2022 -
Postdoc Success Chair in the Utah Postdoctoral Association (UPDA), University of Utah 2023 - 2024
Committee for the Advancement of Inclusion and Diversity (CAID), College of Mines and Earth Sciences, University of Utah 2020-2022
Inclusive Earth officer (social media promotion), College of Mines and Earth Sciences, University of Utah, 2021-2022 2021-2022

JOURNAL REVIEWER

PLOS Climate, Journal of Climate, Environmental Research Letter, Geophysical Research Letter

MEMBERSHIP

American Geophysical Union (AGU) member
American Meteorological Society (AMS) member
European Geosciences Union (EGU) member
American Center for Mongolian Studies (ACMS) member

PROFESSIONAL SKILLS

- **Climate model**: WRF, CESM, GFDL, CMIP6
- **Glacier model**: ICEPACK, OGGM
- **Programming**: NCL, Matlab, Python, Fortran, R, IDL, JeKyll, CDO
- In addition, I am familiar with a wide range of techniques and programs for data analysis and simulation under Unix (Linux) and Mac OS environments.
- **Other**:
  I am fluent in Mongolian (native), English, and Mandarin Chinese, and have given presentations and taught in all three languages.