Brian C. Filipiak

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Education

University of Connecticut **Storrs, CT**

Doctor of Philosophy in Environmental Engineering *Jan 2023 – Present*

- Research funded by Eversource Energy Center, NASA
- NASA FINNEST Proposal Selected: Refinement of Snow Microphysics and Density Forecasting Using GPM Ground Validation Observations and NU-WRF

State University of New York at Albany **Albany, NY**

Master of Science in Atmospheric Science *Aug 2020 – Dec 2022*

- Thesis: Probabilistic Winter Mixed Precipitation Forecasts Utilizing a Random Forest in New York
- Research funded by NOAA CSTAR grant

University of Rochester **Rochester, NY**

Bachelor of Science in Environmental Science: Climate Science track, Magna Cum Laude *Aug 2016 – May 2020*

- Certificate in Community Engaged Scholarship

Research Experience

University of Connecticut **Storrs, CT**

Research Assistant, Dr. Marina Astitha and Dr. Diego Cerrai *Jan 2023 – Present*

- Analyze the impact of initial and boundary conditions on Weather Research and Forecasting (WRF) model simulations for Northeast United States snowstorms
- Collaborate with NASA GPM Ground Validation and associated researchers to carry out winter precipitation field campaign including forecasting for two Intense Observing Periods utilizing an Unmanned Aerial System
- Prepare, evaluate, and manage data collected from NASA field campaign to be used for future research
- Provide weather expertise to improve development of machine learning models for power outage prediction for multiple electrical utility companies (Eversource, Exelon, and Dominion Energy)
- Generate and issue operational power outage forecasts for Eversource and United Illuminating (Avangrid)
- Mentor fellow graduate students in research roles
- Developed and executed an internship plan for the 2024 Summer Intern to ensure varied exposure to data analysis and quality control

State University of New York at Albany **Albany, NY**

Research Assistant, Dr. Kristen Corbosiero, Dr. Andrea Lang, Ross Lazear, and Dr. Nick Bassill *Aug 2020 – Dec 2022*

- Focused on improving prediction of winter precipitation types by developing and maintaining a random forest machine learning that assimilated multiple common data sources to identify rain, snow, freezing rain and sleet
- Partnered with NWS stakeholders to maintain relationships; ensured open lines of communication; reviewed cases of uncertain winter precipitation events; strategized on random forest algorithm implementation and operational product design to display research results
- Fostered relationships for open lines of communication between NWS collaborators and UAlbany research team
- Cultivated and maintained a website (http://www.atmos.albany.edu/student/filipiak/op/) that contains the probabilistic nowcasts and forecasts from the random forest algorithm as well as other information about the project

Texas A&M University – National Science Foundation Research Experience for Undergraduates **College Station, TX**

Research Assistant, Dr. Christopher Nowotarski *Jun 2019 – Aug 2019*

- Researched spatial and diurnal variability of near cell environments for tornadic and non-tornadic cells and forecasting in tropical cyclones
- Examined the spatial and diurnal variability of near cell environments for tornadic and non-tornadic cells

- Created database of tornadoes and tornado warnings produced in tropical cyclones

Publications

- Filipiak, B. C., and Coauthors, 2024: Winter Precipitation Measurements in New England: Results from the Global Precipitation Measurement Ground Validation Campaign in Connecticut. *Earth Syst. Sci. Data, in review*
- Filipiak, B. C., N. P. Bassill, K. L. Corbosiero, A. L. Lang, and R. A. Lazear, 2023: Probabilistic Forecasting Methods of Winter Mixed Precipitation Events in New York State Utilizing a Random Forest. *Artif. Intell. Earth Syst.,* https://doi.org/10.1175/AIES-D-22-0080.1.

Graduate Teaching Experience and Campus Leadership

University of Connecticut **Storrs, CT**
Air Pollution Control *Jan – May 2023, 2024*

- Held office hours to assist students with course work
- Graded assignments, papers, and exams to assess student understanding of coursework

State University of New York at Albany **Albany, NY**
Atmospheric Structure, Thermodynamics, and Circulation; The Atmosphere *Aug 2020- Dec 2022*
Atmospheric Dynamics; Weather, Climate Change and Societal Impacts

- Held office hours to assist students with course work
- Graded assignments, papers, and exams to assess student understanding of coursework

Department of Atmospheric and Environmental Sciences Graduate Student Organization **Albany, NY**
President *May 2021– May 2022*

- Served as a liaison between graduate students and University administrators, faculty, and staff
- Motivated other graduate students to be engaged both inside and outside of the department to facilitate retention
- Supervised and supported a board of peers who planned departmental gatherings, mentorship programs, and social events

Professional Affiliations, Certifications, and Awards

- American Meteorological Society Energy Committee Student Member: 2024-Present
- American Meteorological Society Board of Enterprise Economic Development Student Member: 2023-Present
    - Maintain accurate records and notes from committee meetings
- American Geophysical Union Hydrology Precipitation Technical Committee Member: 2023-Present
- American Meteorological Society Board of Private Sector Meteorologists Student Member: 2023
    - Curated content and ran a twitter campaign promoting various private sector meteorological careers
- 103rd AMS Annual Meeting/22nd Conference on Artificial Intelligence for Environmental Science Oral Presentation Award: Honorable Mention
- FEMA Independent Study Certificates: Professional Development Series: completed July 2020
- American Geophysical Union Member: 2024-Present
- American Meteorological Society Member: 2019-Present
- Phi Beta Kappa Member: 2020-Present

Technical Skills

- Fluent with Microsoft Office, Google Suite, Linux computing environments, and Python
- Proficiency with handling numerical weather model output including compile and running components of Weather Research and Forecasting (WRF) model
- Working understanding of ArcGIS, MATLAB, R, NCAR Computing Language (NCL), basics of website design and development, and various machine learning technique