

SABER E. BRASHER

Assistant Professor, Department of Geography

Oklahoma State University

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EDUCATION

- 2022 **PhD Climatology**
Department of Geography and Spatial Sciences
University of Delaware, Newark, DE
Dissertation: Climatology and Spatial Distribution of Northern Hemisphere
Cryo-Cover, Chair: Dr. Daniel J. Leathers
- 2017 **MS Geography**
Department of Geography
Texas State University, San Marcos, TX
Thesis: Trends and Characteristics of North Atlantic Tropical Cyclones, Chair:
Dr. Richard W. Dixon
- 2015 **BS Physical Geography**
Department of Geography
Texas State University, San Marcos, TX
Honors: Magna Cum Laude

PROFESSIONAL APPOINTMENTS

2022 – *present* **Assistant Professor, Oklahoma State University**

Affiliate Faculty, Environmental Science Interdisciplinary Graduate Program

Tenure-track appointment in the Department of Geography in Stillwater, OK with a teaching load of two courses per semester.

2022 **Postdoctoral Researcher, University of Delaware**

Funded by the Center for Environmental Monitoring and Analysis (CEMA) to analyze CMIP6 climate model output and other data products to create an updated Delaware Climate Change Impact Assessment.

- 2021 – 22 **Doctoral Fellow, University of Delaware**
- Competitive fellowship from the Graduate College to support the completion of PhD research.
- 2019 – 21 **Research Assistant, University of Delaware**
- NSF funded grant (Grant Number: 1757353) with EPSCOR to evaluate environmental big data, with a focus on water quantity and availability for the state of Delaware and development of online decision support systems using insight from those datasets.
- 2018 **Research Assistant, University of Delaware**
- Funded by the Delaware Environmental Observing System (DEOS) to investigate changes in extreme precipitation and to compile snowfall statistics for Delaware.
- 2015 – 17 **Research Assistant, Texas State University**
- Funded by the Geography Department to compile and analyze climate and environmental datasets using R and to investigate sea ice extent.

GRANTS AND FUNDING

Funding Granted (Total: \$4,190,764.54, Brasher's: \$517,501.54)

- 2024 – 27 USGS (*Total: \$410,294; Brasher's: \$103,530*). “Optimizing Invasive Plant Management in Grasslands: Integrating Remote Sensing and Climate Sciences”- a proposal submitted to the South-Central Climate Adaptation Science Center. **Role: Co-PI, Lead-PI:** H. Gholizadeh, Oklahoma State University.

Context: This work is in partnership with the Nature Conservancy to understand invasive plant behavior in threatened native tallgrass prairies. By utilizing both remote sensing and climatological techniques, deeper understanding of plant dynamics and future spread can inform management strategies under tight budgetary constraints.

- 2023 – 27 NSF (Total: \$3,716,507; Brasher's: \$350,008). “Collaborative Research: RII Track-2 FEC: RURAL CONFLUENCE: Communities and Academic Partners Uniting to Drive Discovery and Build Capacity for Climate Resilience”- a proposal submitted to the National Science Foundation EPSCoR Infrastructure Improvement Program. **Role: Co-PI, Lead-PI:** T. Ochsner, Oklahoma State University.

Context: This work is a partnership with multiple universities as well as community members and leaders in Oklahoma, Nebraska, and Louisiana. Through development of communities of practice and regular meetings with leaders in climate-impacted areas, the team is developing community-specific models to inform place-specific climate resilience strategies in rural places.

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- 2022 – 24 OSU CAS (~\$8,000). Research project proposal for funds to hire and support an undergraduate student as a research assistant (~10hrs/ week for two academic years) as part of the Advancing Undergraduate Research and Creative Activity (AURCA) program- submitted to the OSU College of Arts and Sciences. **Role: PI.**
- 2023 OSU ASR (\$8,111). “Oklahoma’s Summer Hydroclimate and Linkages with Water Availability”- a proposal submitted to the OSU College of Arts and Sciences Research (ASR) Program. **Role: PI.**
- 2023 OSU CAS (\$15,052.54). Technology Fee Proposal for Classroom Improvement in Meteorology and Physical Geography- submitted to the OSU College of Arts and Sciences to purchase multiple instrumentation upgrades. **Role: Co-Lead.**
- 2021 – 22 Mather Fellowship (\$1,300), Department of Geography and Spatial Sciences, University of Delaware (by faculty nomination). **Role: Fellow.**
- 2021 – 22 Competitive Dissertation Fellowship (\$28,000), Graduate College, University of Delaware (by faculty nomination and then a university-wide competition). **Role: Fellow.**
- 2016 George D. Battle Memorial Scholarship (\$500) Supporting Research in Climatology, Geography Department, Texas State University (by department-wide competition). **Role: Recipient.**
- 2015 – 16 Graduate Merit Fellowship (\$3,000), Graduate College, Texas State University (by faculty nomination). **Role: Fellow.**

Declined, Revising for Resubmission

- 2024– 27 NOAA (Total: \$499,776; Brasher’s: \$199,553). “Development and Analysis of a Rain-on-Snow Precipitation Event Database: Improved Understanding of Global Forcings through Synoptic Weather Typing”- a proposal submitted to the National Oceanic and Atmospheric Administration Climate Program Office. **Role: Co-PI, Lead-PI:** Z. Suriano, Western Kentucky University.

MANUSCRIPTS

Published

6. **Brasher SE**, Leathers DJ, Callahan T, Giesa K. An Analysis of the National Water Model for a Suburban Watershed. (2023) *Physical Geography*, 1-22.
<https://doi.org/10.1080/02723646.2023.2260546>

5. Brinson KR, Leathers DJ, **Brasher SE**. Influence of Synoptic Weather Conditions on Atmometers on the Delmarva Peninsula, USA. (2023). *Agricultural and Forest Meteorology*, 1-9. <https://doi.org/10.1016/j.agrformet.2023.109482>
4. **Brasher SE**, Leathers DJ. Using Self-Organizing Maps to Detect Northern Hemisphere Cryo-Cover Transformation. (2022). *Climate Dynamics*, 1-17. <https://doi.org/10.1007/s00382-022-06394-y>
3. **Brasher SE**, Leathers DJ. Climatology of Northern Hemisphere Cryo-Cover. (2021). *International Journal of Climatology*, 1–13. <https://doi.org/10.1002/joc.7224>
2. Ballinger TJ, Hanna E, Hall RJ, Carr RJ, **Brasher SE**, Osterberg EC, Cappelen J, Tedesco M, Ding Q, Mernild SH. (2020). The role of blocking circulation and emerging open water feedbacks on Greenland cold-season air temperature variability over the last century. *International Journal of Climatology*, 1–23. <https://doi.org/10.1002/joc.6879>
1. Leathers DJ, **Brasher SE**, Brinson KR, Hughes C, Weiskopf S. (2019). A comparison of extreme precipitation event frequency and magnitude using a high-resolution rain gage network and NOAA Atlas 14 across Delaware. *International Journal of Climatology*, 3748–3756. <https://doi.org/10.1002/joc.6425>

In Review / Preparation

3. Harvey L, Bathke DJ, **Brasher SE**, Brown AM, Bui LM, De Jesús Crespo R, Emergy M, Haigh T, Hill D, Hammack JD, Lam NS, Robinson JS, Van Leuven AJ, Weckler PR, Wood-Black F, Ochsner TE. A Call for Research and Capacity Building to Strengthen Rural Climate Resilience. In Review: *Climate Resilience and Sustainability*
2. **Brasher SE**, Leathers DJ. Northern Hemisphere Cryo-Cover Transitions and Relationships with the Larger Atmospheric Circulation. Target: *Climate Dynamics*
1. **Brasher SE**. Arctic Amplification: A Review of Mid-latitude Atmospheric Implications and Feedbacks. Target: *Environmental Research Letters*

TEACHING EXPERIENCE

Summer⁺, Fall[#], Winter[^], Spring^{*}

Oklahoma State University (all as Instructor of Record)

2024 ⁺	Climate Research Seminar (GEOG 6910, 2 students)
2024 [*]	Graduate Seminar in Climate Science (GEOG 5930, 8 students)
2023 – 24 [*]	Meteorology (GEOG 3033, 70 – 90 students)

- 2022 – 23[#] Climatology (GEOG 3023, 15 – 20 students)
 2022 – 23[#] Climate Change and Humanity (GEOG-GEOL 1022, 50 – 54 students)

University of Delaware

- 2020 – 21[^] Instructor of Record, Climate and Life (GEOG 152, 20 – 25 students)
 2018* Lab Instructor, Physical Climatology (GEOG 412)
 2018* Teaching Assistant, Environmental Science (ENSC 101)
 2017 – 18[#] Teaching Assistant, Environmental Science Proseminar (ENSC 450)

Texas State University

- 2016 – 17^{#*} Lab Instructor, Physical Geography (GEO 2410)
 2015 – 16^{#*} Teaching Assistant, Meteorology (GEO 1305)

ADVISING

Doctoral

- 2023 – *present* Holly Todaro (Wildlife Ecology), *Role: Committee Member*
 2022 – *present* Wenqi Liu (Geography), *Role: Committee Member*
 2022 – *present* Matthew Broadway (Wildlife Ecology), *Role: Committee Member*

Master's

- 2024 – *present* Smriti Shrestha (Geography), *Role: Committee Chair*
 2024 – *present* Daniel Aderotoye (Geography), *Role: Committee Chair*
 2023 – *present* Farzana Afroz (Geography), *Role: Committee Chair*
 2023 – *present* Great Igiekhumhe (Environmental Science), *Role: Committee Chair*
 2023 – 24 Kathy Osei (Geography), *Role: Committee Member*
- Successfully graduated and moved on to a PhD program.

Undergraduate

- 2022 – 24 Abby Livingston (Environmental Science), *Role: Research Advisor*
- Successfully graduated and moved on to an MS program.

ACADEMIC PRESENTATIONS

presenting author[#], student mentee^{}*

- 2024 Livingston, A^{#*} and **Brasher SE**. Oklahoma's Summer Climate and Irrigated Agriculture. *Poster presentation for the Oklahoma Clean Lakes and Watersheds Association Conference*. Stillwater, Oklahoma. April 2024.
- 2023 Livingston, A^{#*} and **Brasher SE**. Linkages Between Oklahoma Water Availability and Irrigated Agriculture. *Poster presentation for the Oklahoma State University Undergraduate Research Symposium*. Stillwater, Oklahoma. April 2023.
- 2022 **Brasher SE[#]**. Hydroclimate and Environmental Change. *Oral presentation for the Southwest Division of the American Association of Geographers Annual Meeting*. Fayetteville, Arkansas. October 2022.
- 2019 Ballinger TJ[#], Hanna E, Hall RJ, Tedesco M, **Brasher SE**, Ding Q, Carr R, Mernild S, Cappelen J. North Atlantic blocking regulates cold season air temperature variability over Greenland coastal and ice sheet ablation areas. *Poster presentation for the American Geophysical Union Annual Meeting*. San Francisco, California. December 2019.
- 2019 Ballinger TJ[#], **Brasher SE**, Greene E, Hanna E, Hall RJ, Tedesco M. Atlantic Arctic Ocean, atmosphere, and sea-ice forcing of Greenland air temperature patterns since 1860. *Poster presentation for the American Association of Geographers Annual Meeting*. Washington, D.C. April 2019.
- 2018 Weiskopf S^{#*}, Leathers DJ, **Brasher SE**, Brinson K, Hughes C. Estimating Extreme Precipitation in Delaware. *Poster presentation for the University of Delaware Undergraduate Research Symposium*. Newark, Delaware. August 2018.
- 2017 **Brasher SE[#]** and Dixon R. Trends and Characteristics of North Atlantic Tropical Cyclones. *Oral presentation for the American Association of Geographers Annual Meeting*. Boston, Massachusetts. April 2017.
- 2017 Gharehchahi S[#], **Brasher SE**, Villa J, Goff P, Butler DR. Traumatic Rows of Resin Ducts as a Result of Geomorphic Processes in Western North America. *Poster presentation for the American Association of Geographers Annual Meeting*. Boston, Massachusetts. April 2017.
- 2017 Ghaffari Z[#], **Brasher SE**, Hussein M, Jensen J. Gradual Change in Texas Natural Ecosystem Using MODIS EVI. *Poster presentation for the Imaging and Geospatial Technology Forum Meeting*. Baltimore, Maryland. March 2017.

- 2016 **Brasher SE[#]** and Dixon R. Trends and Characteristics of North Atlantic Tropical Cyclones. *Oral presentation for the Annual Texas Geography Student Research Symposium*. San Marcos, Texas. March 2016.
- 2015 **Brasher SE[#]** and Dixon R. Trends and Characteristics of North Atlantic Tropical Cyclones. *Poster presentation for the Southwest Division of the American Association of Geographers*. San Antonio, Texas. November 2015.

GUEST LECTURES AND OUTREACH

- 2023 **Guest Professor** for the OSU “Raise Your Hand” video series that helps kids understand the world by answering their questions, answered “[How are Hailstones Formed?](#)”
- 2022 – 23 **Guest Lecturer**, presented on “CVs, Cover Letters, and Resumes” and “Successfully Completing Graduate Courses” to a fall graduate level seminar at Oklahoma State University
- 2017 **Guest Lecturer**, Climatology undergraduate classes at Texas State University
- 2016 **Guest Speaker**, Presented on the “Wonders of Weather” for NASA’s Future Aerospace-engineers and Mathematics Academy explorations workshop to middle-school students in San Marcos, TX
- 2016 **Guest Lecturer**, Meteorology undergraduate classes at Texas State University

SERVICE

- 2024 – *present* Member, Advising Committee, Department of Geography, Oklahoma State University
- 2023 – *present* Member, Awards Committee, Department of Geography, Oklahoma State University
- 2022 – *present* Member, Environmental Science Interdisciplinary Graduate Program Curriculum and Steering Committee, Oklahoma State University
- 2022 – *present* Member, Undergraduate Committee, Department of Geography, Oklahoma State University
- 2022 – *present* Member, Social Media Team, Department of Geography, Oklahoma State University

2021 – <i>present</i>	Regular Peer Reviewer for Scientific Journals, such as the <i>Annals of the American Association of Geographers</i> , <i>Climate Dynamics</i> , <i>Physical Geography</i> , <i>The Journal of Applied and Service Climatology</i>
2023 – 24	Member, Personnel Committee, Department of Geography, Oklahoma State University
2021 – 22	Lead Mentor, College of Earth, Ocean and Environment EmPOWER Program (Empathetic Peers Offering Wisdom, Encouragement, and Resources – Graduate peer-to-peer mentoring program), Department of Geography and Spatial Sciences, University of Delaware (elected position, 1 year term)
2020 – 21	Mentor, College of Earth, Ocean and Environment EmPOWER Program (Empathetic Peers Offering Wisdom, Encouragement, and Resources – Graduate peer-to-peer mentoring program), Department of Geography and Spatial Sciences, University of Delaware
2020 – 21	Graduate Student Representative to the Faculty, Department of Geography and Spatial Sciences, University of Delaware (elected position, 1 year term)
2019 – 20	Member, Academic Council, College of Earth, Ocean, and Environment, University of Delaware
2016 – 17	Masters Co-President of the Graduate Forum, Department of Geography, Texas State University
2016 – 17	Texas State Park Ambassador at Lost Maples State Natural Area, Texas State Parks and Wildlife Department

AWARDS

2019	Teaching Excellence Award, Department of Geography and Spatial Sciences, University of Delaware (by faculty nomination)
2018	Woman of Promise, Department of Geography and Spatial Sciences, University of Delaware (by faculty nomination)
2017	The Elizabeth Sterry Graduate Award for Teaching, Geography Department, Texas State University (by faculty nomination)
2017	The Graduate Student Award for Outstanding Service, Geography Department, Texas State University (by faculty nomination)

PROFESSIONAL DEVELOPMENT

- 2024 Teaching STEM Students How to Learn: Metacognition is Key, Workshop by Sandra McGuire, Oklahoma State University
- 2023 NSF EPSCoR Track-2 Kickoff Meeting Attendee, by the National Science Foundation for newly funded Track-2 PIs
- 2023 Teaching with Technology Conference Attendee, Institute for Teaching and Learning Excellence (ITLE), Oklahoma State University
- 2023 Course (Re)Design in a World of Artificial Intelligence Workshop, Institute for Teaching and Learning Excellence (ITLE), Oklahoma State University
- 2023 Optimizing Mentoring Relationships Workshop, Center for the Improvement of Mentored Experiences in Research (CIMER), Oklahoma State University
- 2022 Write Winning Grant Proposals Workshop, Grant Writers' Seminars & Workshops, Oklahoma State University
- 2021 Scientific Writing Nature Masterclass Course, University of Delaware
- 2020 SPOT-ON Teaching and Curriculum Development, University of Delaware

PROFESSIONAL MEMBERSHIPS

American Geophysical Union

American Association of Geographers