

Montana Etten-Bohm

- CONTACT** Department of Atmospheric Sciences, Texas A&M University
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- EDUCATION** **Ph.D. Atmospheric Sciences, *In Progress***
Texas A&M University, College Station, TX
Advisor: Dr. Courtney Schumacher
Proposed Dissertation: Lightning and its Relationship with the Large-Scale Environment
• *Committee: Dr. Don Conlee, Dr. Mikyoung Jun, Dr. Yangyang Xu*
- M.S. Atmospheric Sciences, 2018**
Texas A&M University, College Station, TX
Advisor: Dr. Courtney Schumacher
Thesis: Evaluating the Relationship of Lightning and Large-Scale Environmental Variables
• *Committee: Dr. Mikyoung Jun, Dr. Yangyang Xu*
- B.S. Earth System Science, summa cum laude, 2016**
University of Alabama in Huntsville, Huntsville, AL
Concentration: Atmospheric Science, Minor: Mathematics
- TEACHING EXPERIENCE** **Instructor**, Texas A&M University Atmospheric Sciences Department
- ATMO 201 *Weather & Climate*, Fall 2020
 - Class size ~ 200 students, asynchronous online
 - Solely designed lecture and assessment material, some of which is now being adapted for departmental use in upcoming semesters
 - Incorporated novice teaching strategies for engagement to create a community in a purely online course
 - Received excellent student evaluations (average ~ 4.4/5)
 - ATMO 202 *Weather & Climate Laboratory*, Fall 2017
 - Solely responsible for developing material and grading labs
 - Received excellent student evaluations (average ~ 4.2/5)
 - ATMO 203 *Weather Forecasting Lab*, Fall 2017
 - Adapted a traditionally passive lecture-based class to a more hands-on lab that incorporated experiential and active learning
 - Solely responsible for developing material and grading labs
 - Received excellent student evaluations (average ~ 4.3/5)
- Teaching-As-Research Project**, Texas A&M University, 2019-2020
Advisor: Dr. Don Conlee
- Used different teaching methods in an introductory meteorology course for non-majors to investigate which method enhanced learning
- Graduate Mentor**, Texas A&M University Atmospheric Sciences Department, Research Experience for Undergraduates (REU), Summer 2017 & Summer 2019

WORK
EXPERIENCE

Graduate Research Assistant, 2016-present
Texas A&M University Department of Atmospheric Sciences

Graduate Assistant Lecturer, 2020
Texas A&M University Department of Atmospheric Sciences

Graduate Teaching Assistant, 2017
Texas A&M University Department of Atmospheric Sciences

Environmental Protection Agency Intern, 2015
Western Ecology Division Laboratory, Corvallis, OR

GIS Analyst, 2014
NASA SERVIR, Huntsville, AL

RESEARCH
EXPERIENCE

PhD Dissertation Project, 2019-present
Advisor: Dr. Courtney Schumacher

Teaching-As-Research Project, 2019-2020
Advisor: Dr. Don Conlee

- Used different teaching methods in an introductory meteorology course for non-majors to investigate which method enhanced learning

Master's Thesis Project, 2016-2018
Advisor: Dr. Courtney Schumacher

- Assessed the relationship of lightning with CAPE, column saturation fraction, large-scale rising motion and wind shear
- Created a lightning parameterization using a logistic regression and applied it in a global climate model (GCM)

Senior Capstone Research, 2015-2016
Supervisor: Mr. Ryan Wade

- Created a database of all tropical cyclone tornadoes between 2008 and 2015 and evaluated characteristics of tornadoes in tropical cyclones
- Performed dual-Doppler analysis on two tropical cyclone tornado cases to assess the spatial pattern of tropical cyclone tornadoes and its influence on tornadogenesis

EPA Internship, 2015

Supervisors: Dr. Paul Mayer, Dr. Mike Bollman & Dr. Dave Olszyk

- Measured different soil type properties to evaluate their performance on green roofs in the Pacific Northwest

Supervisor: Dr. Cyren Rico

- Studied the interactions of cerium nanoparticles with mycorrhizal wheat

FELLOWSHIPS

Teaching-As-Research (TAR) Fellowship, 2019-2020

Texas A&M University - Center for the Integration of Research, Teaching and Learning (CIRTL)

Diversity Fellowship, 2016-2017

Texas A&M University College of Geosciences

Undergraduate Greater Research Opportunity Fellowship, 2014-2016

Environmental Protection Agency

PUBLICATIONS

- [5] **Etten-Bohm, M.**, C. Schumacher, and Y. Xu, 2021: Evaluating an Environment-Only Lightning Parameterization in CAM5. *In preparation*.
- [4] **Etten-Bohm, M.**, L. Houston, C. Schumacher, C. Hernandez, and S. Stevenson, 2021: The QBO's Influence on Tropical Lightning Activity. *In preparation*.
- [3] **Etten-Bohm, M.** and D. Conlee, 2021: Assessing Active Learning in an Introductory Meteorology Classroom. *In preparation*.
- [2] **Etten-Bohm, M.**, J. Yang, C. Schumacher, and M. Jun, 2021: Evaluating the relationship between lightning and the large-scale environment and its use for lightning prediction in global climate models. *Journal of Geophysical Research: Atmospheres*, 126(5). <https://doi.org/10.1029/2020JD033990>
- [1] Bollman, M. A., G. E. DeSantis, R. M. DuChanois, **M. Etten-Bohm**, D. M. Olszyk, J. G. Lambrinos, and P. M. Mayer, 2019: A framework for optimizing hydrologic performance of green roof media. *Ecological Engineering*, 140, 105589. <https://doi.org/10.1016/j.ecoleng.2019.105589>

HONORS,
AWARDS &
CERTIFICATES

Outstanding Graduate Teaching Assistant Award, Department of Atmospheric Sciences, Texas A&M University, 2020

Outstanding Graduate Student Seminar Award, Department of Atmospheric Sciences, Texas A&M University, 2020

Center for the Integration of Research, Teaching and Learning Certificates

- Scholar, Texas A&M University, 2020
- Practitioner, Texas A&M University, 2020
- Associate, Texas A&M University, 2018

Best Poster Presentation, "Creating and Evaluating a Lightning Parameterization using a GLM," Workshop on Point Process Models, Department of Statistics, Texas A&M University, 2018

Honorable Mention Poster, "Lightning Parameterization through Point Process Modeling," Workshop on Point Process Models, Department of Statistics, Texas A&M University, 2018

Department of Earth System Science Highest Honors, University of Alabama in Huntsville, 2016

College of Science Dean's List, University of Alabama in Huntsville, 2014-2016

Exceptional Atmospheric Science Undergraduate Scholar Award, University of Alabama in Huntsville, 2015

PROFESSIONAL
MEMBERSHIPS

- **American Geophysical Union**, 2015-present
- **American Meteorological Society**, 2015-present

FIELD
PROGRAM
EXPERIENCE

Verification of the Origins of Rotation in Tornadoes EXperiment-Southeast (VORTEX-SE) Meso18-19, 2018-2019

- Graduate Coordinator: team lead for radiosonde launches

VORTEX-SE, 2015-2016

- Assisted in forecasting, nowcasting, launching radiosondes and operations of instruments

ACADEMIC
ACTIVITIES

Texas A&M University

- Texas A&M Student Chapter of the American Meteorological Society (TAMSCAMS), 2018-present
- Atmospheric Sciences Graduate Council, 2016-present
 - President, 2018-present
 - Vice President, 2017-2018
 - First-year Representative, 2016-2017
- Department of Atmospheric Sciences Recruitment Committee, 2016-2020
 - Chair, 2017-2019

University of Alabama in Huntsville

- Undergraduate Profiling & Sounding Team for Operational & Research Meteorology, 2015-2016
 - Founding President, 2015-2016
- College of Science Ambassador, 2015-2016
- American Meteorological Society / National Weather Association Student Chapter, 2014-2016
 - Undergraduate Student Representative, 2015-2016
- Earth Science Student Association, 2014-2016

OUTREACH
& SERVICE

Texas A&M University

- Physics Festival Volunteer, 2017-present
 - Atmospheric Sciences Department Co-organizer, 2018-2019
- Big Event Volunteer, 2017
- March for Science Participant and Volunteer, 2017

University of Alabama in Huntsville

- Helping Hands of Huntsville Volunteer, 2013

TECHNICAL
SKILLS

Operating Systems

- Mac, Linux, Windows

Programming Languages

- IDL (advanced), R (intermediate), NCL (intermediate), Python (beginner), MatLab (beginner), Shell scripting (beginner)

Other

- LaTeX, Microsoft Word/Excel/Powerpoint, GR2Analyst

PROFESSIONAL
DEVELOPMENT

- Completed "College Classroom Teaching Course," 2020
- Completed "An Introduction to Evidence-Based Undergraduate STEM Teaching" course and participated in the Massive Open Online Course (MOOC) Local Learning Community at Texas A&M University, 2019
- Mentoring Undergraduates Researchers: A Workshop for Graduate Students, Texas A&M University
 - Panelist, 2019
 - Participant, 2018
- Completed Academy of Future Faculty Program, Texas A&M University, 2018
- Aggie Graduate and Professional Community Club Mentorship Program, Mentor, Texas A&M University, 2017

- Building Opportunities for Leadership Development/Leadership Education and Advising Program, Mentor, University of Alabama in Huntsville, 2013-2016

SCIENTIFIC
PRESENTATIONS

Invited Oral Presentations

- “*Assessing Methods for Teaching in an Introductory Weather & Climate Course*” Department of Atmospheric Sciences, Texas A&M University, College Station, TX, Jan 2021
- “*Evaluating the Relationship between Lightning and the Large-Scale Environment*” Atmospheric Science Department, University of Alabama in Huntsville, Huntsville, AL, Feb 2020
- “*Tropical Cyclone Tornadoes*” Department of Atmospheric Sciences, Texas A&M University, College Station, TX, Jan 2017

Oral Presentations (*indicates student that I have mentored)

- **Etten-Bohm, M.**, C. Schumacher, L. Zhu, M. Jun, Y. Xu, Jan 2021: *Evaluating an Environment-Only Lightning Parameterization for GCMs*, 101st Annual American Meteorological Society Conference, New Orleans, LA (Virtual)
- **Etten-Bohm, M.**, D. Conlee, Oct 2020: *Assessing Methods for Teaching Introductory Concepts in Atmospheric Sciences*, Department of Atmospheric Sciences Graduate Student Seminar Series, Texas A&M University, College Station, TX
- **Etten-Bohm, M.**, L. Houston*, C. Schumacher, Sep 2019: *How does the QBO influence lightning in the tropics?*, Department of Atmospheric Sciences Graduate Student Seminar Series, Texas A&M University, College Station, TX
- **Etten-Bohm, M.**, C. Schumacher, J. Yang, M. Jun, Y. Xu, Jan 2019: *Evaluating the Relationship between Lightning and Large-Scale Environmental Parameters with Observational Data, Statistical Models, and Lightning Parameterizations in GCMs*, 99th Annual American Meteorological Society Conference, Phoenix, AZ
- **Etten-Bohm, M.**, C. Schumacher, Feb 2018: *Lightning Correlation with Environmental Variables*. Department of Atmospheric Sciences Graduate Student Seminar Series, Texas A&M University, College Station, TX
- **Etten-Bohm, M.**, R. Wade, K. Knupp, R. Griffin, Dec 2016: *Tropical Cyclone Tornadoes*. Department of Atmospheric Sciences Graduate Student Seminar Series, Texas A&M University, College Station, TX

Contributed Poster Presentations (*indicates student that I have mentored)

- **Etten-Bohm, M.**, D. Conlee, Jan 2020: *What Instruction Method Enhances Understanding of Fundamental Concepts in an Introductory Meteorology Course?* 100th Annual American Meteorological Society Conference, Boston, MA
- Houston, L.*, **M. Etten-Bohm**, C. Schumacher, Jan 2020: *Quasi-Biennial Oscillation Impacts on Lightning in the Tropics*. 19th Annual American Meteorological Society Student Conference, Boston, MA
- **Etten-Bohm, M.**, J. Yang, M. Jun, C. Schumacher, Sep 2018: *Creating and Evaluating a Lightning Parameterization using a GLM*. Workshop on Point Process Models, Statistics Department, Texas A&M University
- Yang, J., **M. Etten-Bohm**, M. Jun, C. Schumacher, Sep 2018: *Lightning Parameterization through Point Process Modeling*. Workshop on Point Process Models, Statistics Department, Texas A&M University
- **Etten-Bohm, M.**, C. Schumacher, Apr 2018: *Lightning Correlation with Environmental Variables using the TRMM LIS*. 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL

- **Etten-Bohm, M.**, C. Schumacher, Jan 2018: *Lightning Correlation with Environmental Variables using the TRMM LIS*. 98th Annual American Meteorological Society Conference, Austin, TX
- Aydell T. *, **M. Etten-Bohm**, C. Schumacher, Jan 2018: *Assessment of Precipitation in CMIP5 Models Using TRMM Data*. 17th Annual American Meteorological Society Student Conference, Austin, TX
- **Etten-Bohm, M.**, R. Wade, Jan 2017: *Dual-Doppler Analysis of Two Tropical Cyclone Tornado Cases*. 16th Annual American Meteorological Society Student Conference, Seattle, WA
- **Etten-Bohm, M.**, R. Wade, Jan 2016: *Tropical Cyclone Tornadoes: An Analysis of All Tropical Cyclone Tornadoes between 2008 and 2015*. 15th Annual American Meteorological Society Conference, New Orleans, LA
- **Etten-Bohm, M.**, R. Wade, Dec 2015: *An Analysis of All Tropical Cyclone Tornadoes between 2008 and 2015*. American Geophysical Union Fall Meeting, San Francisco, CA, Dec 2015
- **Etten-Bohm, M.**, R. Wade, Oct 2015: *Tornadogenesis within Hurricanes: A Study of All Tropical Cyclone Tornadoes between 2008 & 2015*. Von Braun Symposium, Huntsville, AL