

Samuel J. Porter

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Weather Demo Reel: <https://youtu.be/pSw1KY2BwKU> *LinkedIn:* www.linkedin.com/in/sam-porter-bb056626b

EDUCATION

Masters of Science (Atmospheric Sciences) *Expected 05/2026*

The Ohio State University, College of Arts and Sciences *Columbus, OH*

GPA: 4.0

Advisor: Dr. Jana Houser

Committee: Dr. Steven Quiring & Dr. Man-Yau (“Joseph”) Chan

Research Focus: Reanalysis of Severe Weather & Tornadoes

Bachelor of Atmospheric Sciences *08/2021-05/2024*

The Ohio State University, College of Arts and Sciences *Columbus, OH*

Major GPA: 3.88 | Cumulative GPA: 3.56

RELAVENT COURSEWORK

Microclimatological Measurements	Synoptic Analysis and Forecasting	Calculus I, II, and III
Boundary Layer Climatology	Synoptic Meteorology Lab	Differential Equations
Dynamic Meteorology I and II	Severe Storm Forecasting	Physics I and II
Atmospheric Thermodynamics	Atmospheric Physics	Chemistry I
Basic Meteorology	Principles of Oceanography	Statistics
Cartography and Map Design	Developing Geographical Thought	Geovisualizations
Applied Climatology	AI in Earth Sciences	Data Assimilation

RESEARCH EXPERIENCE

Using Machine Learning to Estimate Ground Hail Size, The Ohio State University

10/2025 – 12/2025

- Trained and evaluated multivariate regression models to estimate surface hail size; assessed performance using RMSE and R^2
- Developed a spatially and temporally matched dataset linking doppler radar MESH with NCEI ground truth observations.
- Utilized ArcGIS Pro and Python (Pandas, ArcPy, NumPy) to perform data extraction, coordinate matching, and analyzing over 50,000 georeferenced points

PHEER: Public Health Extreme Events Research: Hurricane Milton & Helene, The Ohio State University

Advisor: Dr. Jana Houser

10/2025 – Present

Dr. Diana Ramirez-Rios (University of Buffalo), Dr. Nick Kman (The Ohio State University) Judith Brennan & Angelos Soto – Parkes (University of Buffalo)

- Served as the co-lead meteorological data scientist on an interdisciplinary research team studying weather, health, and population vulnerability following Hurricane Helena and Hurricane Milton.

- Provided data access guidance and documentation for team members unfamiliar with meteorological datasets
- Engaged as a co-author on forthcoming peer-reviewed journal manuscripts

Advancing Precision in Estimating Hail Property Damage, The Ohio State University

Advisor: Dr. Steven Quiring

01/2025 – Present

Startup Company, Provisional Patent

- Co-founded and led the creation of an innovative software-as-a-service (SaaS) platform that delivers real-time hail damage assessments
- Developed a patent-pending algorithm capable of translating data into property-level hail damage probabilities
- Applied machine learning and statistical analysis for damage estimation utilizing Python, GIS, and API integration
- Authored a market strategy targeting a \$127M initial opportunity, with an Ohio-based \$10.7M beachhead market

Investigation of Why Thunderstorms Weaken Nearing the Appalachians, The Ohio State University

Advisor: Dr. Jana Houser

08/2023 – Present

Master's Thesis

- Designed a comparative framework for analyzing environmental parameters influencing tornadogenesis using HRRR Analysis.
- Utilized Python and statistical tools (e.g., Pandas, NumPy, Matplotlib, xarray etc.) for data extraction, visualization, and statistical testing.
- Performed a statistical correlation and variability analysis to identify spatial and temporal patterns in severe weather environments.
- Validated findings through doppler radar, ASOS, and upper-air sounding verification to ensure dataset accuracy and reliability.
- Comparing tornadic environments one hour prior to the tornadic event for 2020, 2021, 2022, 2023, and 2024 outbreaks in the Central Appalachian Region.

108013: NOAA Oversight of Weather Modification, U.S. Government Accountability Office

Advisors: John Neumann, Karen Howard, Katrina Pekar-Carpenter, Jim Rice

05/2025 – 08/2025

- Interned with Government Accountability Office in Washington D.C. in Summer 2025
- Conducted an audit on NOAA's Cloud Seeding and Geo-engineering Reporting Database
- Wrote a literature review on current methods and reporting status of weather modification operations throughout the United States of America
- Presented findings to leadership of GAO and U.S. Congress

24-Hour Accuracy of Three Major Weather Prediction Models, The Ohio State University

Team Lead

08/2023 – 05/2024

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- Installed and maintained temperature/humidity sensor, anemometer, and a tipping bucket rain gauge to collect ground-truth observations of temperature, dewpoint, wind, and precipitation data at 00Z, 06Z, 12Z, and 18Z
- Retrieved 24-hour forecasts from GFS, NAM, and HRRR NWP models for verification
- Aggregated and analyzed observational and model data in Excel to quantify and visualize forecast deviations
- Led team coordination, authored the project proposal, abstract, and final report, and presented analytical findings

Natural Hazard Climatological Risk Assessment, NWS Cleveland

05/2023 – 08/2023

Summer Advisors: Raelene Campbell and Zachary Sefcovic

- Compiled and analyzed multi-hazard datasets (tornado, hail, wind, flood, winter weather, temperature, drought, dam failure) for regional risk assessment
- Conducted county-level climatological risk analyses for Medina and Summit Counties with the Cleveland CWA
- Authored a standardized methodology guide for use by NWS offices in conducting future climatological risk assessments
- Presented findings to NWS Cleveland leadership; results to be distributed to NWS meteorologists and county emergency management partners

TEACHING EXPERIENCE

Graduate Teaching Associate, The Ohio State University, Columbus, OH

1/2026 – Present

GEOG 5200: Cartography and Map Design (40 Students)

Instructor: Dr. Tammy Parece

Graduate Teaching Associate, The Ohio State University, Columbus, OH

08/2025 – 12/2025

GEOG 3900: Global Climate Change (110 Students)

Instructor: Dr. Bryan Mark

Graduate Teaching Associate, The Ohio State University, Columbus, OH

01/2025 – 05/2025

GEOG 2400: Economic and Social Geography (200 Students)

Instructor: Dr. Ariel Rawson

Graduate Teaching Associate, The Ohio State University, Columbus, OH

08/2024 – 12/24

ATMOSSC 5950: Atmospheric Thermodynamics (20 Students)

Instructor: Dr. Jay Hobgood

Tutor, Algebra I

08/2023 – Present

- Developed lesson plans and teach Algebra 1 to students
- Assisted in answering and guiding students in extra mathematical practice



PROFESSIONAL EXPERIENCE

Student Company Founder Trainee, National Science Foundation, Columbus, OH

Course Attendee

09/2025 – Present

- Selected to participate in the National Science Foundation (NSF) Innovation Corps (I-Corps) and BOOST entrepreneurship program, aimed at translating research into viable commercial applications
- Conducted 75 customer discovery interviews and market research to evaluate real-world applications relating to my startup company
- Developed and refined a value proposition and business model
- Collaborated with mentors and industry professionals to assess potential commercialization pathways
- Delivered final presentation and pitch summarizing research impact and commercialization potential to program evaluators and NSF representatives

Physical Scientist Student Trainee, U.S. Government Accountability Office, Washington D.C.

Internship

05/2025 – 08/2025

- Contributed to a GAO audit evaluating NOAA's Cloud Seeding and Geoengineering Reporting Database to assess oversight and transparency of weather modification activities
- Developed multiple Records of Analysis (ROAs), including comparative figures of cloud seeding vs. geoengineering and identification of unreported state-level operations
- Traced and verified (T&V) ROAs, interview trackers, and NOAA database metadata to ensure data integrity and methodological consistency
- Led weekly team meetings to coordinate research progress
- Authored sections of the draft report and presented finding to GAO leadership and members of the U.S. Congress

Student Meteorologist, Medina County Emergency Management & Homeland Security, Medina, OH

Internship

05/2024 – 08/2024

- Led Extreme Weather Training Seminar for 100 attendees across 12 Northeast Ohio counties in partnership with the Medina County Health Department, NECO, and Medical Reserve Corps
- Conducted Doppler Radar Training for the Medina County Communications Team, providing in-depth instruction on radar analysis and tornado forecasting
- Delivered hourly weather forecasts for the Medina City Fireworks event (July 3rd, 2024; 15,000 attendees)
- Served as on-site meteorologist for the Medina County Fair, providing daily briefings to public safety and emergency management officials
- Authored and designed the 2024 Medina County Emergency Mitigation Plan, including meteorological analyses, hazard management, and geospatial visualizations
- Completed the OH-202 Debris Management Workshop (Ohio EMA), enhancing expertise in post-disaster debris coordination and recovery operations

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Meteorologist Intern, WSYX ABC 6, Columbus, OH

Internship

09/2023 – 12/2023

- Strengthened public communication and on-air presentation skills
- Created forecast segments and graphics using MAX Weather and MAX Reality software
- Produced daily forecasts utilizing multiple numerical weather prediction models (GFS, ECMWF, CFS, GEFS, NAM, HRRR)

Student Volunteer Meteorologist, National Weather Service, Cleveland, OH

Internship

05/2023 – 08/2023

- Supported Severe Weather Operations by documenting social media storm reports and field observations.
- Collaborated with NWS meteorologist to prepare and distribute daily public forecasts
- Led morning weather briefings and contributed to operations during the June 15th, 2023 Northwest Ohio tornado outbreak (NWS Public Information Statement: [June 15, 2023 Severe Weather & Tornadoes](#))
- Participated in annual coordination meetings with Ashland and Ottawa County EMA and dispatch officials
- Assisted with hydrological observations at USGS river gauge sites along the Chagrin River.
- Gained hands-on experience with AWIPS for forecast visualization and data analysis

WX Forecasting Challenge, The Ohio State University, Columbus, OH

08/2022 – 02/2023

- Created forecasts daily in different locations within the United States
- Used a combination of GFS, GEFS Plumes, NAM, and HRRR

Retail Summer Associate Leader, Hinckley Lake Boathouse, Hinckley, OH

05/2021 – 10/2023

- Trained and led co-workers in the rental and retail department
- Provided efficient customer service interactions renting out watercraft
- Monitored radar in times of severe weather to ensure safety on the lake

CONFERENCE PRESENTATIONS

Shaffer M.N., **Porter S.**, Baltus D., Giovannucci A., and Beck J.K., (2024) *24-Hour Accuracy of Three Major Weather Prediction Models*, American Meteorological Society Annual Meeting, Baltimore, Maryland, Student Session on Operational and Local Meteorology

Future Conference Presentations:

Porter S., Houser J. (2026) *Why Do Tornadoic Thunderstorms Weaken Nearing the Appalachian Mountains*, American Meteorological Society Annual Meeting, Houston, Texas, Roger Wakimoto Symposium

LEADERSHIP EXPERIENCES

Graduate Studies Committee, Geography Graduate Organization

08/25 – Present



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- Collaborate with faculty and peers to address graduate student feedback and program improvement initiatives
- Provide student representation and perspective on professional development opportunities
- Assist in an evaluation of student award applications and scholarship nominations
- Participate in committee and departmental planning meetings to strengthen graduate education quality and student support systems

Social Chair, Geography Graduate Organization *08/2024 – Present*

- Attend executive board meetings to discuss social events within the Department of Geography
- Coordinate entertaining events for graduate students

Vice President, Meteorology Club *05/2023 – 05/2024*

- Assisted in weekly executive board meetings planning out future events and workshops for undergraduate students
- Planned National Weather Service office visit to Wilmington, OH
- Assisted in organizing and arranging speakers for the 28th Annual Weather, Water, and Climate Symposium, which hosts roughly 300 meteorologists in attendance

Vice President, Chi Epsilon Pi Honor Society, Columbus, OH *05/2023 – 05/2024*

- Led and assisted in weekly meetings alongside the executive board
- Developed workshops and resume builders for undergraduate students in the Atmospheric Science program
- Assisted in developing social events for undergraduate Atmospheric Science students

Supervisor, The Ohio State University Ice Crew *09/2022 – 03/2024*

- Maintained and cleaned the surface of the ice during media timeouts and intermissions at the Schottenstein Center (capacity of 8,000)
- Supervised 13 co-workers and trained new employees prior to men's ice hockey games

Leader of North Campus, CRU Ohio State *03/2022 – Present*

- Led a group of 20 students in Bible Study and discipleship groups weekly
- Cultivated young men towards success in school and mentored students towards their purpose in life

Volunteer Ministry, Columbus Dream Center *08/2021 – Present*

- Provided meals and supplies to the homeless in Columbus, Ohio
- Assisted in providing prayer and joyful hope to individuals on the streets of Columbus

ORGANIZATIONS

Geography Graduate Organization	<i>08/2024 – Present</i>
American Meteorological Society	<i>08/2023 – Present</i>
Chi Epsilon Pi Honor Society	<i>05/2023 – Present</i>
Ohio State Intramural Hockey	<i>08/2022 – Present</i>

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The Ohio State University Athletics Ice Crew	08/2022 – 03/2024
Meteorology Club	08/2021 – Present
Scarlet & Gray Forecasting Team	08/2021 – Present
Geography Club	08/2021 – 05/2024
CRU Ohio State	08/2021 – Present
Columbus Dream Center Volunteer Homeless Ministry	08/2021 – Present

AWARDS AND CERTIFICATES

2023-2024 Taaffe Award	<i>The Ohio State University, Department of Geography</i>
<ul style="list-style-type: none">Highest honor in the department, exemplifies exceptional achievement in the classroom, with research efforts, and outstanding extracurricular pursuits	
2023-2024 Dr. Steven M. Quiring Student Leadership Award	<i>Chi Epsilon Pi Honor Society</i>
Spring 2025 Dean's List	<i>The Ohio State University</i>
Autumn 2024 Dean's List	<i>The Ohio State University</i>
Spring 2024 Dean's List	<i>The Ohio State University</i>
Autumn 2023 Dean's List	<i>The Ohio State University</i>
Spring 2023 Dean's List	<i>The Ohio State University</i>
Autumn 2022 Dean's List	<i>The Ohio State University</i>
Skywarn Trained Observer Certificate	<i>National Weather Service</i>
Ohio Boater's Education Certificate	<i>ODNR</i>
PSE Credit Union Scholarship Recipient	<i>PSE Credit Union</i>
High School Salutatorian	<i>Cuyahoga Valley Christian Academy</i>
High School STEM Honors Diploma	<i>Cuyahoga Valley Christian Academy</i>

TECHNICAL SKILLS

- Data Analysis & Programming:** Python (Pandas, NumPy, Matplotlib, xarray, Cartopy), Excel
- GIS & Spatial Analysis:** ArcGIS Pro, ArcMap, ArcGIS, QGIS
- Meteorological Systems:** AWIPS, Campbell Scientific Loggernet
- Atmospheric Analysis:** ERA5 Reanalysis, HRRR Analysis, RAP Analysis
- Communication & Visualization:** MAX Weather, MAX Reality, Microsoft Word, PowerPoint

GENERAL SKILLS

- Entrepreneurship & Technology Commercialization
- Public Speaking
- Project Management & Leadership
- Statistical & Machine Learning Modelling
- Proposal and Grant Writing
- Scientific & Technical Writing