Cameron C. Lee, Ph.D.

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RESEARCH INTERESTS

Climate science, climate change & variability, applied climatology, synoptic climatology
With applications to: sea-level variability, 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	2016 –
Tenure-Track	2021 –
PI & Director, ClimRISE Research Lab	2022 –
Non-Tenure-Track – Research Track	2016 – 2020
Associate Editor, *Journal of Applied Meteorology & Climatology*	2023 –
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 (13 funded projects, totaling $2,004,476)

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

CISESS: Advancing GOES-R GLM and MALMA Science (Subcontract)
Institutional PI; $83,919; 2023-2024 (PI: Dr. Guangyang Fang, University of Maryland)
National Oceanic and Atmospheric Administration, National Environmental Satellite Data and Information Service

Using Weather Pattern Classification to Assess Projected Changes in Tornadoes
Principal Investigator; $20,984; 2023-2024
EPRI; Contract ID: 10016806

NOAA - NASA RISE Project - Using Synoptic-based Models, satellite ocean observations and climatology to support monthly to seasonal predictions of anomalous sea levels
Research Consultant; $93,000; 2022-2024
National Oceanic and Atmospheric Administration;
Contract #1305M222PNCNS0284 (FY2023) & #1305M223PNCNS0347 (FY2024)

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 FUNDING PROPOSALS (1)

Investigating the effect of synoptic air masses on compound extreme hydrological events under a changing climate (LOI: Encouraged to Submit Full Proposal)
Principal Investigator; $952,332; 2024-2027
National Science Foundation and German Research Foundation

PEER-REVIEWED PUBLICATIONS (49 total; 19 first-authored)

Google Scholar: citations: 1095; h-index: 18; i10-index: 28

Ibebuchi, C.C., **Lee, C.C.**, Silva, A. Sheridan, S.C. (2024): Evaluating apparent temperature in the contiguous United States from four reanalysis products using artificial neural networks. (Manuscript currently in peer-review with the *Journal of Geophysical Research: Machine Learning and Computation*).

Obarein, O.A., **Lee, C.C.** (2024): ERA5 reproduces key features of global precipitation change in a warming climate. (Manuscript currently in peer-review with the *Journal of Geophysical Research: Atmospheres*).

Lee, C.C., Sheridan, S.C., Pirhalla, D.E., Ransibrahmanakul, V., Dusek, G.P. (2023): A novel applied climate classification method for assessing atmospheric influence on anomalous coastal water levels. (Manuscript currently in first revision with the *International Journal of Climatology*).

Ibebuchi, C.C., Obarein, O.A., Silva, A., Rainey, S., Crowell, M., **Lee, C.C**. (2023): The assimilated 19th-century temperature changes in North America from the 20th-century Reanalysis; Role of the Inter-decadal Pacific Oscillation. (Manuscript currently in preparation).

Ibebuchi, C.C., **Lee, C.C**. (2023): Global trends in atmospheric layer thickness since 1940 and relationships with tropical and extratropical climate forcing. *Environmental Research Letters.* (Accepted, in press) DOI: 10.1088/1748-9326/acf870.

Ibebuchi, C.C., **Lee, C.C**. (2023): Circulation patterns associated with trends in summer temperature variability patterns in North America. *Scientific Reports* **13,** 12536. DOI: 10.1038/s41598-023-39497-5.

Ibebuchi, C.C., **Lee, C.C.** (2023): Circulation pattern controls of summer temperature anomalies in southern Africa. *Advances in Atmospheric Sciences*. DOI: 10.1007/s00376-023-2392-3.

Obarein, O.A., **Lee, C.C.**, Smith, E.T., Sheridan, S.C. (2023): Evaluating medium-range forecast performance of regional-scale circulation patterns**.** *Weather and Forecasting* **38(8),** 1467=1480. DOI: 10.1175/WAF-D-22-0149.1.

Lee, C.C., Sheridan, S.C., Dusek, G.P., Pirhalla, D.E. (2023): Atmospheric circulation patterns and sea-level variability: Assessing S2S predictability. *AI for Earth Systems*. (Accepted, in press). DOI: 10.1175/AIES-D-22-0057.1.

Lee, C.C., Dannenberg, M.P. (2023): Frequencies of multivariate air masses drive global tree growth. *Journal of Geophysical Research: Biogeosciences* **128(3).** DOI: 10.1029/2022JG007064.

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

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)*. DOI: 10.1097/01.ede.0000416851.36885.3f.

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.

PUBLISHED DATASETS

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.

Lee, C.C., Dannenberg, M.P (2022), "Air Masses and Tree Rings", Mendeley Data, V2, DOI: 10.17632/5s5xykzwyd.2.

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.

Lee, C.C. (2020): GWTC2 Dataset - A global-scale classification of air masses, Mendeley Data, v2. DOI: /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.

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.

RESEARCH PRESENTATIONS (43 total)

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

Identifying the synoptic-scale weather influences driving sea-level variability
AGU Ocean Sciences Meeting
New Orleans, Louisiana; February 2024

Are Air Masses Better Predictors of Tree Growth Than Temperature and Precipitation?
105th Fall Meeting of the American Geophysical Union
San Francisco, California; December 2023

Investigating multivariate surface air masses as drivers of tree growth
22nd International Congress of Biometeorology
Tempe, Arizona; May 2023

Developing a universal mortality-calibrated metric for human thermal comfort
22nd International Congress of Biometeorology
Tempe, Arizona; May 2023

Synoptic-scale weather impacts on daily sea-level variability
119th Annual Meeting of the American Association of Geographers
Denver, Colorado; March 2023

Weather Whiplash: The long-term trends in rapidly changing temperature events
104th Fall Meeting of the American Geophysical Union
Chicago, Illinois; December 2022 (Oral Presentation)

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

Sea-Level Variability and Prediction using Synoptic Patterns
Invited Presentation to NOAA's Sea-Level Symposium Series; Virtual; July 2023

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; Virtual; 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 (2 times, next in Fall 2024)
Fundamentals of Meteorology (3 times, last in Fall 2023)
Geography of the United States & Canada (3 times, last in Spring 2012)
Glaciers & Glaciation (1 time, Fall 2015)
Global Climate Change (many times, every semester)
Physical Geography (many times, next in Spring 2024)
Physical Geography Laboratory (6 times, last in Fall 2020)

MENTORING AND ADVISEMENT

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

Postdoctoral Scholars:
Chibuike Ibebuchi (2023 –)

Dissertation / Thesis Advisor:

Michael Crowell

M.S., anticipated completion in 2024

Omon Obarein

Ph.D., anticipated completion in 2024

M.A., completed 2020

Dissertation / Thesis Committee Member:

Ryan Adams

Ph.D., anticipated completion: 2024

M.A., completed 2017

Andrews Boateng

Ph.D., anticipated completion: 2024

Md. Rafiqul Islam

Ph.D., completed 2020

Seth Rainey

M.S., completed 2024

Erik Tyler Smith

Ph.D., completed 2021

M.A., completed 2017

Senior Honors Thesis Committee Member:

Stephanie Petrycki (2024)

Supervision of Honors Projects

Tyler Horgan (Fall 2022 – Global Climate Change)

Ciara Matos (Spring 2023 – Global Climate Change)

Stephanie Petrycki (Spring 2023 – Global Climate Change)

Molly Postlethwait (Fall 2022 – Global Climate Change)

Miles Powell (Spring 2022 – Global Climate Change)

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)

SERVICE

Kent State University; Department of Geography **(Gray: non-current):**

Faculty Advisory Committee (2022 – present)

Graduate Studies Committee (2019 – present)

Coordinator, Climate Change Minor (2018 – present)

Committee on Handbook Revision of Workload Equivalencies (2022-2024)
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
- Atmospheric Chemistry and Physics (via EGUsphere)
- 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 Applied Meteorology and Climatology
- Journal of Climate
- Journal of Geophysical Research: Atmospheres
- Nature Climate Change
- npj Climate and Atmospheric Science
- Physical Geography
- Polish Journal of Environmental Sciences
- Remote Sensing
- Science of the Total Environment
- Scientific Reports
- Tellus A
- Water
- Water, Air & Soil Pollution
- Weather and Climate

American Association of Geographers

Vice Chair (and Chair-elect) of the Climate Specialty Group (2023 – present)

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)

Academic Conference Session Chair/Organizer/Convener:

- International Congress of Biometeorology (2014)
  - Climate & Extreme Event Trends
- Annual Meeting of the American Association of Geographers
  - 2017: Synoptic Climatology
  - 2023: Synoptic Climatology
- Applied Geography Conference
  - 2018: Applied & Synoptic Climatology
- Annual Meeting of the American Meteorological Society
  - 2024: Applied Climate Science Research in Synoptic-Scale Environments
- Annual Meeting of the American Geophysical Union
  - 2023: Applied Climate and Meteorological Research in Synoptic-Scale Environments

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)

Moderator; Kent State Solar and Sustainability Tour Teach-In (September 2022)

Panelist; Kent State College of Public Health Interprofessional Education Session for Public Health Graduate Students and Registered Environmental Health Specialists (December 2022)

MEDIA ATTENTION

The Ray Horner Morning Show (WAKR Radio – Akron)

WAKR – July 21, 2023 – "Extreme Weather; Is this the new norm?"
WAKR – August 14, 2023 – "Sea Water Temps Reach Record Highs"

Tree-Ring Width Predicted by Machine Learning

Eos (AGU) Spotlight – March 28, 2023
Phys.org – March 29, 2023

Flash Focus: Kent State Expert on Doomsday Glacier and Zombie Ice

Kent State Today – September 12, 2022

This Week in Tech with Jeanne Destro (WAKR Radio – Akron):

WAKR – April 23, 2021 – "Adapting to Climate Change"
WAKR – November 12, 2021 – "Climate Change and Deforestation"
WAKR – June 10, 2022 – "How Will Global Climate Change Affect the Great Lakes?"

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

SFGate – January 29, 2022

Is Climate Change Increasing Weather Whiplash?

NOAA – November 30, 2021

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

Royal Meteorological Society – November 25, 2020

Hot and Cold: New study compares how well atmospheric reanalysis products identify extreme temperature events across North America
NOAA – August 26, 2020

Two new indicators help track climate change
NOAA – August 19, 2020

Professor Says Climate Change Is Not to Blame for Weather Ups and Downs
WKSU – January 24, 2019
WXVU – January 25, 2019

Cities Step Up to the Challenges of Climate Change
WKSU – December 17, 2018
WOSU – December 19, 2018

More Extremes in a Changing Climate: An Interview with Cameron Lee, Ph.D.
WKSU – December 1, 2018

Extreme heat increasing in both summer and winter
Science Daily – November 26, 2018
Eos (AGU) – November 26, 2018

The role of climate change in extreme weather
Kent Wired – September 17, 2018

Research grants totaling $550,000 awarded to Kent State geographers
Kent Wired – November 1, 2017
Crain's Cleveland Business – October 31, 2017
EurekAlert – October 30, 2017

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)