# RESEARCH INTERESTS

Climate change & variability, applied climatology, synoptic climatology

With applications to: coastal environments, human health, extreme events, teleconnections

# EDUCATION

Ph.D., Geography (Climate Science), Kent State University 2014

M.A., Geography (Climate Science), Kent State University 2010

B.S., Radio and Television, Kent State University 2003

# CURRENT POSITIONS

Assistant Professor, Kent State University, Department of Geography

Tenure-Track 2021 –

Non-Tenure Track – Research-Track 2016 – 2020

Managing Editor, International Journal of Biometeorology 2015 – Research Consultant, Applied Climatologists, Inc. 2012 –

# PREVIOUS EXPERIENCE

Research Faculty, Kent State University, Department of Geography 2014 – 2016

Adjunct Faculty, Kent State University, Department of Geography 2015 – 2016

Doctoral Graduate Research Assistant, Kent State Geography 2010 – 2014

Doctoral Graduate Teaching Assistant, Kent State Geography 2011 – 2013

Master’s Graduate Research Assistant, Kent State Geography 2009 – 2010

National Science Foundation Fellowship, Kent State Geography 2009

FUNDED RESEARCH (11 funded projects, totaling $1,856,573)

Excess Heat and Excess Cold Factors: Establishing a unified duration-intensity metric for monitoring hazardous temperature conditions in North America

**Principal Investigator**; $387,057; 2022-2025

**National Oceanic and Atmospheric Administration, Climate Program Office**

NOAA Award Number NA22OAR4310142

NOAA - NASA RISE Project - Using NARX Models, satellite ocean observations and climatology to support monthly to seasonal predictions of anomalous sea levels

Research Consultant; $50,000; 2022-2025

**National Oceanic and Atmospheric Administration**; Contract #

Towards a Universal Mortality-Adjusted Temperature

**Principal Investigator**; $10,000; Summer 2021

**Kent State University; Research & Sponsored Programs** (Summer Research and Creative Activity Appointment)

Using a synoptic climatological framework to assess predictability of anomalous coastal sea levels in NOAA high priority areas

Co-Investigator; $286,932; 2017-2022 (PI: Scott Sheridan, Kent State University)

**National Oceanic and Atmospheric Administration, Climate Program Office**

Developing extreme event climate change indicators related to human thermal comfort

**Principal Investigator**; $269,456; 2017-2021.

**National Oceanic and Atmospheric Administration, Climate Program Office**

NOAA Award Number NA17OAR4310159

The Development of a Water Clarity Index for the Great Lakes as a Climate Indicator

Co-Investigator; $565,024; 2016-2021 (PI: Scott Sheridan, Kent State University)

**National Aeronautics and Space Administration**

Enhancing climate preparedness through geodesign of urban green space

Co-Principal Investigator (PIs: S. Sheridan and V. Kelly Turner); $12,000; 2018-2019

**Kent State University; Research & Sponsored Programs** (Environmental Science and Design Research Initiative; 2018 Seed Grant Program)

Enhancing the Teaching and Learning of Biometeorology in Higher Education

Co-Investigator; $15,000; 2016 (PI: Jennifer Vanos, Texas Tech University)

**Tromp Foundation, International Society of Biometeorology**

Detecting and forecasting Climate Effects on Spatial Patterns of Biodiversity and Productivity in West Coast Sanctuaries: A Collaboration with the Marine Biodiversity Observational Network (MBON)

Research Consultant; $40,000; 2015-2016

**National Oceanic and Atmospheric Administration**; Contract EA-133C-15-SE-1454

A synoptic climatological assessment of atmospheric impacts on short-term sea-level variability and its impacts along the mid-Atlantic coast

Research Consultant; $25,000; 2014-2015

**National Oceanic and Atmospheric Administration;** Contract EA-133C-14-SE-3728

Development of a Water Quality Index for the Southeastern U.S. as a Climate Indicator

Named Research Assistant; $196,104; 2013-2014 (PI: S. Sheridan, Kent State University)

**National Aeronautics and Space Administration**

PENDING GRANT PROPOSALS (0)

PEER-REVIEWED PUBLICATIONS(42 total; 18 first-authored)

Google Scholar: citations: 862; h-index: 17; i10-index: 25

Obarein, O.A., **Lee, C.C.**, Smith, E.T., Sheridan, S.C. (2022): Evaluating medium-range forecast performance of regional-scale circulation patterns**.** (Manuscript currently in peer-review).

**Lee, C.C.**, Sheridan, S.C., Dusek, G.P., Pirhalla, D.E. (2022): Atmospheric circulation patterns and sea-level variability: Assessing S2S predictability. (Manuscript currently in peer-review).

**Lee, C.C.,** Dannenberg, M.P. (2022): Frequencies of multivariate air masses drive global tree growth. (Manuscript currently in peer-review).

Obarein, O.A., **Lee, C.C.** (2022): Differential Signal of Change Among Multiple Components of West African Rainfall. *Theoretical and Applied Climatology* **149**, 379-399. DOI: 10.1007/s00704-022-04052-1.

Ilias, P., Kassomenos, P., **Lee, C.C.** (2022): Trends in airmass frequencies across Europe. *Theoretical and Applied Climatology* **148,** 105-122. DOI: 10.1007/s00704-022-03921-z.

**Lee, C.C.** (2021): Weather Whiplash: Trends in rapid temperature changes in a warming climate. *International Journal of Climatology* **42(8)**, 4214-4222. DOI: DOI:10.1002/joc.7458.

Pirhalla, D.E., **Lee, C.C.,** Sheridan, S.C. Ransibrahmanakul, V. (2021): Atlantic coastal sea level variability and synoptic-scale meteorological forcing. *Journal of Applied Meteorology and Climatology* **61(3),** 205-222. DOI: 10.1175/JAMC-D-21-0046.1.

Smith E.T., Obarein, O., Sheridan, S.C., **Lee, C.C**. (2021): Assessing trends in atmospheric circulation patterns across North America. *International Journal of Climatology* **41(4),** 2679-2692. DOI: 10.1002/joc.6983.

**Lee, C.C.,** Obarein, O., Sheridan, S.C., Smith, E.T., Adams, R.E. (2021): Examining trends in multiple parameters of seasonally-relative extreme temperature and dew point events across North America. *International Journal of Climatology* **41(S1),** E2360-E2378. DOI:10.1002/joc.6852.

Adams, R.E., **Lee, C.C.,** Smith, E.T., Sheridan, S.C. (2021): The relationship between atmospheric circulation patterns and extreme temperature events in North America. *International Journal of Climatology* 41(1), 92-103. DOI: 10.1002/joc.6610.

**Lee, C.C.,** Barnes, B.B., Sheridan, S.C., Smith, E.T., Hu, C., Pirhalla, D.E., Ransibrahmanakul, V., Adams, R.E. (2020): Using Machine Learning to Model Water Clarity in the Great Lakes. *Journal of Great Lakes Research* **46(6),** 1501-1510. DOI: 10.1016/j.jglr.2020.07.022.

Sheridan S.C., **Lee, C.C.,** Smith E.T. (2020): A comparison between station observations and reanalysis data in the identification of extreme temperature events. *Geophysical Research Letters* **47(15),** e2020GL088120. DOI: 10.1029/2020GL088120.

**Lee, C.C.** (2020): Trends and variability in air mass frequencies: indicators of a changing climate. *Journal of Climate* **33(19)**, 8603-8617. DOI: 10.1175/JCLI-D-20-0094.1.

Smith, E.T., **Lee, C.C.,** Barnes, B.B., Adams, R.E., Pirhalla, D.E., Ransibrahmanakul, V., Hu, C., Sheridan, S.C. (2020): A synoptic climatological analysis of the atmospheric drivers of water clarity variability in the Great Lakes**.** *Journal of Applied Meteorology and Climatology* **59(5),**915-935. DOI: 10.1175/JAMC-D-19-0156.1.

Sheridan, S.C. **Lee, C.C.,** Adams, R., Smith, E.T., Pirhalla, D.E., Ransibrahmanakul, V. (2019): Temporal modeling of anomalous coastal sea-level values using synoptic climatological patterns. *Journal of Geophysical Research – Oceans* **124(9)**, 6531-6544. DOI: 10.1029/2019JC015421.

**Lee, C.C.** (2019):The Gridded Weather Typing Classification version 2: a Global Scale Expansion. *International Journal of Climatology* **(40),** 1178-1196. DOI: 10.1002/JOC.6263.

Sheridan, S.C., **Lee, C.C.,** Allen, M.J. (2019): The mortality response to absolute and relative temperature extremes. *International Journal of Environmental Research and Public Health* **16***,* 1493. DOI: 10.3390/ijerph16091493.

**Lee, C.C.,** Sheridan, S.C. (2018): Trends in weather type frequencies across North America. *npj Climate and Atmospheric Science* **1(41).** DOI: 10.1038/s41612-018-0051-7.

Sheridan, S.C., **Lee, C.C**. (2018): Temporal trends in absolute and relative extreme temperature events across North America. *Journal of Geophysical Research: Atmospheres* **123(21),** 11889-11898. DOI: 10.1029/2018JD029150.

Ballinger, T.J., **Lee, C.C.,** Sheridan, S.C., Crawford, A.D., Overland, J.E., Wang, M. (2018): Subseasonal atmospheric regimes and ocean background forcing of Pacific Arctic sea ice melt onset. *Climate Dynamics* **52(9-10),** 5657-5672. DOI: 10.1007/s00382-018-4467-x.

**Lee, C.C.**, Sheridan, S.C. (2018): A new approach to modeling temperature-related mortality: Non-linear autoregressive models with exogenous input. *Environmental Research* **164**, 53-64. DOI: 10.1016/j.envres.2018.02.020.

Islam, R.M., Sheridan, S.C., **Lee, C.C.** (2018): Using self-organizing maps to identify the South Asian seasonal cycle. *Theoretical and Applied Climatology* **137(1-2),** 1385-1401. DOI: 10.1007/s00704-018-2681-4.

Sheridan, S.C., Pirhalla, D.E., **Lee, C.C.,** Ransibrahmanakul, V. (2017): Atmospheric drivers of sea-level fluctuations and nuisance floods along the mid-Atlantic coast of the USA. *Regional Environmental Change.* **17(6),** 1853-1861. DOI: 10.1007/s10113-017-1156-y

**Lee, C.C.** (2016) Reanalyzing the impacts of atmospheric teleconnections on cold-season weather using multivariate surface weather types and self-organizing maps. *International Journal of Climatology* **37(9),** 3714-3730. DOI: 10.1002/joc.4950.

Pirhalla, D.E., Sheridan, S.C., **Lee, C.C.,** Barnes, B.B., Ransibrahmanakul, V., Hu, C. (2016): Water clarity patterns in South Florida coastal waters and their linkages to synoptic-scale wind forcing. *Satellite Oceanography and Meteorology* **2(1),** 26-40**.** DOI: 10.18063/SOM.2016.02.003.

**Lee, C.C.**, Sheridan, S.C., Barnes, B.B., Hu, C., Pirhalla, D.E., Ransibrahmanakul, V., Shein, K. (2016): The development of a non-linear auto-regressive model with exogenous input (NARX) to model climate-water clarity relationships: reconstructing an historical water clarity index for the coastal waters of the southeastern US. *Theoretical and Applied Climatology* **130(1-2)**, pp.557-569. DOI: 10.1007/s00704-016-1906-7.

**Lee, C.C.** (2015): A systematic evaluation of the lagged effects of spatiotemporally-relative surface weather types on wintertime cardiovascular-related mortality across 19 US cities. *International Journal of Biometeorology* **59(11),** 1633-1645. DOI: 10.1007/s00484-015-0970-5.

**Lee, C.C.,** Sheridan, S.C. (2015): Synoptic Climatology: An Overview. *Reference Module in* *Earth Systems and Environmental Sciences*. Elsevier. DOI: 10.1016/B978-0-12-409548-9.09421-5. **INVITED CONTRIBUTION**.

Pirhalla, D.E., Sheridan, S.C., Ransibrahmanakul, V., **Lee, C.C.** (2014): Assessing Cold-Snap and Mortality Events in South Florida Coastal Ecosystems: Development of a Biological Cold Stress Index Using Satellite SST and Weather Pattern Forcing. *Estuaries and Coasts* **38(6)**, 2310-2322. DOI: 10.1007/s12237-014-9918-y.

**Lee, C.C.** (2014): The Development of a Gridded Weather Typing Classification Scheme. *International Journal of Climatology* **35**, 641-659. DOI: 10.1002/joc.4010.

Sheridan, S.C., **Lee, C.C.** (2014): “Synoptic Climatology.” In *Oxford Bibliographies in Geography*. Oxford University Press. Ed. Barney Warf. New York City, USA. DOI: 10.1093/OBO/9780199874002-0088. **Invited contribution.**

Allen, M.J., **Lee, C.C.** (2014): Investigating High Mortality during the Cold Season: Mapping Patterns of Temperature and Pressure. *Theoretical and Applied Climatology* **118(3)**, 419–428. DOI: 10.1007/s00704-013-1075-x.

Sheridan, S.C., Pirhalla, D.E., **Lee, C.C.**, Ransibrahmanakul, V. (2013): Evaluating Linkages of Weather Patterns and Water Quality Responses in South Florida Using a Synoptic Climatological Approach. *Journal of Applied Meteorology and Climatology* **52(2)**, 425-438. DOI: 10.1175/JAMC-D-12-0126.1.

**Lee, C.C.,** Sheridan, S.C., Lin, S. (2012): Relating Weather Types to Asthma-Related Hospital Admissions in New York State. *EcoHealth* **9(4)**, 427-439. DOI: 10.1007/s10393-012-0803-5.

**Lee, C.C.,** Ballinger, T.J., Domino, N.A. (2012): Utilizing map pattern classification and surface weather typing to relate climate to the Air Quality Index in Cleveland, Ohio. *Atmospheric Environment* **63**, 50-59. DOI: 10.1016/j.atmosenv.2012.09.024.

Sheridan, S.C., **Lee, C.C.** (2012): Synoptic Climatology and the Analysis of Atmospheric Teleconnections. *Progress in Physical Geography* **36(4)** 548-557. DOI: 10.1177/0309133312447935.

**Lee, C.C.** (2012): Utilizing Synoptic Climatological Methods to Assess the Impacts of Climate Change on Future Tornado-Favorable Environments. *Natural Hazards* **62(2)**, 325-343. DOI: 10.1007/s11069-011-9998-y.

Sheridan, S.C., Allen, M.J., **Lee, C.C.,** Kalkstein, L.S. (2012): Future heat vulnerability in California, Part II: Projecting future heat-related mortality. *Climatic Change* **115(2),** 311-326. DOI: 10.1007/s10584-012-0437-1.

Sheridan, S.C., **Lee, C.C.,** Allen, M.J., Kalkstein, L.S. (2012): Future heat vulnerability in California, Part I: Projecting future weather types and heat events. *Climatic Change* **115(2)**, 291-309. DOI: 10.1007/s10584-012-0436-2.

**Lee, C.C.**, Sheridan, S.C. (2011): A Six-Step Approach to Developing Future Synoptic Classifications Based on GCM Output. *International Journal of Climatology* **32**, 1792-1802*.* DOI: 10.1002/joc.2394.

Sheridan, S.C., **Lee, C.C**. (2011): The Self-Organizing Map in Synoptic Climatological Research. *Progress in Physical Geography* **35(1),** 109-119. DOI: 10.1177/0309133310397582.

Sheridan, S.C., **Lee, C.C.** (2010): Synoptic Climatology and the General Circulation Model. *Progress in Physical Geography* **34(1),** 101-109. DOI: 10.1177/0309133309357012.

OTHER PUBLICATIONS & PUBLISHED DATASETS (12 total; 9 first-authored)

**Lee, C.C.**, Sheridan, S.C., Dusek, G.P., Pirhalla, D.E. (2022): “RISE: Sea-Level and Atmospheric Patterns”, Mendeley Data, V1, [DOI: 10.17632/4c4dshr2mb.1](https://data.mendeley.com/datasets/4c4dshr2mb/1).

**Lee, C.C.,** Dannenberg, M.P (2022), “Air Masses and Tree Rings”, Mendeley Data, V1, [DOI: 10.17632/5s5xykzwyd.1](https://data.mendeley.com/datasets/5s5xykzwyd/1).

**Lee, C.C.,** Obarein O.O, Sheridan, S.C., Smith, E.T.; Adams, R.E. (2020): “Extreme Temperature and Dew Point Events in North America”, Mendeley Data, v1. [DOI: 10.17632/j7hp5tmcr7.1](https://data.mendeley.com/datasets/j7hp5tmcr7/1).

**Lee, C.C.** (2020): GWTC2 Dataset - A global-scale classification of air masses, Mendeley Data, v2. [DOI: /10.17632/gbwwksnd6j.2](http://dx.doi.org/10.17632/gbwwksnd6j.2).

**Lee, C.C.** (2020): Global Air Mass Climate Indicators - Warm/Cool Index and Global Extremes Index, Mendeley Data, v2. [DOI: 10.17632/fvtznwrgsv.2](http://dx.doi.org/10.17632/fvtznwrgsv.2).

Sheridan, S.C., **Lee, C.C.,** Smith, E.T., (2020), Extreme Temperature Events by Station / Reanalysis Data Set, Mendeley Data, V1, [DOI: 10.17632/3b6nnp55w6.1](https://data.mendeley.com/datasets/3b6nnp55w6/1).

Perkins IV, D.R., Vanos, J., Fuhrmann, C., Allen, M., Knight, D., **Lee, C.C.,** Lees, A., Leung, A., Lucas, R., Mehdipoor, H. and Tavares Nascimento, S. (2017). Enhancing the Teaching and Learning of Biometeorology in Higher Education. Technical Report. *Bulletin of the American Meteorological Society* **98(9)**, ES239-ES242. DOI: 10.1175/BAMS-D-16-0343.1

**Lee, C.C.** (2014): The Development of a Gridded Weather Typing Classification Scheme. Doctoral Dissertation. Kent State University, Kent, Ohio, USA, 254 pp.

**Lee, C.C.,** Sheridan, S.C., Allen, M.J., Kalkstein, L.S. (2012): O-194: Projecting Future Heat-Related Mortality in California Using Synoptic Methods. *ISEE Conference Abstracts in Epidemiology 23(5S).*

**Lee, C.C.**, Sheridan, S.C., Lin, S. (2011): Seasonal and Lagged Effects of Synoptic Weather Types on Asthma-Related Hospital Admissions in New York State. *Proceedings of the 19th International Congress on Biometeorology*.

Sheridan, S.C., **Lee, C.C.,** Allen, M.J., Kalkstein, L.S. (2011): A spatial synoptic classification approach to projected heat vulnerability in California under future climate change scenarios*.* Final report to the California Air Resources Board, Agreement number 07-304, 153 pp.

**Lee, C.C.** (2010): The Relationship of Large-Scale Atmospheric Circulation Patterns to Tornadoes and the Impacts of Climate Change. Master’s Thesis. Kent State University, Kent, Ohio, USA, 263 pp.

RESEARCH PRESENTATIONS (38 total)

NOTES: only listed if presenting author for oral presentation (unless otherwise noted)

Weather Whiplash: The long-term trends in rapidly changing temperature events

104th Fall Meeting of the American Geophysical Union

Chicago, Illinois; December 2022 (POSTER)

Climate change is more than average: contrasting trends in means versus trends in extremes in a warming climate

118th Annual Meeting of the American Association of Geographers

New York City, New York; February 2022 (REMOTE – COVID)

Greater than averages: how metrics of extreme weather are trending differently than averages would suggest (POSTER)

103rd Fall Meeting of the American Geophysical Union

New Orleans, Louisiana; December 2021

The development and application of a new global-scale air mass classification

117th Annual Meeting of the American Association of Geographers

Seattle, Washington; April 2021 (REMOTE – COVID)

Global Trends in Air Mass Frequencies: Multivariate Indicators of Climate Change

102nd Fall Meeting of the American Geophysical Union

San Francisco, California; December 2020 (REMOTE – COVID)

Development and applications of a new global-scale weather type classification

116th Annual Meeting of the American Association of Geographers

Denver, Colorado; April 2020 (CANCELLED (COVID))

Leveraging Machine Learning and Synoptic Climatology to Model and Forecast Water Clarity in the Great Lakes

101st Fall Meeting of the American Geophysical Union

San Francisco, California; December 2019 (POSTER)

A global-scale gridded classification of multivariate surface weather types: the GWTC-2

European Meteorological Society Annual Meeting

Copenhagen, Denmark; September 2019

Multi-decadal changes to the frequency of North American Weather Types

115th Annual Meeting of the American Association of Geographers

Washington, D.C.; April 2019

The Changing Frequency of Spatiotemporally-Relative Weather Types across North America

6th Annual Kent State Environmental Science & Design Research Symposium

Kent, Ohio; March 2019 (POSTER)

Changing Frequencies of Spatiotemporally-Relative Surface Weather Types in North America

100th Fall Meeting of the American Geophysical Union

Washington, D.C.; December 2018 (POSTER)

Long-term trends in the frequency of North American weather types

41st Applied Geography Conference

Kent, OH; October 2018

Modeling Temperature-Related Mortality using Nonlinear Autoregressive Models with Exogenous Input

Joint Annual Meeting of the International Society of Exposure Science and the International Society for Environmental Epidemiology

Ottawa, Ontario, Canada; August 2018

Using nonlinear autoregressive models with exogenous input to analyze temperature-related human mortality

9th Conference on Environment and Health, as part of the 98th American Meteorological Society Annual Meeting

Austin, TX; January 2018

Modeling weather impacts on human mortality using non-linear autoregressive models with exogenous input (NARX models) - presented by Scott Sheridan

20th International Congress of Biometeorology

Durham, United Kingdom; September 2017

Synergistic impacts of multiple teleconnections on North American surface weather types

113th Annual Meeting of the American Association of Geographers

Boston, MA; April 2017

Analyzing teleconnective impacts on surface weather types using self-organizing maps

39th Applied Geography Conference

Louisville, KY; October 2016

Enhancing Undergraduate Biometeorology Education

23rd Annual University Teaching Council Celebration of College Teaching Conference

Kent, OH; October 2016 (POSTER)

Using circulation patterns and weather types to model water clarity in the Gulf of Mexico

112th Annual Meeting of the American Association of Geographers

San Francisco, CA; March 2016

A synoptic climatological approach to modeling daily water clarity using neural network-based time-series models.

3rd Annual Water Research Symposium at Kent State University

Kent, OH; October 2015 (POSTER)

Linking synoptic weather and ocean light attenuation variability in the Gulf of Mexico: constructing a 65-year Kd-Index

95th American Meteorological Society Annual Meeting

Phoenix, AZ; January 2015

Wintertime associations between spatiotemporally-relative synoptic weather types and lagged cardiovascular mortality across various US climate regions

20th International Congress of Biometeorology

Cleveland, OH; October 2014

Utilizing a New Gridded Weather Typing Classification Scheme to Evaluate the Relationship between Meteorological Conditions and Cardiovascular-Related Mortality

110th Annual Meeting of the American Association of Geographers

Tampa, FL; April 2014

Cardiovascular-Related Mortality and Links to Multivariate Surface Weather Types

29th Annual Kent State University Graduate Student Symposium

Kent, OH; April 2014 (POSTER)

Assessing the Link between Weather Patterns and Water Quality using a Synoptic Climatological Approach

The 1st Annual Water Research Symposium at Kent State University

Kent, OH; November 2013 (POSTER)

The Development of an Automated and Gridded Synoptic Classification for Surface Weather Types

13th European Meteorological Society Annual Meeting and 11th European Conference on Applications of Meteorology

Reading, United Kingdom; September 2013

Linking Synoptic Weather Types and Asthma-Related Hospital Admissions in New York State

13th European Meteorological Society Annual Meeting and 11th European Conference on Applications of Meteorology

Reading, United Kingdom; September 2013

Circulation Pattern and Weather Type Associations with the Air Quality Index in Cleveland, Ohio

28th Annual Kent State University Graduate Student Symposium

Kent, OH; April 2013

Relating Climate to the Air Quality Index in Cleveland, Ohio Using a Combined Synoptic Climatological Methodology

109th Annual Meeting of the American Association of Geographers

Los Angeles, CA, April, 2013

Projecting Future Heat-Related Mortality in California Using Synoptic Methods

24th Annual Conference of the International Society of Environmental Epidemiology

Columbia, SC; August 2012

The Impacts of Short-Term Weather Variability on Chlorophyll Levels near the Florida Gulf Coast

27th Annual Kent State University Graduate Student Symposium

Kent, OH; April 2012

Relating Chlorophyll Levels near the Florida Gulf Coast to Regional Synoptic Sea Level Pressure Patterns

108th Annual Meeting of the American Association of Geographers

New York, NY; February 2012

Seasonal and Lagged Effects of Synoptic Weather Types on Asthma-Related Hospital Admissions in New York State

19th International Congress of Biometeorology

Auckland, New Zealand, December 2011

Associating Asthma Admissions to Synoptic Weather Types in New York State

26th Annual Kent State University Graduate Student Symposium

Kent, OH; April 2011

Relating Weather Types to Asthma-Related Hospital Admissions in New York State

107th Annual Meeting of the American Association of Geographers

Seattle, WA; April 2011

The Relationship of Large-Scale Atmospheric Circulation Patterns to Tornadoes and the Impacts of Climate Change

Geography Department Colloquium, Kent State University

Kent, OH; April 2010

The Relationship of Large-Scale Atmospheric Circulation Patterns to Tornadoes and the Impacts of Climate Change

106th Annual Meeting of the American Association of Geographers

Washington, D.C.; April 2010

A Synoptic Climatology of United States Tornado Days and the Impacts of Climate Change

25th Annual Graduate Student Senate Colloquium; Kent State University

Kent, OH; April 2010

INVITED PRESENTATIONS

More than Just Averages: Regional Trends of Various Key Indicators of Extreme Weather

**Invited Presentation** to NOAA’s NIHHIS Urban Heat Island Community of Practice Webinar Series; Virtual; July 2021

Climate Change: Extremes and Human Health

**Invited Guest Lecture** to Texas State University Graduate-level Geography course on Global Climate Change (via Skype); November 2019

Heat Waves Module

**Invited Speaker** at the Earth Systems Science Workshops for K-12 Teachers; Kent, Ohio; October 2016

Climate and Air Quality in Cleveland, Ohio: A Combined Synoptic Climatological Approach

**Invited Presentation** at the University of Akron; Geosciences Seminar Series

Akron, OH; February 2014

A Spatial Synoptic Classification Approach to Projected Heat Vulnerability in California Under Future Climate Change Scenarios

**Invited presentation** to the California Air Resources Board. Co-presenter with Dr. Scott Sheridan; Sacramento, CA; February 2011

Projecting Future Tornado Days with Synoptic Methods

**Invited presentation** to the Northeast Ohio Chapter of the American Meteorological Society; Kent, OH; September 2010

# COURSES TAUGHT (gray: have not taught in 3+ years)

Applied Climatology (1 time, last in Fall 2016, next in Fall 2022)

Fundamentals of Meteorology (2 times, last in Fall 2021)

Geography of the United States & Canada (3 times, last in Spring 2012)

Glaciers & Glaciation (1 time, Fall 2015)

Global Climate Change (5 times, next in Fall 2022)

Physical Geography (8 times, last in Fall 2021)

Physical Geography Laboratory (6 times, last in Fall 2020)

# STUDENT ADVISEMENT

# NOTE: Kent State University; Department of Geography, unless otherwise noted

**Dissertation / Thesis Advisor:**

Michael Crowell

M.S., anticipated completion in 2022

Omon Obarein

Ph.D., anticipated completion in 2023

M.A., completed 2020

**Dissertation / Thesis Committee Member:**

Ryan Adams

Ph.D., anticipated completion: 2022

M.A., completed 2017

Andrews Boateng

Ph.D., anticipated completion: 2022

Md. Rafiqul Islam

Ph.D., completed 2020

Seth Rainey

M.S., anticipated completion: 2023

Erik Tyler Smith

Ph.D., completed 2021

M.A., completed 2017

**Undergraduate Mentoring:**

Michael Crowell

* + - 2019 Summer Undergraduate Research Experiences Program; Primary Mentor
    - Spring 2020 Individual Investigation in Geography; Primary Mentor

Nichole Ortiz Jimenez

* 2019 Access and Support for Successful Undergraduate Research Experience Program; Co-Faculty Mentor (Primary: Scott Sheridan)

Tyler Horgan

* Fall 2022 Honors Project for Global Climate Change class

Molly Postlethwait

* Fall 2022 Honors Project for Global Climate Change class

Miles Powell

* Spring 2022 Honors Project for Global Climate Change class

# SERVICE

**Kent State University; Department of Geography:**

Faculty Advisory Committee (Fall 2022 – present)

Graduate Studies Committee (2019 – present)

Coordinator, Climate Change Minor (2018 – present)

Committee on Handbook Revision of Workload Equivalencies (2022)

Lead the Departmental application to the AGU Bridge Program (2020, 2021)

Hiring Committee for Tenure-Track Position in Environmental GIS (2018-2019)

Committee on Beck Research Award (2017)

**Peer-Reviewer** of Manuscripts for Scholarly Journals:

Atmospheric Environment

Climatic Change

Climate Dynamics

Climate Research

Earth Interactions

Environmental Research

Geographical Bulletin

Geographical Review

Geophysical Research Letters

International Journal of Biometeorology

International Journal of Climatology

Journal of Climate

Journal of Geophysical Research: Atmospheres

Physical Geography

Polish Journal of Environmental Sciences

Remote Sensing

Science of the Total Environment

Tellus A

Water

Water, Air & Soil Pollution

Weather and Climate

**Reviewer of Grant Proposals** for the National Science Foundation

**Writing Mentor** for Undergraduates in Kent State Geography Senior Seminar (2014)

**Local Organizing Committee**; 20th International Congress of Biometeorology (2014)

**Session Chair**: (Bold indicates Session Organizer)

Climate & Extreme Event Trends at 20th International Congress of Biometeorology (2014)

**Synoptic Climatology sessions at the Annual Meeting of the AAG (2017)**

**Applied & Synoptic Climatology session at the Applied Geography Conference (2018)**

**Volunteer**; 20th International Congress of Biometeorology (2014)

**Guest Discussant**; Research & Presentation of Geographic Data – Graduate-level course (Kent State University; Department of Geography) – Quantitative & Qualitative Methods (2019, 2022)

MEDIA ATTENTION

This Week in Tech with Jeanne Destro:

[WAKR – June 10, 2022](https://wakr.net/local-news/this-week-in-tech/item/166636-this-week-in-tech-with-jeanne-destro-6-10-22-how-will-global-climate-change-affect-the-great-lakes) – “How Will Global Climate Change Affect the Great Lakes?”

[WAKR – April 23, 2021](https://www.wakr.net/local-news/this-week-in-tech/item/165960-this-week-in-tech-with-jeanne-destro-4-23-21-adapting-to-climate-change) – “Adapting to Climate Change”

[WAKR – November 12, 2021](https://www.wakr.net/local-news/this-week-in-tech/item/166269-this-week-in-tech-with-jeanne-destro-11-5-21-climate-change-deforestation) – “Climate Change and Deforestation”

From backcountry ice skating to road cycling in January, how Tahoe adapts when weather whiplashes between extremes

[SFGate – January 29, 2022](https://www.sfgate.com/renotahoe/article/Tahoe-weather-whiplash-more-extreme-16813781.php)

Is Climate Change Increasing Weather Whiplash?

[NOAA – November 30, 2021](https://cpo.noaa.gov/News/News-Article/ArtMID/6226/ArticleID/2438/Is-Climate-Change-Increasing-Weather-Whiplash)

Examining trends in multiple parameters of seasonally‐relative extreme temperature and dew point events across North America

[Royal Meteorological Society – November 25, 2020](https://www.rmets.org/node/456877)

Hot and Cold: New study compares how well atmospheric reanalysis products identify extreme temperature events across North America

[NOAA – August 26, 2020](https://cpo.noaa.gov/News/ArtMID/7875/ArticleID/2007/Hot-and-Cold-New-study-compares-how-well-atmospheric-reanalysis-products-identify-extreme-temperature-events-across-North-America)

Two new indicators help track climate change

[NOAA – August 19, 2020](https://cpo.noaa.gov/News/ArtMID/7875/ArticleID/1999/Two-new-indicators-help-track-climate-change)

Professor Says Climate Change Is Not to Blame for Weather Ups and Downs

[WKSU – January 24, 2019](https://www.wksu.org/post/professor-says-climate-change-not-blame-weather-ups-and-downs)

[WXVU – January 25, 2019](http://www.wvxu.org/post/professor-says-climate-change-not-blame-weather-ups-and-downs#stream/0)

Cities Step Up to the Challenges of Climate Change

[WKSU – December 17, 2018](https://www.wksu.org/post/cities-step-challenges-climate-change#stream/0)

[WOSU – December 19, 2018](http://radio.wosu.org/post/ohio-cities-prep-their-game-plan-confront-climate-change#stream/0)

More Extremes in a Changing Climate: An Interview with Cameron Lee, Ph.D.

[WKSU – December 1, 2018](https://www.wksu.org/post/more-extremes-changing-climate-interview-cameron-lee-phd?fbclid=IwAR1GT_2SdODcdFIS9piC1e9rKLLWZ8TDBSTnLPWZy1uzzMYI_PnDGJMSE4U#stream/0)

Extreme heat increasing in both summer and winter

[Science Daily – November 26, 2018](https://www.sciencedaily.com/releases/2018/11/181126142822.htm)

[Eos (AGU) – November 26, 2018](https://eos.org/scientific-press/extreme-heat-increasing-in-both-summer-and-winter?utm_source=rss&utm_medium=rss&utm_content=extreme-heat-increasing-in-both-summer-and-winter)



The role of climate change in extreme weather

[Kent Wired – September 17, 2018](http://www.kentwired.com/latest_updates/article_1c9e4df4-bac7-11e8-8c9d-ab548608349e.html)

Research grants totaling $550,000 awarded to Kent State geographers

[Kent Wired – November 1, 2017](http://www.kentwired.com/latest_updates/article_2da6018a-bf20-11e7-962b-2b5061e585a2.html)

[Crain’s Cleveland Business – October 31, 2017](https://www.crainscleveland.com/article/20171031/news/140581/kent-state-researchers-land-grants-totaling-550000-study-climate-issues)

[EurekAlert – October 30, 2017](https://www.eurekalert.org/pub_releases/2017-10/ksu-ksg103017.php)

# AWARDS & RECOGNITION

Dell Seed Unit Program; Recipient of Prototype Workstation Computer

Fall 2021; Workstation valued at $22,975

University Fellowship Awardee at Kent State University

2013-2014 Academic Year

Nominee for the David B. Smith Fellowship at Kent State University

2012-2013 Academic Year and 2013-2014 Academic Year

AAG Climate Specialty Group 2nd Place Finish, Student Paper Competition at Annual Meeting

April 2013; $175

Kent State University Department of Geography Beck Research Award winner ($700 total)

April 2012 and April 2013

Kent State University Department of Geography Isenogle Graduate Award Winner

April 2013; $500

ISEE Scholarship Recipient for Conference Travel

August 2012

Kent State University Graduate Student Senate International Travel Grant Awardee (competitive; $1500 total)

Fall 2011 and Fall 2013

Undergraduate Trustee Scholarship

August 1999 – May 2003; $4,000

Kent State University Dean’s List

Fall 2000, Fall 2001, Fall 2002

# PROFESSIONAL AFFILIATIONS

International Society of Environmental Epidemiology (2018 – Present)

American Association of University Professors (2016-Present)

American Geophysical Union (2016-Present)

International Society of Biometeorology (2010 – Present)

Student and New Professionals Group Member (2010-2020)

American Meteorological Society (2009 – Present)

American Association of Geographers (2009 – Present)

Climate Specialty Group Member (2009 – Present)