

# Joshua David Durkee

Professor, University Meteorologist  
Vice Chair, [Earth, Environmental, & Atmospheric Sciences  
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## EDUCATION

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- 2008, Ph.D., Department of Geography, University of Georgia.  
Dissertation: *Assessing the role of mesoscale convective complexes in subtropical South American precipitation variability.*
- 2003, M.S., Department of Geography, University of Georgia.  
Thesis: *The precipitation efficiency of warm-season mesoscale convective complexes in the United States.*
- 2000, B.S., Department of Geography and Geology, Western Kentucky University.  
Undergraduate Thesis: *Kentucky tornadoes and the El Niño Southern Oscillation.*

## RESEARCH INTERESTS

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- Precipitation science; hydroclimatology, hydrometeorology
- Climatology and dynamics of high-winds events
- Atmospheric circulation and teleconnections
- Applications in informal pedagogy
- Forensics and applied meteorology

## CURRENT ACADEMIC EMPLOYMENT

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- 2021-present: Vice Chair, Department of Earth, Environmental, and Atmospheric Sciences, Western Kentucky University, Bowling Green, KY.
- 2020-present: Professor, Graduate Faculty, Honors Faculty, Department of Earth, Environmental, and Atmospheric Sciences, Western Kentucky University, Bowling Green, KY.
- 2018-present: University Meteorologist, Western Kentucky University, Bowling Green, KY.
- 2016-present: Adjunct/Visiting Professor, Department of Geosciences, Fort Hays State University, Hays, KS.

## **CURRENT ACADEMIC DIRECTIVES**

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2020-present: Director, Disaster Science Operations Center (DSOC), Applied Technology & Research Program, Ogden College of Science and Engineering, Western Kentucky University, Bowling Green, KY.

2019-present: Program Coordinator, Emergency Management Disaster Science Undergraduate and Graduate Certificate Programs, Ogden College of Science and Engineering, Western Kentucky University, Bowling Green, KY.

2016-present: Director, White Squirrel Weather, Western Kentucky University, Bowling Green, KY.

2013-present: Director, College Heights Atmospheric Observatory for Students (CHAOS), Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

## **PREVIOUS ACADEMIC EMPLOYMENT**

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2013-2020: Associate Professor, Graduate Faculty, Honors Faculty, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

2016-2017: Assistant Department Head, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY. (sp16-sp17)

2008-2013: Assistant Professor, Graduate Faculty, Honors Faculty, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

2007-2008: Research Assistant, The Graduate School, University of Georgia, Athens, GA.

- Recipient of the Doctoral Dissertation Completion Assistantship Award

2001- 2008: Teaching Assistant, Department of Geography, University of Georgia, Athens, GA.

2004-2008: Graduate Assistant, Department of Geography, University of Georgia, Athens, GA.

2002-2003: Research Assistant, Department of Geography, University of Georgia, Athens, GA.

1999-2000: Research Assistant, Kentucky State Climate Center, Western Kentucky University, Bowling Green, KY.

## **PATENTS/COPYRIGHTS/TRADEMARKS/INTELLECTUAL PROPERTY**

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- IP, Jim Beam-Suntory/White Squirrel Weather, 2019-present
- IP, Maker's Mark/White Squirrel Weather, 2019-present
- IP, Amazon Global Security and Operations/White Squirrel Weather, 2019- present
- Copyrights, White Squirrel Weather, 2016-present
- IP, LATA Environmental Services of Kentucky, Paducah, KY., 2013

**PEER-REVIEWED PUBLICATIONS** (students) (\*invited)

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Dixon, P. G., **J. D. Durkee**, J. Oglesby, O. J. Cahill, and M. K. Wright, 2020: Jet streaming: Initial testing of a live-streamed storm-chase course in Meteorology, *Bulletin of the American Meteorological Society*. (accepted pending final review).

Winchester, J., R. Mahmood, W. Rogers, P. Silva, N. Lovanh, **J. D. Durkee**, and J. Loughrin, 2019: A model-based exploratory study of sulfur dioxide dispersions from several concentrated animal feeding operations in the southeastern United States. *Physical Geography*. (<https://doi.org/10.1080/02723646.2021.1875583>)

Na-Yemeh, D., R. Mahmood, G. Goodrich, K. Younger, K. Cary, and **J. D. Durkee**, 2020: Growing season air mass equivalent temperature (Te) in the central United States. *Climate*, 8(9), 1-17.

Dias de Souza Moraes, F., F. E. Aquino, T. L. Mote, **J. D. Durkee**, K. Mattingly, 2020: Atmospheric characteristics favorable to the development of Mesoscale Convective Complexes in southern Brazil. *Climate Research*, 80, 43-58.

Murley, V. A., **J. D. Durkee**, Gilliland, J. M., and A. Black, 2020: A climatological comparison of convective and non-convective high-wind events for the eastern United States during 1973-2015. *International Journal of Climatology*. (<https://doi.org/10.1002/joc.6690>)

Gilliland, J. M., A. Black, **J. D. Durkee**, and V. A. Murley, 2019: A climatology of high-wind events for the eastern United States during 1973-2015. *International Journal of Climatology*, 49(2), 723-738.

Younger, K., R. Mahmood, G. Goodrich, R. Pielke, **J. D. Durkee**, 2018: Climatology of mesoscale surface equivalent temperature (Te) for the east-central United States. *Theoretical and Applied Meteorology*, 136, 65-75.

Winchester, J., R. Mahmood, W. Rogers, F. Hossain, E. Rappin, **J. D. Durkee**, and T. Chronis, 2017: A model-based assessment of potential impacts of man-made reservoirs on precipitation. *Earth Interactions*, 21(9), 1-31.

**Durkee, J. D.**, A. M. Degu, F. Hossain, R. Mahmood, J. Winchester, and T. Chronis, 2014: Investigating the effect of Land Between the Lakes on local thunderstorm patterns. *Journal of Applied Meteorology and Climatology*, 53, 1506-1524.

**Durkee, J. D.**, C. M. Fuhrmann, J. A. Knox, and J. D. Frye, 2012: Ageostrophic contributions to a nonconvective high wind event in the Great Lakes region. *National Weather Digest*, 36, 43-52.

**Durkee, J. D.**, L. Campbell, K. Berry, D. Jordan, G. Goodrich, R. Mahmood, and S. Foster, 2012: A synoptic perspective of the record 1-2 May 2010 Mid-South rain and flood event. *Bulletin of the American Meteorological Society*, 93(5), 611-620.

Grundstein, A. J., **J. D. Durkee**, J. D. Frye, T. Andersen, and J. Lieberman, 2011: A severe weather laboratory exercise for an introductory weather and climate course using active learning techniques. *Journal of Geoscience Education*, 59, 22-30.

- \*Knox, J. A., J. D. Frye, **J. D. Durkee**, and C. M. Fuhrmann, 2011: Non-convective high winds associated with extratropical cyclones. *Geography Compass*, 5(2), 63-89.
- \***Durkee, J. D.**, 2010: Precipitation measurement and the advancement toward global observations. *Geography Compass*, 4(8), 956-978.
- Durkee, J. D.**, T. L. Mote, and J. M. Shepherd, 2009: The contribution of mesoscale convective complexes to warm-season rainfall across subtropical South America. *Journal of Climate*, 22, 4590-4605.
- Durkee, J. D.** and T. L. Mote, 2009: A climatology of subtropical South American mesoscale convective complexes. *International Journal of Climatology*, 30(3), 418-431.
- Durkee, J. D.**, J. D. Frye, C. M. Fuhrmann, M. C. Lacke, H. G. Jeong, and T. L. Mote, 2008: Effects of the North Atlantic Oscillation on precipitation-type frequency and distribution across the eastern United States. *Theoretical and Applied Climatology*, 94 (1-2), 51-65.
- Lacke, M. C., J. A. Knox, J. D. Frye, A. E. Stewart, **J. D. Durkee**, C. M. Fuhrmann, and S. M. Dillingham, 2007: A climatology of cold-season non-convective wind events in the Great Lakes region. *Journal of Climate*, 20, 6012-6222.
- Ashley, W. S., T. L. Mote, P. G. Dixon, S. L. Trotter, E. J. Powell, **J. D. Durkee**, and A. J. Grundstein, 2003: Distribution of mesoscale convective complex rainfall in the United States. *Monthly Weather Review*, 131, 3003-3017.

#### **APPLIED RESEARCH CONSULTING/CONTRACTS** (\*memorandum agreements) (student-focused)

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- **PI**, 2021: NASCAR, Nashville Superspeedway.
  - **PI**, 2020-21: Mike Breen Attorney at Law, PSC.
  - **PI**, 2019: Amazon Company, Global Security and Operations Center, White Squirrel Weather.
  - **PI**, 2019-present: Jim Beam, White Squirrel Weather.
  - **PI**, 2019-present: Maker's Mark, White Squirrel Weather.
  - **PI**, 2019: Paralegal-Insurance Defense Group with Goldberg, Simpson, LLC.
  - **PI**, 2019: Travis & Herbert Attorneys, PLLC.
  - \***PI**, 2018-present: WKU Public Broadcasting, NPR/PBS, White Squirrel Weather.
  - **PI**, 2018: Travis & Herbert Attorneys, PLLC.
  - **PI**, 2017: Travis & Herbert Attorneys, PLLC.
  - **PI**, 2017: Kriz, Jenkins, Prewitt, Jones, PSC.
  - **PI**, 2016: Paralegal-Insurance Defense Group with Goldberg, Simpson, LLC.
  - \***Co-PI**, 2013-2015: Caribbean Community Climate Change Centre, Belmopan, Belize.
  - **PI**, 2013: Cole and Moore, P.S.C., Bowling Green, KY.
  - **PI**, 2013: LATA Environmental Services of Kentucky, Paducah, KY.

## OTHER PUBLICATIONS (\*invited) (students)

**Durkee, J. D.**, and J. Oglesby, 2021: White Squirrel Weather V.4 –A real-time dynamic university weather service mobile application.

<https://itunes.apple.com/us/app/white-squirrel-weather/id1276022280?mt=8>

<https://play.google.com/store/apps/details?id=com.weatherstem.whitesquirrel&hl=en>

**Durkee, J. D.**, and J. Oglesby, 2020: White Squirrel Weather V.3 –A real-time dynamic university weather service mobile application.

<https://itunes.apple.com/us/app/white-squirrel-weather/id1276022280?mt=8>

<https://play.google.com/store/apps/details?id=com.weatherstem.whitesquirrel&hl=en>

**Durkee, J. D.**, and J. Oglesby, 2018: White Squirrel Weather V.2 –A real-time dynamic university weather service mobile application.

<https://itunes.apple.com/us/app/white-squirrel-weather/id1276022280?mt=8>

<https://play.google.com/store/apps/details?id=com.weatherstem.whitesquirrel&hl=en>

**Durkee, J. D.**, and J. Oglesby, 2017: White Squirrel Weather V.1 –A real-time dynamic university weather service mobile application.

<https://itunes.apple.com/us/app/white-squirrel-weather/id1276022280?mt=8>

<https://play.google.com/store/apps/details?id=com.weatherstem.whitesquirrel&hl=en>

**Durkee, J. D.**, J. Oglesby, N. Gary, 2017: White Squirrel Weather –A student-run, real-time dynamic university weather service website.

<http://www.wkuweather.com>

**\*Durkee, J. D.**, 2013: Small Scale Winds, Chapter 12 opening image, Meteorology –Understanding the Atmosphere, Jones and Bartlett Learning, 4<sup>th</sup> Ed., 378.

Knox, J. A., J. D. Frye, **J. D. Durkee**, and M. C. Lacke, 2011: Death from a clear blue sky: Extreme non-convective high winds. *Earthzine*.

<http://www.earthzine.org/2011/06/04/death-from-a-clear-blue-sky-extreme-non-convective-high-winds>

Knox, J. A., M. C. Lacke, J. D. Frye, A. E. Stewart, **J. D. Durkee**, C. M. Fuhrmann, and S. D. Dillingham, 2008: Non-convective high wind events: A climatology for the Great Lakes region. Preprints, 24<sup>th</sup> Conference on Severe Local Storms, Savannah, GA, American Meteorological Society.

**Durkee, J. D.**, 2008: Assessing the role of mesoscale convective complexes in subtropical South American precipitation variability, Department of Geography, University of Georgia, 164 pp.

**Durkee, J. D.**, 2003: The precipitation efficiency of warm-season mesoscale convective complexes in the United States. M.S. thesis, Department. of Geography, University of Georgia, 121 pp.

Ashley, W. S., P. G. Dixon, **J. D. Durkee**, E. J. Powell, S. L. Trotter, T. L. Mote, and A. J. Grundstein, 2002: A climatology of mesoscale convective complexes in the United States. Preprints, 21<sup>st</sup> conference on Severe Local Storms, San Antonio, TX, American Meteorological Society, 397-400.

**Durkee, J. D.**, 2000: Kentucky tornadoes: 1951-1998. Geography and Geology proceedings of the Kentucky Academy of Science, 1999-00, 12-17.

**Durkee, J. D.**, and D. G. Conner, 2000: Kentucky Freeze/Thaw Events 1966-1995. Kentucky Climate Center, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

**Durkee, J. D.**, and D. G. Conner, 1999: El Niño/La Niña and Kentucky Tornadoes. Kentucky. Kentucky Climate Center, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

**Durkee, J. D.**, and D. G. Conner, 1999: Kentucky Tornadoes. Kentucky Climate Center, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY.

#### **BOOK CHAPTERS** (\*invited)

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\***Durkee, J. D.**, 2010: Cyclones: Extratropical. *Encyclopedia of Geography*, B. Warf Ed., SAGE Publications, Inc., 650-654.

\***Durkee, J. D.**, 2010: Global Precipitation. *Encyclopedia of Geography*, B. Warf Ed., SAGE Publications, Inc., 2282-2287.

#### **EXTERNAL GRANTS**

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- **PI**, 2021: Using historical and in-situ meteorological data to develop and test a predictive model for horse-hay harvesting times in Kentucky. (\$73,862) (*not funded*).
  - **Co-PI**, 2020: Kentucky Division of Emergency Management Hazard Mitigation Planning Grant. WKU Severe Weather Preparedness Public Outreach. Federal Emergency Management Agency. (\$38,502)
  - **Co-PI**, 2020: Kentucky Division of Emergency Management Hazard Mitigation Planning Grant. WKU Multi-Hazard Mitigation Plan. Federal Emergency Management Agency. (\$225,038)
  - **Co-PI**, 2019: Warren County Public Schools/White Squirrel Weather Monitoring, Prediction, and Safety, Kentucky Division of the Federal Emergency Management Agency (FEMA Region IV) Hazard Mitigation Assistance Grant. (\$35,000) (*not funded*).
  - **Co-PI**, 2018: WKU Meteorology Program, White Squirrel Weather, Kentucky Division of the Federal Emergency Management Agency (FEMA Region IV) Hazard Mitigation Assistance Grant. (\$34,000) (*not funded*).
  - **PI**, 2016: Investigating the role of climate change on high-impact weather in the Ohio River Basin, Kentucky National Science Foundation EPSCoR. (\$35,000) (*not funded*)
  - **PI**, 2015: Expanding Unidata visualization and data analysis for innovative meteorological education at Western Kentucky University, University Corporation for Atmospheric Research, Unidata, National Science Foundation. (\$14,770)
  - **Co-PI**, 2010: Small research opportunities, curriculum activities, and teacher development workshops for the Western Kentucky University Stratospheric Ballooning Program, Kentucky Space Grant Consortium, (\$36,988) (*not funded*)

- **Faculty Collaborator**, 2009: REU Site: Summer research experience on the impacts of land use and land cover in the Upper Green River Watershed of Western Kentucky, USA. National Science Foundation. (\$349,806)
- **Co-PI**, 2008: Climate Change in the Americas: Actively Engaging Undergraduates and Pre-College Teachers in Research at Two Universities. National Aeronautics and Space Administration. (\$149,926) (*not funded*)
- **Faculty Collaborator**, 2008: REU Site: Summer research experience on the impacts of land use and land cover in the Upper Green River Watershed of Western Kentucky, USA. National Science Foundation. (\$428,000) (*not funded*)
- **Co-PI**, 2006: Enhancing climate change science education through inquiry-based concepts and real-world simulations. National Science Foundation - Partnership for Reform in Science and Mathematics. (\$7,790.00)
- **Co-PI**, 2006: The development of inquiry-based exercises on severe weather and hurricane forecasting for introductory weather and climate laboratory sections. National Science Foundation and the Partnership for Reform in Science and Mathematics. (\$6,205)
- **Co-PI**, 2006: Assessing the role of mesoscale convective complexes in South American precipitation budgets and variability. National Aeronautics and Space Administration. (\$294,595) (*not funded*)
- **Co-PI**, 2005: On the use of micrometeorological instrumentation for quantifying and analyzing local temperature and moisture fluxes for laboratory sections in introductory weather and climate courses. National Science Foundation and the Partnership for Reform in Science and Mathematics. (\$4,000)
- **Co-PI**, 2004: The development of a “hands on” curriculum for laboratory sections in introductory Weather and Climate courses. National Science Foundation and the Partnership for Reform in Science and Mathematics. (\$3,430)

## INTERNAL GRANTS

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- **PI**, 2019: White Squirrel Weather Outreach for Public School Safety and Learning, Sisterhood Grant, Western Kentucky University. (\$25,000) (*not funded*)
  - **PI**, 2018: White Squirrel Weather Student-Centered Outreach Initiative, Sisterhood Grant, Western Kentucky University. (\$25,000) (*not funded*)
  - **PI**, 2017: White Squirrel Weather Community Education Program, Sisterhood Grant, Western Kentucky University. (\$9,000) (*not funded*)
  - **PI**, 2016: Visiting Scientist invitation from the University of Cape Town, South Africa, Quick Turn Around Grant, Western Kentucky University. (\$3,000) (*not funded*)
  - **Co-PI**, 2016: Investigating the Impact of Climate Change on High Impact Weather in the Ohio River Basin. (\$15,893) (*not funded*)
  - **PI**, 2016: Western Kentucky University Instructional and Research Equipment Grant. (\$45,231) (*not funded*)
  - **PI**, 2013: Assessing extreme event moisture source trajectories in subtropical South American thunderstorms using isotope determination. Research and Creative Activities Program, Western Kentucky University. (\$14,970)
  - **PI**, 2010: Assessing the role of persistent elongated convective systems in subtropical South American mesoscale convective system variability. Research and Creative Activities Program, Western Kentucky University. (\$12,000)
  - **PI**, 2010: Western Kentucky University Instructional and Research Equipment Grant. (\$13,614)

- **PI**, 2009a: Western Kentucky University Instructional and Research Equipment Grant. (\$45,200) (*not funded*)
- **PI**, 2009b: Western Kentucky University Instructional and Research Equipment Grant. (\$11,010) (*not funded*)
- **PI**, 2009: Western Kentucky University Classroom Improvement Grant. (\$8,000)
- **PI**, 2009: Intraseasonal variability of mesoscale convective complexes during active and break phases of the South Atlantic Convergence Zone. Western Kentucky University Summer Faculty Scholarship. (\$5,624)
- **PI**, 2009: Western Kentucky University real-time weather observation system. Western Kentucky University Provost's Initiatives for Excellence Grant. (\$8,745) (*not funded*)
- **PI**, 2009: On the synergy of atmospheric circulation and boundary layer processes in the genesis of non-convective wind storms. Western Kentucky University New Faculty Scholarship Award. (\$3,530)

## AWARDS, FELLOWSHIPS, HONORS, & RECOGNITION

- 
- **NOAA-NWS Weather Ready Nation Ambassador of Excellence Award**, National Weather Service, Louisville, KY, 2020.
  - **Incident Command Systems Curricula Certificate of Completion**, Federal Emergency Management Agency (FEMA), Emergency Management Institute, Bowling Green, KY, 2019.
  - **Dr. Robert Langdon Award for Stenagonography, White Squirrel Weather**, Ogden College of Science and Engineering, Western Kentucky University, 2019.
  - **WKU TOPSY Award** [support and dedication to WKU Athletics via White Squirrel Weather], Western Kentucky University, 2019.
  - **Ogden College of Science and Engineering Faculty Award for Public Service**, Western Kentucky University, 2018.
  - **AtmoLife Top 100 Meteorology/Top 3 Academic Organization Twitter Accounts**, White Squirrel Weather, 2018.
  - **Faculty Leadership Fellow**, Western Kentucky University, 2016.
  - **Life in the Field Award**, American Geosciences Institute, 2014.
  - Nominated for a Faculty Award for Research and Creativity, Western Kentucky University, 2012.
  - Nominated for a Faculty Award for Student Advisement, Western Kentucky University, 2012.
  - Nominated for a Faculty Teaching Award, Western Kentucky University, 2011; 2012
  - **National Creativity and Innovation Award** [Awarded for creative, innovative, and unique summer programs; *Field Methods in Weather Analysis and Forecasting*], North American Association of Summer Sessions, 2010.
  - Nominated for the Southern Region Program of Excellence Award [Nominated for innovative program that improves the quality of teaching and learning; *Field Methods in Weather Analysis and Forecasting*], University Professional and Continuing Education Association, 2010.
  - **Climate Specialty Group Student Paper Competition Award** [Awarded Runner Up for Best Student Paper and Presentation], 104<sup>th</sup> Annual Meeting of the Association of American Geographers, Boston, MA., 2008. (\$215)
  - **Clarke County Geographical Society Travel Award** [Awarded for Best Graduate Student abstract for the Association of American Geographers 2008 Meeting], Athens, GA., 2008. (\$500)
  - **Honors Poster Award** [Awarded for Best Graduate Student Poster Presentation], 62<sup>nd</sup> Annual Meeting of the Southeast Division of the Association of American Geographers, Honors Competition, Charleston, SC., 2007. (\$500)



- **Doctoral Dissertation Completion Assistantship Award**, University of Georgia, 2007. (\$16,130)
- **University of Georgia Graduate School Alumni Travel Award**, 2007. (\$200)
- **University of Georgia Graduate School Alumni Travel Award**, 2006. (\$300)
- **John Fraser Hart Award** [Awarded for Best Ph.D. Honors Paper and Presentation], 60<sup>th</sup> Annual Meeting of the Southeast Division of the Association of American Geographers, Ph.D. Honors Competition, West Palm, FL., 2005. (\$500)
- **Outstanding Teaching Assistant Award**, University of Georgia, Athens, GA., 2004.
- Nominated to participate in a campus-wide Teaching Assistant Mentor Program by the Office of Instructional Support & Development (OISD), University of Georgia, Athens, GA., 2004. (\$1,000)
- Scholarship and Competence Award in Geography [Awarded for outstanding achievements in scholarship, research, and service in the Department of Geography], Western Kentucky University, Bowling Green, KY., 2000.
- Certificate of Recognition [Awarded for runner up for Best undergraduate research paper], Annual Sigma Xi Student Research Conference, Western Kentucky University, Bowling Green, KY., 2000.
- Certificate of Recognition [Awarded for Best undergraduate research paper], Annual Meeting of Geography and Geology Proceedings of the Kentucky Academy of Science, Richmond, KY., 1999.

## INVITED PRESENTATIONS

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- PHI Air Medical, An introduction to meteorology to emergency responders, Workshop, (COVID; virtual), sp 2021.
- Randolph Private School, White Squirrel Weather Workshop, Huntsville, AL. fa 2019.
- WKU Leadership Institute, White Squirrel Weather, Bowling Green, KY. sp 2019.
- National Weather Service, KenTenn Conference, *WKU Weather Operations: A Theory-to-Practice Education Model*, Hopkinsville, KY. fa 2018.
- National Weather Service, KenTenn Conference, *Field-based applied learning approaches toward forecast/noncast meteorology*, Hopkinsville, KY. fa 2018.
- National Weather Service, Severe Weather Awareness Day Conference, *White Squirrel Weather & WKU Storm Chase*, Nashville, TN, sp 2018.
- WKU Leadership Institute, White Squirrel Weather, Bowling Green, KY. sp 2018.
- WKU Human Resources, White Squirrel Weather, Bowling Green, KY. fa 2017.
- Severe Weather: Perspectives from a Storm Scientist, Warren County Public Library, Bowling Green, KY. sp 2017.
- Tornadoes! And it's a class. Science Café, Bowling Green, KY. sp 2017.
- Visiting Scientist: University of Cape Town, South Africa. fa 2016.
- Invited speaker: *Kentucky Agriculture Science and Monitoring Committee Meeting*. Focused-based weather forecast applications and climate outlooks. Bowling Green, KY. fa 2016.
- Invited speaker: *American Meteorological Society Early Career Professionals session*, 96<sup>th</sup> Annual Meeting of the American Meteorological Society, New Orleans, LA, 2016.
- Guest Lecturer: *Professional development and research practices at the graduate level*, GEOS 500 Geosciences Research and Literacy, Department of Geography and Geology, Western Kentucky University, Bowling Green, KY., fa 2015.

- Presenter: *WKU Field Methods in Weather Analysis and Forecasting: 2015 approaches and findings*, WKU Alumni College, su2015
- Presenter: *Kentucky Severe Weather Operations: A partnership between the WKU College Height Atmospheric Observatory for Students, WxOrNot-BG, and the National Weather Service*, National Weather Service, Louisville, KY., sp 2015.
- Presenter: *WKU Environmental Health and Safety: On the role of the College Height Atmospheric Observatory for Students for extreme-event monitoring and safety for WKU*, Environmental Health and Safety, Western Kentucky University, Bowling Green, KY., sp 2015.
- Presenter: *Severe Weather Safety Workshop*, Girl Scouts, Bowling Green, KY., fa 2013.
- Guest: *Leader in Me Seminar*, Cumberland Trace Elementary School, Bowling Green, KY., fa 2012.
- Presenter: *Mesoscale Convective Systems over South America*, colloquium presentation at the University of Missouri, Columbia, MO., sp 2012.
- Presenter: *Summer field-based course options within the B.S. Meteorology program at WKU*, 2<sup>nd</sup> Annual Kentucky Weather Conference, Bowling Green, KY., fa 2010.
- Presenter: *A look back on Field Methods of Weather Analysis and Forecasting Summer 2010*, Department of Geography, Western Kentucky University, Bowling Green, KY., fa 2010.
- Guest Lecturer: *Introduction to the Physical Environment*, Department of Geography, Western Kentucky University, Bowling Green, KY., sp 2008.
- Presenter: Global wind systems, Department of Geography, Kutztown University, Kutztown, PA., sp 2008.
- Presenter: The contribution of large thunderstorms to the hydroclimate of subtropical South America, Department of Geography, University of New Hampshire, Durham, NH., sp 2008.
- Guest Lecturer: *Environmental Geography*, Department of Geography, University of New Hampshire, Durham, NH., sp 2008.
- Presenter: The influence of mesoscale convective complexes on American hydroclimates, Department of Geography and Planning, California State University, Chico, CA., sp 2007.
- Presenter: The influence of mesoscale convective complexes on American hydroclimates, Department of Geography, Ball State University, Muncie, IN., sp 2007.
- Guest Lecturer: *Elementary Meteorology*, Department of Geography, Ball State University, Muncie, IN., sp 2007.
- Presenter: A synoptic-dynamic case study of the 12-13 November 2003 Great Lakes Cyclone, Proseminar Series, Department of Geography, University of Georgia, Athens, GA., su2006.
- Guest Lecturer and Presenter: The JASON Project: Reanalysis of the Edmund Fitzgerald Storm of 1975, su2006.
- Guest Lecturer: Satellite Meteorology, Department of Geography, University of Georgia, Athens, GA., sp 2006.
- Guest Lecturer: Synoptic Meteorology, Department of Geography, University of Georgia, Athens, GA., 2004; sp 2006.
- Guest Lecturer: Weather Analysis and Forecasting, Department of Geography, University of Georgia, Athens, GA., fa 2004; fa 2007.
- Guest Lecturer: Introduction to Weather and Climate, Department of Geography, University of Georgia, Athens, GA., 2004-2008.

## PROFESSIONAL DEVELOPMENT

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- **National Sport Safety and Security Professional Development Certificate**, Federal Emergency Management Agency (FEMA)-National Center for Spectator Sports Security and Safety (NCS4)-Texas A&M Engineering Extension Service/National Emergency Response and Recovery Training Center (TEEX/NERRTC), New Orleans, LA, 2019.
  - **Instant Command System (ICS) (L-449 MGT 906) Train the Trainer certification**, Federal Emergency Management Agency (FEMA)- Texas A&M Engineering Extension Service/National Emergency Response and Recovery Training Center (TEEX/NERRTC), (32 hrs); Western Kentucky University, Bowling Green, KY. 2019.
  - **Instant Command System (ICS 400) Certification, Advanced ICS Command and General Staff-Complex Incidents**, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2019.
  - **Sport Event Risk Management (AWR 167)**, Federal Emergency Management Agency (FEMA)-National Center for Spectator Sports Security and Safety (NCS4)-Texas A&M Engineering Extension Service/National Emergency Response and Recovery Training Center (TEEX/NERRTC), (16 hrs); Western Kentucky University, Bowling Green, KY. 2019.
  - **National Oceanic Atmospheric Administration/National Weather Service Hazard Simplification and Broadcast Media Focus Group Workshop**, Louisville, KY, 2018.
  - **Instant Command System (ICS 300) Certification, Intermediate ICS for Expanding Incidents**, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2018.
  - **Instant Command System (ICS 800.c) Certification, National Response Framework**, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2018.
  - **Instant Command System (ICS 700.b) Certification**, An Introduction to the National Incident Management System, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2018.
  - **Instant Command System (ICS 200.b) Certification, ICS for Single Resources and Initial Action Incidents**, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2018.
  - **Instant Command System (ICS 100) Certification, Introduction to the ICS**, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2018.
  - Severe Weather Awareness Day Conference, National Weather Service-Nashville, Nashville, TN. 2018.
  - **Sport and Venue Evacuation and Protective Actions (MGT 412)**, Federal Emergency Management Agency (FEMA)-National Center for Spectator Sports Security and Safety (NCS4)-Texas A&M Engineering Extension Service/National Emergency Response and Recovery Training Center (TEEX/NERRTC), (14 hrs); Western Kentucky University, Bowling Green, KY. 2018.
  - Severe Weather Awareness Day Conference, National Weather Service-Nashville, Nashville, TN. 2017.
  - **Enhanced Sports and Special Event Incident Management (MGT 440)**, Federal Emergency Management Agency (FEMA)-National Center for Spectator Sports Security and Safety (NCS4)-Texas A&M Engineering Extension Service/National Emergency Response and Recovery Training Center (TEEX/NERRTC), (24 hrs); Western Kentucky University, Bowling Green, KY. 2017.
  - **Faculty Leadership Year Fellowship**, Western Kentucky University, Bowling Green, KY. 2015-16.
  - Partnership for Reform in Science and Mathematics Research Symposium, Athens, GA., 2007.
  - Partnership for Reform in Science and Mathematics Research Symposium, Atlanta, GA., 2006.
  - Professional Development Seminar Series, Athens, GA., 2005; 2006; 2007.

- Effective Teaching for Graduate Students and Early Career Faculty Workshop, West Palm, FL., 2005.
- Partnership for Reform in Science and Mathematics Research Symposium, Young Harris, GA., 2005.

## PROFESSIONAL SERVICE

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- Instructor, Incident Command System (ICS 400) Certification, Intermediate ICS for Expanding Incidents, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2021.
- Instructor, Incident Command System (ICS 300) Certification, Intermediate ICS for Expanding Incidents, Federal Emergency Management Agency (FEMA), Bowling Green, KY, 2021.
- Director, Disaster Science Operations Center (DSOC); WKU ARTP
- Director, Emergency Management Disaster Science undergraduate and graduate Certificate Programs, Ogden College of Science and Engineering, 2019-present.
- Chair, WKU Meteorology Program Advisory Board, 2018-present.
- National Oceanic Atmospheric Administration/National Weather Service-Louisville Snow Observer, 2017-19.
- Director, White Squirrel Weather, 2016-present.
- CLIMLIST Administrator, 2009-present.
- American Meteorological Society Membership Committee, 2011-2012.
- Discussant for the session, "Extreme Weather Events", 62<sup>nd</sup> Annual Meeting of the Southeast Division of the Association of American Geographers, Charleston, SC., 2007.
- The JASON Project, 2006.

## MANUSCRIPT REVIEWER

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- *6<sup>th</sup> International Workshop on Monsoons/Multi-Scale Global Monsoons Book*, 2018
- *Atmospheric Science Letters*, 2015(x2); 2016
- *Australian Meteorological and Oceanographic Journal*, 2009; 2012; 2014
- *Bulletin of the American Meteorological Society*, 2019
- *Climate*, 2017
- *Climate Dynamics*, 2015; 2016
- *Climate Research*, 2005
- *Earth Interactions*, 2009; 2010; 2013(x2); 2016; 2020(x2)
- *Focus on Geography*, 2012
- *Geography Compass*, 2009; 2012(x2); 2015
- *International Journal of Climatology*, 2008; 2010; 2012(x2); 2015; 2018(x2)
- *Journal of Applied Geography*, 2012
- *Journal of Applied Meteorology and Climatology*, 2012; 2013(x3); 2014; 2015
- *Journal of Climate*, 2010; 2012; 2014; 2015(x2)
- *Journal of Hydrometeorology*, 2009
- *Journal of the Kentucky Academy of Science*, 2018
- *Journal of Transport Geography*, 2014, 2015, 2018
- *Meteorological Applications*, 2016
- *Monthly Weather Review*, 2010, 2019
- *Remote Sensing*, 2011, 2019
- *Theoretical and Applied Climatology*, 2010(x2)

- *Water Resources Research*, 2012
- *Weather and Forecasting*, 2010
- *Weather, Climate, and Society*, 2020, 2021

## TENURE & PROMOTION EXTERNAL REVIEWER

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- Tenure & Promotion, University of Northern Colorado, 2018
- Full Professor Promotion, University of South Alabama, 2021

## TEXTBOOK REVIEWER

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- *Living Physical Geography Laboratory Manual*, 2013
- *Living Physical Geography*, 2012(x2); 2015
- *The Atmosphere Revealed: An Introduction to Weather and Climate*, 2009
- *Introduction to Meteorology Lab Manual*, 2003

## GRANT REVIEWER

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- *Faculty Undergraduate Student Engagement Grant*, Western Kentucky University, fa 2014 (x6)
- *Faculty Undergraduate Student Engagement Grant*, Western Kentucky University, sp 2014 (x4)
- *Faculty Undergraduate Student Engagement Grant*, Western Kentucky University, fa 2012 (x3)
- *Faculty Undergraduate Student Engagement Grant*, Western Kentucky University, sp 2012 (x2)

## DEPARTMENTAL | COLLEGE | UNIVERSITY | COMMUNITY SERVICE

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- Logistics Section Chief, Presidential Inauguration, Western Kentucky University, sp 2020.
- Member, Department of Earth, Environmental, & Atmospheric Sciences Chair Search Committee, fa 2020 – sp 2021.
- Logistics Section Chief, Presidential Election, Western Kentucky University, fa 2019.
- Provost Council, Western Kentucky University, sp2019-2021.
- Chair (and creator), WKU Meteorology Program Advisory Board, fa 2018-present.
- Chair, Recruitment, Retention, and Graduation Committee, Department of Earth, Environmental, & Atmospheric Sciences, fa 2018-present.
- Co-developer, Emergency Management Disaster Science Graduate Certificate Program, fa 2017-present.
- Co-developer, Emergency Management Disaster Science Undergraduate Certificate Program, fa 2017-present.
- Director, WKU White Squirrel Weather, fa 2016-present.
- WKU Winter Weather Advisory Board, fa 2017-present.
- WKU Emergency Planning Core Group, sp 2017-present.
- WKU Safe Communities Coalition, sp 2017-present.
- Faculty Leadership Year Fellow, Western Kentucky University, fa 2016-present.
- Assistant Department Head, sp 2016-sp 2017.
- Chair, Sabbatical Committee, Department of Geography and Geology, fa2016.

- WKU Unmanned Aircraft System Usage Review Committee, sp 2016-present.
- Cumberland Trace Elementary School, Severe Storms Awareness and Safety Workshop, Host, 2016.
- Chair, Tenure and Promotion Committee, Dr. Xingang Fan, 2014.
- Faculty Liaison for the Student Chapter of the American Meteorological Society, 2008-present.
- Faculty Liaison for the WKU/WCEM Sky Warn Storm Spotter, “Storm Topper Network”, 2008-present.
- Science Olympiad, Site Exam Creator and Administrator, 2009-2016.
- Numerous media contributions including WKU News, Bowling Green, KY Daily News, surrounding newspapers around KY and TN, NPR, local radio station WKCT, local television WNKY, WeatherBrains, the WKU Scholar, and international media outlets in Brazil, 2009-present.
- Faculty Liaison for the Student Chapter of the National Weather Association and home of the Four-Rivers Chapter, 2011-present.
- WKU Geography/Geology Graduate Program Development Committee Member, 2011-present.
- WKU Geography and Geology Honors Night Planner/Contributor, 2011-present.
- Creator and Administrator of WKU Meteorology Program Facebook site, 2011-present.
- WKU Institute of the Environment, 2013-2014.
- WKU College Heights Atmospheric Observatory for Students (CHAOS), 2014-present.
- Cumberland Trace Elementary School, Severe Storms Awareness and Safety Workshop, Host, 2014 (x2).
- Cumberland Trace Elementary School, Fundamentals of Meteorology Workshop, Host, 2013 (x2).
- Cumberland Trace Elementary School, Fundamentals of Meteorology Workshop, Host, 2012(x2).
- WKU Ogden College Faculty Awards Committee Member, 2011.
- Warren County Kentucky Cub Scouts, Meteorology Workshop, Host, 2011.
- Cumberland Trace Elementary School, Severe Storms Awareness and Safety Workshop, Host, 2010-11.
- Program Director, Meteorology Technology Program, 2009-2011.
- The First Lego League Robotics Tournament Judge, 2009.
- WKU Graduate Council Meeting; Departmental Representative, 2008.
- Paper/Presentation Competition Judge, 8<sup>th</sup> Annual UGA Geography Undergraduate Research Conference, 2007.
- Planner/Organizer, 7<sup>th</sup> Annual UGA Geography Undergraduate Research Conference, 2006.
- Session Chair, 6<sup>th</sup> Annual UGA Geography undergraduate research conference, 2005.
- Sky Warn Storm Spotter, 2004-present.
- American Meteorological Society, University of Georgia Chapter, Graduate Liaison [peer-elected], 2003-2004.
- Various television interviews for UGA’s Newsource Channel 15, 2001-2008.
- Climatology Research Laboratory tours for numerous educational groups, 2001-present.

## GRADUATE ADVISOR

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- *Tori Murley*, 2016-2018 (Kentucky Community Technical College System; ECTC)
- *Josh Gilliland*, 2009-2011 (Louisiana State University, Ph.D.)

## GRADUATE COMMITTEE

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- *Shelby Bowden*, 2016-2018
- *Dolly Yemeh*, 2015-2017
- *Kyle Hogancamp*, 2015-2017
- *Keri Younger*, 2014-2015
- *Jesse Winchester*, 2013-2015
- *Kyle Thompson*, 2009-2014
- *Veronica Hall*, 2012-2014
- *Gillman Ouellette*, 2011-2013
- *Jeremy Young*, 2010-2012
- *Mitchell Gaines*, 2009-2012
- *Chris Blinn*, 2009-2011
- *Sam Brunt*, 2007-2009

## EXTERNAL GRADUATE COMMITTEE

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- *Josh Gilliland*, Ph.D., Louisiana State University, 2014-2017
- *Ross C. Blamey*, Ph.D., University of Cape Town, South Africa, 2012

## UNDERGRADUATE HONORS THESIS ADVISOR

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- *Dallas McKinney*, 2017-2020 (University of Utah, M.S.)
- *Carson Meredith*, 2016-2019 (WAAY Huntsville, AL.)
- *Isaac Bowers*, 2012-2017 (Weather or Not, Inc., Shawnee, KS.)
- *Kyle Mattingly*, 2008-2012 (University of Georgia, M.S., Ph.D.)

## UNDERGRADUATE HONORS THESIS COMMITTEE

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- *Jane-Marie Wix*, 2005-2010 (National Weather Service-Jackson, KY)
- *Grace Campbell*, 2017-2021 (University of Nebraska-Lincoln, M.S.)