

Jase Bernhardt, Ph.D.

Assistant Professor, Sustainability and Atmospheric Science
Department of Geology, Environment, and Sustainability, Hofstra University

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EDUCATION

PhD Geography, The Pennsylvania State University, 2016

Dissertation: A Comparison of Daily Temperature Averaging Methodologies: Uncertainties, Related Spatial Variability, and Societal Implications

MS Geography, The Pennsylvania State University, 2013

Thesis: A Synoptic Climatology of Contrail Outbreaks and Associated Surface Temperature Impacts for Two Sub-Regions of the Continental United States

BS Atmospheric Science, Cornell University, 2011

ACADEMIC EMPLOYMENT

Assistant Professor, Hofstra University

2016 - Present

Tenure-track assistant professor in the Department of Geology, Environment and Sustainability. Teach courses in climatology, meteorology, and sustainability. Oversee undergraduate student research and independent studies. Supervise the Hofstra Student Sustainability Club. Manage the network of three on-campus weather stations.

PROFESSIONAL APPOINTMENTS

Graduate Teaching Assistant, The Pennsylvania State University

2011 - 2016

Served as a teaching assistant or instructor for ten semesters and two summers. Taught courses in climatology, physical geography, and GIS.

Broadcast Meteorologist, *Weather World*

2012 - 2016

Presented four to five minute weather forecasts, and one minute forecast recaps, on the Pennsylvania statewide-televised weather magazine program. Created my own forecasts and monologues and selected the graphics to be used for presentation.

Summer Experience in Earth and Mineral Sciences, Research Mentor

2014, 2015

Instructed underrepresented high school students participating in the Upward Bound Math and Science Program, supporting study and summer residence for 8 weeks at Penn State.

Undergraduate Research Assistant, Northeast Regional Climate Center 2007 - 2011
Researched the climatology of East Coast Winter Storms and assisted with quality control of historical United States climate data as part of the National Climatic Data Center's Climate Database Modernization Program.

Climate Change Intern, Cornell Cooperative Extension, Dutchess County 2008
Developed fact sheets, reports, and other materials for the public on climate change, including the air quality and climate chapter of the Dutchess County Natural Resources Inventory.

REFEREED PUBLICATIONS

2017 **Bernhardt, J.**, A.M. Carleton, C. LaMagna. A Comparison of Daily Temperature Averaging Methods: Spatial Variability and Recent Change for the CONUS. *Journal of Climate*. Under Revision.

Hedberg, R., A. Hesse, D. Baldwin, **J. Bernhardt**, D. Retchless, J. Shinn. Preparing Geographers for Interdisciplinary Research: Graduate Training at the Interface of the Natural and Social Sciences. *Professional Geographer*, 69, 107-116.

2015 **Bernhardt, J.** Determining Regional Weather Patterns from a Historical Diary. *Weather, Climate, and Society*, 7, 295-308.

Bernhardt, J. and A. M. Carleton. The impacts of long-lived jet contrail 'outbreaks' on surface station diurnal temperature range. *International Journal of Climatology*, 35, 4529-4538.

Carleton, A.M., A.D. Silva, **J. Bernhardt**, J. VanderBerg, D.J. Travis. Sub-region scale hindcasting of contrail outbreaks, utilizing their synoptic climatology. *Journal of Applied Meteorology and Climatology*, 54, 1733-1755.

2014 Blandford, I., **J. Bernhardt**, A. Savelyev, G. Wong- Parodi, A. Carleton, D. Titley, A. MacEachren. Tweeting and Tornadoes. *Proceedings of the 11th International Conference on Information Systems for Crisis Response and Management*. (Refereed proceedings).

2013 Carleton, A.M., A.D. Silva, M.S. Aghazarian, **J. Bernhardt**, D.J. Travis, and J. Allard. Mid-season climate diagnostics of jet contrail "outbreaks", and implications for eastern U.S. sky cover trends. *Climate Research*, 56, 209-230.

2012 **Bernhardt, J.** and A. T. DeGaetano. Meteorological factors affecting the speed of movement and related impacts of extratropical cyclones along the U.S. east coast. *Natural Hazards*, 61, 1463-1472.

OTHER PUBLICATIONS

2010 *Dutchess County, New York: Natural Resources Inventory*
Principal Author, Chapter 2 (Climate and Air Quality).
<http://www.co.dutchess.ny.us/CountyGov/Departments/Planning/16138.htm>

GRANTS AND FELLOWSHIPS

Hofstra University, Faculty Research Development Grant

2017 \$1,260

Graduate Research Fellowship Program, Pennsylvania Space Grant Consortium

2013-15 \$10,000

Penn State University Office of Global Programs, Graduate Travel Grant

2015 \$500

Penn State University, College of Earth and Mineral Sciences, Centennial Graduate Research Award

2012 \$1,000

AWARDS AND HONORS

Best Student Paper Award, 13th History Symposium, 95th American Meteorological Society Annual Meeting

2015 \$700

Penn State University, Department of Geography, E. Willard Miller Outstanding Paper Award

2012, 2015 \$400 (*each*)

Penn State Department of Geography, James T. Meyer Outstanding Graduate Teaching Assistant Award

2014 \$1,000

3rd place, Association of American Geographers Climate Specialty Group Student Paper Competition

2013 \$100

Best Student Paper Award, AAG, Middle States Division Annual Meeting,

2013 \$100

World Geography Bowl, Travel Grant, 2013-2016 AAG Annual Meetings

2013-16 \$300 (*each*)

Cornell University, Department of Earth and Atmospheric Sciences, Brian Bosart Award
2010 \$3,000

INVITED PRESENTATIONS

2017 **Stony Brook University, School of Marine and Atmospheric Sciences (SoMAS),
Topics in Atmospheric and Oceanic Science (TAOS) Seminar**

Speaker at the school's weekly seminar series with lecture entitled "A Comparison of Daily Temperature Averaging Methods: Spatial Variability and Recent Change for the CONUS"

Green Party of Nassau County

Speaker at local chapter meeting on the science behind jet contrails and their impacts on weather and climate.

Greentree Foundation Teachers' Ecology Workshop

Instructor at July 17-21, 2017 workshop for Long Island elementary and secondary school teachers focused on instructing students about the natural world.

People, Pipelines and Politics: What citizens can do to address climate change challenges under today's EPA, Hofstra University

Invited panelist at April 20, 2017 event discussing climate science and policy under the Trump administration as part of Hofstra's Earth Week.

2016 **'Facing the Surge' film screening, Citizens Climate Lobby of Long Island**

Invited panelist at October 9, 2016 event screening a documentary on sea level rise for the public, followed by a scientific discussion on sea level rise projections and uncertainty.

Coffee Hour, Department of Geography, Penn State University

Graduate student lightning talk for the March 4, 2016 department seminar "*Weather World: Bridging the gap between geography and meteorology.*"

2014 **Coffee Hour, Department of Geography, Penn State University**

Graduate student lightning talk for the October 17, 2014 department seminar entitled "Jet Contrails and Society- Not Just a 'Cloudy' Outlook" and lightning talk.

Backbone Ridge History Group, Trumansburg, New York

Oral presentation, "Determining Local Weather and Climate Patterns in Southern Seneca County from Herman Smith's 1884 Diary" at April 26, 2014 meeting of historical society.

2010 **Conference on the Natural Resource Inventory of Dutchess County, NY**

Oral presentation on the "Climate and Air Quality of Dutchess County" chapter of the Dutchess County Natural Resources Inventory at a November 6, 2010 conference on the updated document.

CONFERENCE PARTICIPATION

2017 **Annual Meeting of the Association of American Geographers (AAG)**

April 5-9, Boston, MA. Oral presentation, "A Comparison of Daily Temperature Averaging Methodologies: Spatial Variability, Seasonal Patterns, and Related Climate Variables in the CONUS"

American Meteorological Society (AMS) Annual Meeting

January 22-26, Seattle, WA. Poster, "A Comparison of Daily Temperature Averaging Methodologies: Spatial Variability, Seasonal Patterns, and Related Climate Variables in the CONUS" at the 29th Conference on Climate Variability and Change.

2016 **AAG, Middle States Division Annual Meeting**

November 4-5, Altoona, PA. Oral presentation, "A Comparison of Daily Temperature Averaging Methodologies: Spatial Variability, Seasonal Patterns, and Related Climate Variables in the CONUS."

Annual Meeting of the AAG

March 29 - April 2, San Francisco, CA. Oral presentation, "A Comparison of Daily Temperature Averaging Methodologies: Uncertainties, Related Spatial Variability, and Societal Implications."

AMS Annual Meeting

January 10-14, New Orleans, LA. Poster, "A Comparison of Daily Temperature Averaging Methodologies: Uncertainties, Related Spatial Variability, and Societal Implications" at the 23rd Conference on Probability and Statistics in the Atmospheric Sciences.

2015 **AAG, Middle States Division Annual Meeting,**

October 2-3, Binghamton, NY. Oral presentation, "A Comparison of Two Daily Temperature Averaging Methodologies: Uncertainties and Spatial Variability."

International Conference of Historical Geographers

July 5-9, London, UK. Oral presentation, "Determining Regional Weather and Climate Patterns and Anomalies from a Historical Diary."

Annual Meeting of the AAG

April 21-25, Chicago, IL. Oral presentation, "Using Hourly Data for Daily Temperature Averaging."

AMS Annual Meeting

January 4-8, Phoenix, AZ. Oral presentation, "Determining Regional Weather and Climate Patterns and Anomalies from a Historical Diary" at the 13th History Symposium.

- 2014 **AAG, Middle States Division Annual Meeting**,
October 24-25, York, PA. Oral presentation, “Determining Regional Weather and Climate Patterns from a Historical Diary.”
- Annual Meeting of the AAG**
April 8-12, Tampa, FL. Oral presentation, “Determining Regional Weather and Climate Patterns and Anomalies from a Historical Diary.”
- AMS Annual Meeting**
February 2-6, Atlanta, GA. Poster presentation, “Surface temperature impacts of jet contrail outbreaks and their forecasting applications for two sub-regions of the Continental United States” at the Fourth Aviation, Range and Aerospace Meteorology Special Symposium.
- 2013 **AAG, Middle States Division Annual Meeting**
October 18-19, Buffalo, NY. Oral presentation, “Jet Contrails and Society- Not Just a ‘Cloudy’ Outlook.”
- Annual Meeting of the AAG**
April 9-13, Los Angeles, CA. Oral presentation, “A synoptic climatology of contrail outbreak events and associated surface temperature effects for the Southern United States.”
- AMS Annual Meeting**
January 6-10, 2013, Austin, TX. Oral presentation, “A synoptic climatology of contrail outbreak events and associated surface temperature effects for the Southern United States” at the 16th Conference on Aviation, Range, and Aerospace Meteorology.
- 2012 **AAG, Middle States Division Annual Meeting**
November 2-3, Shippensburg, PA. Oral presentation, “Determining Weather and Climate Patterns from a Historical Diary.”
- Annual Meeting of the AAG**
February 24-28, New York, NY. Poster presentation, “An investigation of Coast Winter Storm Speed and impacts during the past 55 years.”
- AMS Annual Meeting**
Poster presentation, “An investigation of East Coast Winter Storm Speed and impacts during the past 55 years” at the 24th Annual Conference on Climate Variability and Change.
- 2011 **AMS Annual Meeting**
January 22-27, Seattle, WA. Oral presentation, “An investigation of slow-moving East Coast Winter Storms during the past 55 years.”

2010 **AMS Annual Meeting**

January 16-21, Atlanta, GA. Poster presentation, "A Method for determining the historical climatology of East Coast Winter Storms" at the 9th Annual AMS Student Conference.

TEACHING EXPERIENCE

Hofstra University

Department of Geology, Environment and Sustainability

***New course developed**

SBLY 105: Seminar on Sustainability

Fall 2017

***GEOL 014F: Communicating Weather and Climate (First-Year Seminar)**

Fall 2017

***HUHC 020I: 'Hot Topics in Environmental Science' (Honors College Seminar)**

Fall 2017

SBLY 002: Sustainability Planning and Policy

Fall 2016 (part of First Year Connections cluster), Spring 2017, Fall 2017

***SBLY 104E: Introduction to Weather and Climate**

Spring 2017

GEOL 001: Planet Earth (Lab)

Spring 2017

SBLY 151: Readings in Sustainability Studies (Independent Study)

Spring 2017, Fall 2017

Penn State

Department of Geography

Instructor, GEOG 10: Physical Geography: An Introduction

Summer 2013, 2016

Instructor, GEOG 310W: Introduction to Global Climatic Systems

Spring 2015

Instructor, GEOSC 496: Independent Studies

Spring 2015

Instructor, GEOG 110: Climates of the World

Fall 2014

Graduate Teaching Assistant, GEOG 160: Mapping our Changing World
Fall 2015, Spring 2016

Graduate Teaching Assistant, GEOG 110: Climates of the World
Fall 2011-14

Graduate Teaching Assistant, GEOG 10: Physical Geography: An Introduction
Spring 2013, 2014

Graduate Teaching Assistant, GEOG 363: Geographic Information Systems
Fall 2012

Cornell University
Department of Earth and Atmospheric Science

Undergraduate Teaching Assistant, EAS 1340: Weather Analysis & Forecasting
Spring 2011

Undergraduate Teaching Assistant, EAS 1330: Basic Meteorology Lab
Fall 2010

Undergraduate Teaching Assistant, EAS 4940: Public Weather Forecasting
Fall 2010, Spring 2011

Grader, EAS 2680: Climate and Global Warming
Spring 2010, 2011

STUDENT MENTORING

Undergraduate Research Supervision, Hofstra University

Guided undergraduate research projects relating to climatology and sustainability, majors in the Department of Geology, Environment and Sustainability unless otherwise noted.

Angela Rienzo, Fall 2017- Present: Communicating Hurricane Risk with Virtual Reality Technology (**Supported by Hofstra University Honors College Research Assistantship**)

Justin Cabot-Miller (Computer Science), Fall 2017-Present: Developing a Sea Breeze Climatology for Long Island, **in collaboration with Renzhi Cao, Pacific Lutheran University**
Emma Vaccaro (STEM Education), Spring 2017- Present: Teaching Sustainability in Elementary Education

Ivan Bermejo, Spring 2017- Present: Communicating Hurricane Risk with Virtual Reality Technology

James Eager and Sara Hicks, Fall 2016 - Spring 2017: Analyzing 19th Century Weather Patterns from Historical Diaries (Poster presentation at 2017 AAG Meeting and Hofstra Undergraduate Research Day)

Undergraduate Internship Supervision, Hofstra University

Oversee undergraduate internships completed as part of the sustainability major.

Jacob Roday, Summer 2017 - Present: Internship at Friends of Hempstead Plains

Undergraduate Peer Teacher Supervision, Hofstra University

Managed undergraduate students as part of the Hofstra Peer Teacher program, which allows outstanding students to enhance course engagement and participation.

Carys Swan, Fall 2017, GEOL 014F: Communicating Weather and Climate

Jacob Roday, Spring 2017, SBLY 002: Sustainability Planning and Policy

Undergraduate Research Supervision, Penn State

Guided undergraduate research projects relating to climatology.

Chris LaMagna, Spring 2015: A Comparison of Daily Temperature Averaging Methods: Spatial Variability and Recent Change for the CONUS (Co-author on paper in revisions)

Nichole McClain, Spring 2014: Jet Contrail Outbreaks and Precipitation Impacts

SERVICE TO PROFESSION

Peer Review

2017 *Journal of Climate*

Conference Organization

2017 **Annual Meeting of the AAG**

Panelist, "The Academic Job Market for Geographers: Strategies for Improving Employment Preparation"

Field Trip Organizer, Fenway Park Tour

Moderator, World Geography Bowl

2016 **Annual Meeting of the Middle States Division of the AAG**

Session chair, "Weather and Climate"

2016 **Annual Meeting of the AAG**

Session organizer, "Interdisciplinarity in Graduate Training in New Institutional Landscapes"

2015 **Annual Meeting of the AAG**

Session chair and organizer, Changing Climatic and Physical Landscapes

UNIVERSITY SERVICE

Hofstra University Senate, At Large Member

Committee on Environmental Safety, Member

Member of the Hofstra University Senate, a governing body composed of university faculty, administrators, staff, and students (Fall 2017 – Present).

Sustainability Studies Club, Faculty Advisor

Faculty advisor for the student club which supports students in sustainability and provides opportunities for interested students to increase awareness of environmental issues and participate in related research. Organize and lead field trips to local sites and events of interest

such as the local National Weather Service forecast office, water pollution control district, and Hurricane Hunters Awareness tour (Fall 2016 - Present).

ProjectWx, Manager

Installed and maintained the network of three on-campus WeatherSTEM stations which provide weather and climate data for research, teaching, and communication purposes (Fall 2016 - Present).

Center for Civic Engagement, Advisory Board Member

Member of the faculty advisory board which guides the Center's on- and off- campus events and programming, meant to foster student participation in community engagement and service learning (Fall 2016 - Present).

New Student Orientation, Model Course Leader

Lead one-hour discussion sections on common reading project during new student orientation (Summer 2017 - Present).

Admitted Students Fair, Representative

Represent the Department of Geology, Environment and Sustainability at open houses for admitted students (Spring 2017 - Present).

COMMUNITY OUTREACH

2017 **West Babylon School District**

Collaborative effort with Andrea Durbin, AP Science teacher, to integrate study of surface weather observation and human comfort into high school science curriculum

Long Island Children's Museum

Advisor for the creation of new exhibit, "Saltwater Stories: The History and Culture of Long Island Maritime Traditions."

Hofstra University Saturday Classes for Young People

Instruct course for local high school students, "Meteorology: The Science Behind Your App," November 4, 2017.

Waverly Park Ecology Week

Guest lecture on weather and climate for fifth grade students as part of elementary school's "Ecology Week," May 10, 2017.

Freeport High Science and Engineering Fair

Served as a judge at local high school science fair, April 28, 2017.

Long Island Science and Engineering Fair

Served as a judge at science fair competition for students representing area high schools, February 8, 2017.

PROFESSIONAL DEVELOPMENT

2017 Early Career Geoscience Faculty Workshop

Participated in workshop organized by the National Association of Geoscience Teachers, July 9-14, which provided guidance for early career tenure-track faculty members on improving teaching, research, service, and funding outcomes.

2015 Community Earth System Model (CESM) Tutorial

Attended the session at the NCAR Mesa Lab in Boulder, Colorado, August 10-14, which provided basic training in running the NCAR Community Earth System General Circulation Model.

PROFESSIONAL MEMBERSHIPS

2009 - Present **American Meteorological Society**

2011 - Present **American Association of Geographers**

2012 – 2016 **Supporting Women in Geography (SWIG), Penn State**

MEDIA COVERAGE

“Faculty Spotlight: Weather stations take Hofstra by storm.” *Hofstra Chronicle*. 6 March 2017. <http://thehofstrachronicle.com/faculty-spotlight-weather-stations-take-hofstra-storm/>

“The Science Behind Snowflakes: HU Office Hours with Jase Bernhardt.” *Hofstra University*. 6 January 2017. <http://news.hofstra.edu/2017/01/06/21896/>

“Do Contrails affect Conditions on the Surface?” *National Environmental Satellite, Data, and Information Service*. 18 July 2016. http://www.nesdis.noaa.gov/news_archives/do_contrails_effect_conditions_on_the_surface.html

“Focus on research: Meteorology students get a flurry of experience.” *Centre Daily Times*. 28 August 2015. <http://www.centredaily.com/living/article42924807.html>

“Contrails Change Temperatures on the Ground Beneath Them.” *KQED Science*. 3 July 2015. <http://ww2.kqed.org/science/2015/07/03/contrails-change-temperatures-on-the-ground-beneath-them/>

“Jet Contrails Actually Do Alter the Weather.” *Discovery News*. 24 June 2015. <http://news.discovery.com/earth/weather-extreme-events/jet-contrails-actually-do-alter-the-weather-150624.htm>

“Jet contrails affect surface temperatures.” *Penn State News*. 18 June 2015. <http://news.psu.edu/story/361041/2015/06/18/research/jet-contrails-affect-surface-temperatures>

“Clouds break - as forecast by students - for Commencement.” *Cornell Chronicle*. 29 May 2011. <http://www.news.cornell.edu/stories/2011/05/meteorology-students-forecast-clear-skies-commencement>