

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

PROFESSIONAL EXPERIENCE

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

PUBLICATIONS (ADVISEE)

([Google Scholar](#))

1. **Husile Bai**, Savanna Wolvin, Courtenay Strong, Sydney Smith, Zachary Cleveland, Maribeth Kniffin, Melanie Holland. Contrasting changes in projected great basin summer precipitation (*submitted*)

2. Sang-seok Oh, **Husile Bai**, Hyo-Jung Lee, Hyun-Young Jo, Cheol-Hee Kim. Climate-driven dust intensification over the Mongolian Gobi in early spring, *Scientific Reports*, <https://doi.org/10.1038/s41598-026-50408-2>
3. Ella K. Hunter, Courtenay Strong, Summer Rupper, **Husile Bai**, Joey Krueger, Chtistopher Mitchell. Tropical Controls on the West Antarctic Ice Sheet Surface Mass Balance Interannual Variability in the Twentieth Century, *JGR: Atmospheres*, <https://doi.org/10.1029/2025JD045664>
4. **Husile Bai**, Summer Rupper, and Courtenay Strong. Brief Communications: Impact of mountain glaciers on regional hydroclimate. (*submitted*)
5. Jalene M. LaMontagne, Courtenay Strong, **Husile Bai**, Jessie J. Forest, Andrew Hackett-Pain, Mark Schulze, and Benjamin Zuckerberg, Atmospheric waves synchronize and desynchronize mast seeding at a hemispheric scale, (*submitted*)
6. **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>
7. **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>
8. 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>
9. **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>
10. **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>
11. **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>
12. **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>
13. 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>
14. 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 $\delta^{18}\text{O}$ 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

Vanderbilt QPR Certified Gatekeeper instructor(s)	2026
AGU25 PC Honorarium	2025
Vanderbilt Professional Travel Grant (\$2K)	2025
Vanderbilt Alberstadt-Reesman-Stearns Faculty Research Fund (\$2K)	2025
USBR - Great Salt Lake Basin Integrated Plan (\$61K)	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 and Geophysics, University of Utah	2022
University of Utah Graduate Student Travel Award (\$0.5K)	2021

INVITED TALKS AND SEMINARS

2025 Indiana University Bloomington - Department of Earth and Atmospheric Sciences
2025 US Department of the Interior - Bureau of Reclamation
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

SELECTED CONFERENCE PRESENTATIONS

2025 AGU Annual Meeting, New Orleans, LA (Poster)
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

2026 2nd ESA-NASA Workshop on AI Foundation Model for Earth Observation, Huntsville, AL
2026 Climate Reality Project 20th Anniversary Trainings, Nashville, TN
2026 NSF NCAR Artificial Intelligence for Earth System Science, AI Community Engagement Workshops (*Virtual*)
2025 Certificate for Responsible Conduct of Research & Research Security (*Virtual*)
2025 AGU25 Scheduling meeting, Washington DC
2025 NSF NCAR Community Earth System Model Tutorial, Boulder, CO
2025 Early Career Geoscience Faculty Workshop, Saint Paul, MN
2025 IOP Peer Review Excellence Certificate (*Virtual*)
2024 Teaching Certificate University of Utah Graduate Teaching Institute, Salt Lake City, UT
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: Introduction to the Atmosphere

Instructor

Spring 2026

CORE 1020: Science, Technology, and Value

Instructor

Spring 2026

EES 1081 & 1081 Lab: Earth and Atmosphere

Instructor

Spring 2025

EES 2110: Introduction to Climate Science

Instructor

Fall 2024-2026, 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:

- Battulga Purev, Vanderbilt Summer Immersion Inter, 2026 Summer
- Yidi Wang, ENVS 4981 Independent Study & Honors thesis , 2025-2026
 - * *Highest Honor Thesis*
 - * *Oral presentation at EGU26 General Assembly (2026), Vienna, Austria*
- Zihan Sun, EES 3841 Directed Study - Department of Earth & Environmental Sciences, Vanderbilt University, 2025-2026
 - * *Poster Presentation at AGU Annual Meeting (2025), New Orleans*
- Michael Witherspoon, EES 3841 Directed Study - Department of Earth & Environmental Sciences, Vanderbilt University, 2024 - 2025
- Olivia Mondlock, Undergraduate Capstone Project, Department of Atmospheric Sciences, University of Utah, 2021-2022
 - * *Coauthored on the peer-reviewed paper*
- Zoe Exelbert, Wilkes Climate Center Fellowship, University of Utah, 2022-2024
 - * *Poster presentation at Wilkes Climate Summit (2024), Salt Lake City*

High School Students:

- Marcos Dedman Szendrey, John Overton High School, 2025 Summer
 - * *Poster presentation at Joint REHSS/School for Science and Math (SSMV) Symposium*
 - * *Article publication on Young Scientist (Journal Cover)*

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

SYNERGISTIC ACTIVITIES

Peer reviewer for *PLOS Climate*, *Geophysical Research Letter*

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

Session Convener at AGU Fall Meeting:

- Primary Convener General Session: Atmospheric Physics, Dynamics, and Climate, (2025, 2026)
- Co-Convener Bridging Scales and Systems: Advances in Regional Earth System and Hydroclimate Modeling for Extremes, Impacts, and Decision Support, co-convener (2025, 2026)

PROFESSIONAL SKILLS

- **Climate model:** WRF, CESM2, 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.