HUSILE BAI

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EDUCATION

University of Utah
Ph.D., Atmospheric Sciences and Meteorology 2018-2022
Chinese Academy of Sciences - Institute of Earth Environment
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 2024 -
Department of Earth and Environmental Sciences
Postdoctoral Research Associate , University of Utah 2023-2024
Department of Geography

RESEARCH INTERESTS

My research centers on atmospheric dynamics, climate dynamics and variability, regional and global climate modeling, Earth system modeling, surface-atmosphere interactions, cloud microphysics, hydroclimate, cryosphere

PUBLICATIONS

1. **Husile Bai,** Summer Rupper, and Courtenay Strong. Glaciers matter for getting the weather and climate right. (*submitted*)
2. **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

3. **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
4. 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*)
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(*$36k*) 2024-2025
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

2024 Vanderbilt University - Earth and Environmental Sciences
2024 Rutgers University - 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 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

2024 Graduate Teaching Institute-Teaching Certificate, 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 2110: Introduction to Climate Change
Instructor — Fall 2024
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

Undergraduates:

- Michael Witherspoon, undergraduate directed study - Department of Earth & Environmental Sciences, Vanderbilt University, 2024 -
- Salma Elhandaoui, undergraduate directed study - Department of Earth & Environmental Sciences, Vanderbilt University, 2024 -
- Olivia Mondlock, co-mentored Capstone project - Department of Atmospheric Sciences, University of Utah, 2021-2022
- Zoe Exelbert, co-mentored Wilkes Scholar undergraduate project - Department of Atmospheric Sciences, University of Utah, Jan 2023 -2024

SERVICE AND OUTREACH

Advisor for Vanderbilt University Mongolian Student Association (VUMoSA), Vanderbilt University 2024
Postdoc Success Chair in the Utah Postdoctoral Association (UPDA), University of Utah 2023 - 2024
Observer & Member of Board of Higher Education for 2-year College, American Meteorological Society (AMS BHE 2YC) 2022 -
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 (2024 -)

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 models**: 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.