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ElizabethSmith

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CURRENT APPOINTMENTS

2020–Present **National Oceanic and Atmospheric Administration – National Severe Storms Laboratory** Norman, Oklahoma
Research Meteorologist
I work as an observationalist leading research on boundary layer processes relevant to convection initiation and pre- and near-storm severe weather environments. More information available on my webpage.

2020–Present **University of Oklahoma Cooperative Institute for Mesoscale Meteorological Studies** Norman, Oklahoma
Research Fellow

2021–Present **University of Oklahoma School of Meteorology** Norman, Oklahoma
Affiliate Assistant Professor

EDUCATION

Dec. 2018 **Doctor of Philosophy** in Meteorology University of Oklahoma
Dissertation Title: *The Great Plains Nocturnal Low-Level Jet: Spatial and Temporal Evolution*

May 2017 **Master of Science** in Meteorology–Concurrent enrollment University of Oklahoma
Non-thesis Master of Science awarded based on General Examination for Ph.D. Candidacy

May 2014 **Bachelor of Science** in Earth Science–Meteorology California University of Pennsylvania
Summa Cum Laude
Minor: Mathematics
Minor: Geographic Information Science–Emergency Management

PROFESSIONAL EXPERIENCE

2018–2020 **Cooperative Institute for Mesoscale Meteorological Studies** Norman, Oklahoma
Post-Doctoral Research Associate, Adviser: Mike Coniglio (NSSL)
I focused on development and deployment of NSSL boundary-layer profiling systems, as well as the exploration of experimental systems to advance our understanding of severe convective weather and the consideration of systems that could enhance the NOAA upper-air observing network.

2014–2018 **University of Oklahoma - School of Meteorology** Norman, Oklahoma
Graduate Research Assistant, Advisers: Dr. Petra Klein and Dr. Evgeni Fedorovich (OU-SoM)
As part of the Boundary Layer Integrated Sensing and Simulation (BLISS) group, my research focused on nocturnal low-level jets and nocturnal boundary layers using numerical simulation methods and meteorological observing platforms. I also maintained the BLISS group webpage.

TEACHING EXPERIENCE

2019–Present **University of Oklahoma - School of Meteorology** Norman, Oklahoma
Instructor
I lead the Boundary Layer, Urban Meteorology, and Land-Surface Processes Seminar series, which includes scheduling seminars, acting as seminar moderator, and instructing and evaluating enrolled students. In this role I have been involved with the implementation of new peer-review activities (2018) and work each semester to provide additional development opportunities for enrolled students.

2015–2018 **University of Oklahoma - School of Meteorology** Norman, Oklahoma

Teaching Assistant

I instructed and helped develop the laboratory portion of Meteorological Measurement Systems, a writing intensive junior level course in the meteorology curriculum, teaching students about calibration and observation techniques. I developed new material to enhance the instruction on scientific writing, modernized components of lab experiments, developed python based coding homework assignments, and offered coding and writing help sessions in addition to regular office hours. I also guest lectured in the lecture component of the course.

LEAD-AUTHOR PUBLICATIONS

*denotes student mentee author

Smith, E. N., M. C. Coniglio, and S. M. Waugh, 2020: An intercomparsion of near-storm wind observations by Doppler Lidar and radiosondes, in preparation

Smith, E. N., J. G. Gebauer, P. M. Klein, E. F. Fedorovich, J. A. Gibbs, 2021: Spatial and temporal characteristics of Great Plains nocturnal low-level jets, in preparation.

Smith, E. N., *B. R. Greene, *T. M. Bell, W. G. Blumberg, *R. Wakefield, *D. Reif, *Q. Niu, *Q. Wang, D. D. Turner, 2021: Evaluation and applications of multi-instrument boundary layer thermodynamic retrieval profiles, Bound. Layer Meteor., in review

Smith, E. N., J. G. Gebauer, P. M. Klein, E. Fedorovich, and J. A. Gibbs, 2019: The Great Plains low-level jet during PECAN: observed and simulated characteristics. Mon. Wea. Rev, **147**, 1845–1869. doi:10.1175/MWR-D-18-0293.1

Smith, E. N., J. A. Gibbs, E. Fedorovich, P. M. Klein, 2018: WRF model study of the great plains low-level jet: Effects of Grid Spacing and Boundary Layer Parameterization. J. Appl. Meteor. Climatol., **57**, 2375-2397. doi:10.1175/JAMC-D-17-0361.1

Smith, E. N., E. Fedorovich, A. Shapiro, 2016: Comparison of analytical descriptions of nocturnal low-level jets within the Ekman model framework. Environ. Fluid. Mech., **17**, 485-495. doi:10.1007/s10652-016-9502-z

COLLABORATIVE PUBLICATIONS

*denotes student mentee author

*Spencer, M. R., **E. N. Smith**, P. M. Klein, 2021: Contribution to convection initiation by heterogeneity within the nocturnal low-level jet, paper in preparation. (Predecessor paper available online here)

Butterworth, B. J., A. R. Desai, S. Metzger, P. A. Townsend, M. D. Schwartz, G. W. Petyy, M. Mauder, H. Vogelmann, ... **E. N. Smith**, ... and co-authors, 2021: Connecting Land-Atmosphere Interactions to Surface Heterogeneity in CHEESEHEAD 2019. Bull. Amer. Meteor. Soc., 102(2), E421-E445.

McFarquhar, G., **E. N. Smith**, E. Pillar-Little, ... and co-authors, 2020: Workshop on Current and Future Uses of UASs for Improved Forecasts/Warnings and Scientific Studies. Bull. Amer. Meteor. Soc., 101 (8), E1322-E1328

Potvin, C. K., P. S. Skinner, K. A. Hoogewind, M. C. Coniglio, J. A. Gibbs, A. J. Clark, M. L. Flora, A. E. Reinhart, J. R. Carley, **E. N. Smith**, 2020: Assessing systematic impacts of PBL schemes in the NOAA Warn-on-Forecast System. Mon. Wea. Rev., 148, 2567–2590

STUDENT WORKS

*denotes student mentee author

*Spencer, M. R., **E. N. Smith**, P. M. Klein, 2020: Exploring Great Plains Nocturnal Low-Level Jet Heterogeneity and Connections to Convection Initiation, 20th Symposium of Meteorological Observation and Instrumentation, Boston, MA, American Meteorological Society, talk

*Laser, J., P. S. Skinner, M. C. Coniglio, **E. N. Smith**, 2020: Evaluation of the Warn-on-Forecast System with Doppler Lidar and Radiosonde Observations from TORUS2019, 10th Conference on Transition of Research to Operations, Boston, MA, American Meteorological Society, poster

*Meister, N. C., *J. T. Cuellar, **E. N. Smith**, D. Reif, 2020: Doppler Lidar Observations of the Vertical Velocity Preceding Thunderstorm Outflow over the Great Plains, 19th Annual Student Conference, Boston, MA, American Meteorological Society, poster

FUNDED RESEARCH

2020-2022 **Co-PI, DOE/OSBER/ASR – IPAQS-WBL** $400,000

Idealized Planar-Array Study for Quantifying Spatial heterogeneity in warm boundary layers

Submitted

Eric Pardyjak (Univ. Utah, PI), Marc Calaf (Univ. Utah, Co-PI), Jeremy Gibbs (NSSL, Co-PI)

The effects independently generated by surface roughness, thermal, and moisture surface heterogeneities interact with each other, leading to the formation of persistent secondary circulations (PSCs) that significantly perturb the atmospheric boundary layer, including the SEB closure. In this work, we aim to understand how different sources of heterogeneity interact when combined together in comparison to single sources of heterogeneity acting in isolation. We further hypothesize that the development of PSCs can be included in numerical weather prediction (NWP) and climate models by modifying atmospheric surface layer (ASL) and planetary boundary layer (PBL) schemes by using either deterministic dispersive fluxes or physically-based stochastic perturbation (PSP) schemes. The goal of this project is to leverage the experience and knowledge recently gained by the PIs through the first IPAQS to develop new knowledge about the impacts of surface heterogeneities (i.e. roughness, heat, and moisture).

2020-2022 **Collaborator, NOAA/WPO – UAS and High Impact Weather** $575,000

Analysis and OSEs of UAS observations for improved high impact weather forecasts

Submitted

Nusrat Yussof (CIMMS/NSSL, PI), Phil Chilsom (OU), Katie Wilson (CIMMS/NSSL), Tyler Bell (CIMMS/NSSL), Elizabeth Pillar-Little (OU), Todd Lindley (NWS), Stephen Bieda (NWS), Chris Fiebrich (OKMesonet)

This study proposes to demonstrate the utility of the affordable Uncrewed Aerial System (UAS) observing technologies for the analysis and prediction of adverse weather phenomena resulting from springtime supercell storms, summertime mesoscale convective systems, and winter storms. Specifically, this study will build UASs and deploy them in the central United States to collect vertical profiles of pre-storm and during-storm environments. The collected UAS temperature, moisture, and wind observations of the planetary boundary layer (PBL) will be analyzed via NWP observing system experiments, assimilated in NSSL's Warn on Forecast System, and explored with National Weather Service (NWS) forecasters.

2020-2021 **Co-PI, NOAA - DOE Inter-agency Agreement Year 1** $12,500

American Wake Experiment (AWAKEN)

February 2020–October 2021

David D. Turner (GSL, PI), Alan Brewer (CSL, Co-PI), Kathy Lantz (GML, Co-PI), Joseph Olson (CIRES/GSD, Co-PI), James Wilczak (PSL, Co-PI)

AWAKEN will focus on understanding how the wakes from turbines in a wind farm affect the overall efficiency of wind farm, and how this depends on atmospheric conditions. This field campaign will be conducted at / near the DOE Atmospheric Radiation Measurement (ARM) site in north-central Oklahoma. NOAA staff will contribute to AWAKEN by helping to refine the experimental design of the field campaign, developing and deploying a highly mobile truck-based wind lidar, and providing expertise on ground-based thermodynamic profiling.

2021 **PI, NOAA/OAR/OWAQ – Boundary Layer Continued Support** $117,000

SPLASH--SAIL and continued PBL Analyses

Jan 2021–October 2021

Tyler Bell (CIMMS, Co-PI)

This project supports completing analysis of data collected during the CHEESHEAD deployment period (see funded research: NOAA/OAR/OWAQ – Boundary Layer). In addition, this funding supports the deployment of CLAMPS2 to Crested Butte, CO as part of the SPLASH-SAIL campaign in 2021. This cross-NOAA-lab endeavor aims to analyze these observations with a variety of research foci. NSSL will focus evaluating PBL evolution and comparing it to datasets in other locations and seasons.

2020-2022 **Co-PI, DOE/OSBER/ASR – TRACER--CUBIC** $300,000

Coastal Urban Boundary-layer Interactions with Convection (CUBIC)

June 2021–June 2024

Petra M. Klein (OU School of Meteorology, PI), Jeremy A. Gibbs (CIMMS, Co-PI), Elizabeth N. Smith (NSSL, Co-PI), Timothy J. Wagner (Co-PI, Univ. Wisconsin), Michael C. Coniglio (NSSL, Collaborator), David D. Turner (ESRL, Collaborator)

The proposal supports the collection of continuous, high-resolution data sets that provide information about the spatial variability of boundary layer processes and thermal circulation patterns in a highly urbanized, coastal region. The boundary-layer observations will add significant value to the convective cloud observations collected during the already funded TRACER project. The observations will be supplemented by numerical simulations and integrated data products to allow us to address several research questions surrounding urban, and sea-breeze effects on boundary layer development and convection initiation.

2020-2021 **Co-PI, CIMMS Director's Discretionary Research Fund – Boundary Layer Height** $37,000

Evaluating Polarimetric Retrievals of Boundary Layer Height Using State-of-the-Art Boundary Layer Profiling

July 2020–June 2021

Jacob Carlin (CIMMS, PI)

This project supports data collection and analysis to evaluate a proposed method of BL height detection from operational WSR-88D dual-polarization radar (Banghoff et al. 2018). Using state-of-the-art boundary layer profilers, the proposed method will be evaluated beyond synoptic times. Additionally data collection at varying sites and distance-from-radar will enable some additional insight into the method's performance.

2020-2021 **PI, NOAA/OAR/OWAQ – Boundary Layer Analysis** $117,000

Chequamegon Heterogeneous Ecosystem Energy-balance Study Enabled by a High-density Extensive Array of Detectors (CHEESEHEAD) Analysis

February 2020–January 2021

Petra M. Klein (OU School of Meteorology, Co-PI), Michael C. Coniglio (NSSL, Co-PI), Tyler Bell (CIMMS, Co-PI)

This project supports analysis of data collected during the CHEESHEAD deployment period (see funded research: NOAA/OAR/OWAQ – Boundary Layer).

2019-2021 **PI, NOAA/OAR/OWAQ – VORTEX-SE** $293,423

Defining the capabilities of boundary layer profiling systems for operations in the southeastern United States

September 2019–September 2021

Michael C. Coniglio (NSSL, Co-PI), Sean M. Waugh (NSSL, Co-PI), David D. Turner (ESRL, Collaborator)

This project uses previously collected boundary layer profile observations from multiple years of VORTEX-SE in three research areas: observation data will be used to evaluate the boundary layer profiling platforms themselves, inform future deployments of such platforms, evaluate the existing tools often used in public forecast and warning operations, and document rapidly evolving pre-convective environments in the southeastern US. This project funds a full time research assistant and an undergraduate student.

2019 **PI, NOAA/OAR/OWAQ – Boundary Layer** $141,750

Chequamegon Heterogeneous Ecosystem Energy-balance Study Enabled by a High-density Extensive Array of Detectors (CHEESEHEAD) Data Collection

April 2019–September 2019

Petra M. Klein (OU School of Meteorology, Co-PI), Michael C. Coniglio (NSSL, Co-PI), Pamela Heinselman (NSSL, Co-PI), Doug Kennedy (NSSL, Collaborator)

This project supports the deployment of both CLAMPS platforms in northern Wisconsin as part of a targeted network of high-quality observing systems that fully characterize the surface conditions over model grid scales and the overlying atmosphere up to 3 km would provide the kind of information that allows a more descriptive understanding of the processes that drive the exchange of energy and mass between the land and the atmosphere.

STUDENT MENTORING & PERSONNEL MANAGEMENT

2020–Present **Katie Giannakopolous, University of Oklahoma** School of Meteorology
Supervisor
I oversee and help manage an undergraduate student researcher through my role as Co-I on the 2020 CIMMS DDRF funding with Jacob Carlin. This student works with CLAMPS and dual-pol radar data to help us understand capabilities of each platform to retrieve boundary layer height.

2020–Present **Arianna Jordan, University of Oklahoma** School of Meteorology/CIMMS/NSSL
Advisor
I co-advise one PhD student, funded to work at OU-SoM in collaboration with the Pacific Northwest National Laboratory. The student is co-advised by Dr. Petra Klein, OU School of Meteorology and Sonia Wharton, Pacific Northwest National Laboratory. The student will use state-of-the-art observations and high resolution numerical simulations to study boundary layers in the vicinity of large wind energy farms to understand complex interactions, including potential impacts to convection initiation.

2020–Present **Nolan Meister, University of Oklahoma** School of Meteorology/CIMMS/NSSL
Advisor
Via funding awarded through the CHEESEHEAD analysis award, I advise one masters student. The student works on quantification of boundary layer characteristics during CHEESEHEAD and analysis of a 2-day severe linear storm event. This case study includes state-of-the-art observation analysis and evaluation of the NSSL Warn On Forecast System's performance. The student is co-funded and co-advised by Dr. Petra Klein, OU School of Meteorology.

2020–Present **Tyler Bell, CIMMS/NSSL** School of Meteorology/CIMMS/NSSL
Supervisor
I support and manage a full-time CIMMS research associate researcher through my NOAA/OWAQ/VORTEX-SE grant. The researcher focuses on evaluation, development, and support of thermodynamic retrieval algorithms and data system workflows. In this case, this employment opportunity also allows the employee to continue pursuing a doctoral degree.

2019–Present **Tyler Pardun, University of Oklahoma** School of Meteorology/CIMMS/NSSL
Supervisor
I support and manage an undergraduate student researcher through my NOAA/OWAQ/VORTEX-SE grant. The student works on gathering, quality checking, and synthesizing boundary layer observations collected during multiple years of VORTEX-SE deployments and collaborates with the research team to conduct research supporting the grant's goals.

2019–Present **Jordan Laser, University of Oklahoma** School of Meteorology/CIMMS/NSSL
Adviser
I act as an unofficial, but involved member on the advisory committee of a OU SoM MS student. Since rules require SoM Faculty to be in the majority, adding me to the committee in a formal capacity would make the committee unnecessarily large. I do however serve in an advisory role assisting this student with the use of mobile Doppler lidar data in a storm-scale ensemble model verification experiment and guiding education in observation collection and application principles.

2019–2020 **Nolan Meister and James Cuellar, University of Oklahoma** School of Meteorology
Capstone Mentor
I currently mentor a senor capstone team on a project focused on the mechanisms supporting updraft generation ahead of outflow boundaries using TORUS lidar observations. Co-mentor: Dylan Reif, University of Oklahoma.

2019–2020 **Marisa Nuzzo and Maci Gibson, University of Oklahoma** School of Meteorology
Capstone Mentor
I currently mentor a senor capstone team on a project focused on evaluating the relationship between hodograph shape and supercell and environmental characteristics. Co-mentor: Matt Flournoy, University of Oklahoma, NSSL.

2019–Present **Michelle Spencer, Metropolitan State Univ. Denver** National Weather Center REU
Mentor
I mentored an undergraduate student on a summer research project focused on the connections between nocturnal low-level jets and convection initiation during the 2019 REU. Michelle has completed her BS and is now in the MS program at Univ. Wisconsin Milwaukee. We continue to collaborate to advance the work, resulting in an AMS presentation and a planned article submission.

FIELD WORK

2021 **CLAMP-EOL Collaboration** OU/CIMMS/National Severe Storms Laboratory
Science Lead
I led an effort to design a month long deployment of the CLAMPS-1 facility to the Marshal field site in Boulder, CO in collaboration with EOL. This deployment provides opportunity to support EOL's progress toward LOTOS and build new collaborations between EOL and the BLISS boundary layer communities.

2021 **BLISS-FUL** OU/CIMMS/National Severe Storms Laboratory
Field and Science Lead
I led an effort to design, propose and execute a month long test deployment of boundary layer sensors that NWC community members have for testing, evaluation, science, and training, called the BLISS Field Universalization Lab. This effort included opportunities for students to submit their own IOP requests to try their hand at planning field missions.

2021 **UAS Damage Survey Project** CIMMS/National Severe Storms Laboratory
Field Support Scientist
In support of a NSSL/CIMMS project deploying uncrewed aircraft to image and collect measurements over tornado paths, I deployed multiple times to the southeast US. These deployments included traditional damage survey work, collaboration with the NWS, interaction with the public, and understanding and cooperation with implementation of state-of-the-art platforms.

2021 **VORTEX-SE/PERiLS** National Severe Storms Laboratory
Field Planning Lead
While field deployments were deployed due to COVID-19, I moved into a leading role in considering and planning boundary layer profiling deployments for future missions. This work involves working with academic and research partners from several institutions.

2020 **CIMMS DDRF - Boundary Layer Height** CIMMS/National Severe Storms Laboratory
Field Lead
In support of PI Carlin's CIMMS DDRF proposal, I led the design, organization, and deployment of two mobile boundary layer profiling platforms across three sites (one stays stationary, one re-deploys at a new site) for a 4-week mission. This role included oversight and management in addition to technical expertise, data collection, and data management. I also developed new algorithms for BL height detection for this deployment.

2019-Present **Targeted Observation by Radars and UAS of Supercells** CIMMS/National Severe Storms Laboratory
Field Scientist
I helped in development (including hardware and software design) and led deployment of a platform enabling NSSL mobile single- and dual-lidar observations in the vicinity of storms. This role includes independent leadership and management roles including mentoring students, advising PI team on pre-convection deployments, coordinating mobile lidar deployments, field-coordination of the full field team during pre-convection deployments, and creating and disseminating final observation data.

2017 **Perdigão** OU School of Meteorology
Field Scientist
During this field campaign, I served as group lead for the OU team operating a profiling system (mini-CLAMPS) and assisted NCAR in releasing radiosondes to measure atmospheric flow in complex terrain over a double hill in Perdigão, Portugal.

2016 **Mini-Mesoscale Predictability Experiment (mini-MPEX)** National Severe Storms Laboratory
Field Scientist
During this field campaign, I operated a mobile profiling platform (NOAA-NSSL CLAMPS2) and released radiosondes to observe near- and far-field environments near severe supercell thunderstorms.

2015 **Plains Elevated Convection At Night (PECAN)** OU School of Meteorology
Field Scientist
During this field campaign, I operated a mobile profiling platform (OU-NSSL CLAMPS1) and released radiosondes to observe nocturnal environments important to understanding nocturnal convection in the Great Plains of the United States such as mesoscale convective systems, bores, convection initiation, and low-level jets.

DIVERSITY, INCLUSION, AND EQUITY WORK

I place high value on the need for institutional and community efforts to increase diversity, inclusion, and equity in STEM spaces. I have highlighted my own work in this area separate from other service efforts here. I did not include related training in this section, but it can be found in the Professional Training section below.

2021 **Women of AG&S Panel and Discussion** OU
Panelist and leader on Women in Fieldwork and Beyond

2020–Present **Letters to a Pre-scientist** OU
Pen-pal letter writer

2020–Present **College of Atmospheric and Geographic Science Diversity and Inclusion Council** OU
Affiliate member and NSSL liaison

2020–Present **NSSL Diversity and Inclusion Sustainability Team (NDIST)** NSSL
Member. This team was formed as part of the NSSL Diversity and Inclusion Plan.

2019–2020 **TORUS Training Development** CIMMS/NSSL
I worked with the TORUS PI-team ahead of field-deployment to develop training procedures and provide clear documentation of unacceptable behavior, repercussions, and reporting procedures.

2019 **EPSCoR-OK Women in Science Conference Demo Leader** SoM/CIMMS/NSSL
I worked with a team of SoM, CIMMS, and NSSL women at the grade 6-12 Women in Science Conference, where girls could engage in hands-on science activities, learn first-hand about science and technology career opportunities from Oklahoma's top female scientists and engineers, and receive college preparation information from Oklahoma college, university and outreach representatives.

2019 **Guest on Yes! Science Show** The Show Starts Now Studios
I was brought in as a special guest for Season 3 Episode 4 of the Yes! Science Show, which aims to show science is for EVERYONE by highlighting scientists from often underserved groups and allowing them to speak about their work, experiences, challenges, and steps to success. My interview is available online here.

2019 **National Weather Center Protocol** National Weather Center
Authored a document for participants in National Weather Center partner activities intended to prevent negative behaviors including harassment, discrimination, and assault and provide support to any potential victims of such behavior. This document was approved by the OU Legal office and is now used by all NWC partners.

2018–2020 **Diversity and Inclusion Committee** CIMMS
Member of the founding committee

2017–Present **Classroom Outreach**
I video chat (via Skype-A-Scientist) or visit with several K–12th grade classrooms across the US. I like working with younger students, as I believe recruitment to science must start before high school. In these efforts, I identify myself as a female identifying first-generation college graduate from a rural, blue-collar upbringing to highlight diversity in what scientists look like and that science needs people from all walks-of-life.

2017 **Women in the School of Meteorology** OU School of Meteorology
Conducted a survey reviewing women's experiences in the SoM for Academic Performance Review and to assist administration in efforts to improve the experience of women in science.

TECHNICAL SKILLS

Python (proficient) , MATLAB (proficient) , LaTeX (proficient), Weather Research and Forecast (WRF) Model (proficient), HTML (working knowledge), Unix (working knowledge), ArcGIS (working knowledge), HPC platforms (working knowledge)

HONORS AND AWARDS

2020	**OAR EEO/Diversity Award for Exemplary Service**	NOAA OAR
2019	**Douglas Lilly Paper Award (for 2019 MWR Publication)**	OU School of Meteorology
2018	**Outstanding Poster Award**	Oklahoma Women Impacting STEM and Entrepreneurship Conference
2017	**Director's Recognition for Service to the Department**	OU School of Meteorology
2017	**First Place Student Oral Presentation, 24th Conference on NWP**	American Meteorological Society
2016	**Faculty Recognition for Outstanding Performance as a Graduate Student**	OU School of Meteorology
2014–2015	**Lockheed Martin Graduate Fellowship**	American Meteorological Society
2013	**Michael A Roberts, Jr. Undergraduate Scholarship**	American Meteorological Society
2013	**NOAA Science and Education Symposium Award**	National Oceanic and Atmospheric Administration
2012–2014	**NOAA Ernest F. Hollings Scholarship**	National Oceanic and Atmospheric Administration
2012	**Phillips Family Scholarship**	National Weather Association
2010-2014	**Presidential Scholar**	California University of Pennsylvania

PROFESSIONAL SERVICE

2020–Present **Alternate Representative for NSSL** — NOAA
OAR EEO Advisory Committee

2020–Present **Associate Editor** — American Meteorological Society
Monthly Weather Review

2016–Present **Peer-reviewer**
Boundary layer meteorology, Monthly Weather Review, Quarterly Journal of the Royal Meteorological Society, Journal of Applied Meteorology and Climatology, Tellus

2018–2019 **Student Conference Volunteer** — American Meteorological Society
Poster competition judge

2017 **Graduate Studies Committee** — OU School of Meteorology
Student representative for Direct-Track Ph.D. documentation in the Graduate Student Handbook

2016–2018 **Student Affairs Committee** — OU School of Meteorology
Doctoral representative. I planned two large fundraiser event for the NWC community and developed a student-focused professional development series in this role.

2016–2017 **Faculty Search Committee** — OU School of Meteorology
Student representative to the search committee for two new faculty hires

2015–2019 **Boundary-Layer, Urban Meteorology, and Land-Surface Processes Seminar Series** — OU School of Meteorology
Co-Convener and webpage manager

2013–2016 **Local Chapter Affairs Committee** — American Meteorological Society
Member(2013-2015), Chair(2016) serving to connect and enhance local chapters of the AMS.

VOLUNTEER SERVICE

2020–Present **NSSL Book Club Lead** NSSL

I designed and continue to lead a book club for NSSL employees, which serves both to foster community and to approach and discuss important themes such as race, gender, class, and other intersectional experiences.

2019–Present **Vice Chair, Board of Trustees** National Weather Museum and Science Center

As of 2021, I am now Vice Chair of the Board. Prior, I served as member of National Weather Museum and Science Center board of trustees, guiding the vision and future of the museum, and recruiting volunteers.

2018–Present **Museum Docent** National Weather Museum and Science Center

I volunteer at the National Weather Museum and Science Center giving tours to patrons and assisting with museum upkeep and events.

PROFESSIONAL TRAINING

2020 **Office of Diversity and Inclusion's Unlearning Series** University of Oklahoma

The "Unlearning" series is intended to help the campus community have safe and meaningful conversations about differences, to increase awareness of personal and community bias, and to promote inclusion at work and in the classroom. The 4-part series includes Unlearning Racism, Ableism, Sexism, and Classism.

2019 **Leadership Skills for Success in the Scientific Workforce** Earth Science Women's Network

Supported by NOAA, UCAR/NCAR, and CU-Boulder, this 2.5 day workshop was intended for people who identify as women and are employed in the sciences, especially those employed in scientific agencies and scientific organizations. Workshop topics included understanding your own strengths and weaknesses, strategies for effective communication, team building to promote motivation and trust, guidance in giving and receiving feedback, articulating your personal value, and strategies for identifying and overcoming challenges to becoming a more effective leader. This workshop offered a unique opportunity for women across scientific disciplines and career levels to build their leadership and management skills.

2019 **Addressing Bias in Professional Relationships: From the Office to the Field** Association of Polar Early Career Scientists

This webinar format short training covered discussion of bias (particularly experienced by women) in science careers and tools to address it both as a target and as a bystander.

2019 **'Our Voice' Active Bystander Training** University of Oklahoma

The mission of the Our Voice campaign is to educate the campus community on the realities of gender-based violence and how to intervene when they encounter problematic behavior or instances of sexual harassment, sexual assault, dating violence, or stalking.

2015 **LGBTQ Ally Training** University of Oklahoma

Completing LGBTQ Ally training provides the awareness, knowledge, and skills to confront injustice and advocate for equality, while supporting all persons, regardless of perceived or actual sexual orientation, gender identity, or gender expression, who are experiencing discrimination in the OU community.

2015 **ARM Summer Training and Scientific Applications event** US Dept. of Energy - ARM

Organized by the Atmospheric Radiation Measurement (ARM) Climate Research facility, this summer training provided theoretical and practical instruction on instruments from the Southern Great Plains site and encouraged innovative methods for using ARM facilities to address complex scientific inquiries.