

Justin P. Stachnik

NASA Headquarters, Earth Science Division
 Weather and Atmospheric Dynamics Focus Area
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EDUCATION

Ph.D. , Atmospheric Sciences, Texas A&M University, College Station, TX Dissertation: <i>Observed Characteristics of Clouds and Precipitating Systems Associated with the Tropical Circulation in Global Models and Reanalyses</i>	5/2013
M.S. , Atmospheric Science, Purdue University, West Lafayette, IN Thesis: <i>Numerical Simulation and Microphysical Evaluation of a Severe Hailstorm using the Weather Research and Forecasting (WRF) Model</i>	8/2007
B.S. , Synoptic Meteorology (Honors), Purdue University, West Lafayette, IN Undergraduate Thesis: <i>An Investigation of Giant Aerosol Particle Variability over the Eastern Great Lakes Region and Implications for Aircraft Icing Forecasts</i>	5/2005

PROFESSIONAL EXPERIENCE

Associate Program Scientist / Senior Support Scientist Weather and Atmospheric Dynamics Focus Area ASRC Federal / Agile Decision Sciences, LLC NASA Headquarters, Washington DC	2024–present
Assistant Professor Department of Geography and Atmospheric Science University of Kansas, Lawrence, KS	2016–2024
Postdoctoral Scholar Joint Institute for Regional Earth System Science and Engineering University of California, Los Angeles, CA NASA Jet Propulsion Laboratory, Pasadena, CA	2013–2016
Graduate Research and Teaching Assistant Department of Atmospheric Sciences Texas A&M University, College Station, TX	2007–2013
Graduate Research Assistant Department of Earth, Atmospheric, and Planetary Sciences Purdue University, West Lafayette, IN	2005–2007
Student Career Experience Program (SCEP) National Weather Service WFO-LOT, Romeoville, IL	2004–2007

RESEARCH INTERESTS

Tropical meteorology, Climate variability and change, Mesoscale precipitating systems, Multi-scale interactions, Cloud physics and dynamics, Radar and satellite meteorology

REFEREED PUBLICATIONS

**indicates student advised by J.S.*

[13] Lewis-Merritt, C.*, **J. P. Stachnik**, M. A. Hollis, E. R. Martin, and R. R. McCrary, 2024: A global climatology of diabatic heating in tropical easterly waves. *J. Climate*. In-press.

- [12] Hollis, M. A., R. R. McCrary, **J. P. Stachnik**, C. Lewis-Merritt*, and E. R. Martin, 2023: A global climatology of tropical easterly waves. *Climate Dynamics*. doi:10.1007/s00382-023-07025-w.
- [11] Chrisler, B.*, and **J. P. Stachnik**, 2023: Tropical-wave activity and Madden–Julian oscillation termination. *Quart. J. Roy. Met. Soc.*, 149, 61-83, doi:10.1002/qj.4393.
- [10] Chrisler, B.*, and **J. P. Stachnik**, 2021: The moist entropy budget of terminating Madden-Julian oscillation events. *J. Climate*, 34, 4243-4260, doi:10.1175/JCLI-D-20-0064.1.
- [9] **Stachnik, J. P.**, and B. Chrisler*, 2020: An index intercomparison for MJO events and termination. *J. Geophys. Res. Atmos.*, 125, e2020JD032507, doi:10.1029/2020JD032507.
- [8] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, and S. Thual, 2015: Evaluating MJO initiation and decay in the skeleton model using an RMM-like index. *J. Geophys. Res. Atmos.*, 120, 11486-11508, doi:10.1002/2015JD023916.
- [7] **Stachnik, J. P.**, D. E. Waliser, and A. J. Majda, 2015: Precursor environmental conditions associated with the termination of Madden-Julian oscillation events. *J. Atmos. Sci.*, 72, 1908-1931, doi:10.1175/JAS-D-14-0254.1.
- [6] Li, J.-L. F., W.-L. Lee, D. E. Waliser, **J. P. Stachnik**, E. Fetzer, S. Wong, and Q. Yue, 2014: Characterizing tropical Pacific water vapor and radiative biases in CMIP5 GCMS: Observation-based analyses and a snow and radiation interaction sensitivity experiment. *J. Geophys. Res. Atmos.*, 119, 10981-10995, doi:10.1002/2014JD021924.
- [5] Li, J.-L. F., W.-L. Lee, D. E. Waliser, J. D. Neelin, **J. P. Stachnik**, and T. Lee, 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models: A snow and radiation interaction sensitivity experiment. *J. Geophys. Res. Atmos.*, 119, 3809-3824, doi:10.1029/2013JD021038.
- [4] Hopper, L. J., Jr., C. Schumacher, and **J. P. Stachnik**, 2013: Implementation and assessment of undergraduate learning experiences in SOAP: An atmospheric science research and education program. *J. Geosci. Educ.*, 61, 415-427, doi:10.5408/12-382.1.
- [3] **Stachnik, J. P.**, C. Schumacher, and P. E. Ciesielski, 2013: Total heating characteristics of the ISCCP tropical and subtropical cloud regimes. *J. Climate*, 26, 7097-7116, doi:10.1175/JCLI-D-12-00673.1.
- [2] **Stachnik, J. P.**, and C. Schumacher, 2011: A comparison of the Hadley circulation in modern reanalyses. *J. Geophys. Res. Atmos.*, 116, D22102, doi:10.1029/2011JD016677.
- [1] Lasher-Trapp, S., and **J. P. Stachnik**, 2007: Giant and ultragiant aerosol particle variability over the eastern Great Lakes region. *J. Appl. Meteor. Climatol.*, 46, 651-659, doi:10.1175/JAM2490.1.

PUBLICATIONS IN REVIEW (CONDITIONALLY ACCEPTED AND REVISED)

- [2] Hollis, M. A., **J. P. Stachnik**, C. Lewis-Merritt*, R. R. McCrary, and E. R. Martin: Precipitation characteristics of tropical easterly waves across the global tropics. *J. Geophys. Res. Atmos.* Conditionally accepted, revisions submitted.
- [1] Fahrin, F., A. O. Gonzalez, B. Chrisler*, and **J. P. Stachnik**: The influence of convectively coupled equatorial waves on the southern hemisphere East Pacific ITCZ. *J. Climate*. Conditionally accepted, revisions submitted.

 FUNDED GRANTS

[1] **Stachnik, J. P.** (institutional PI/co-PI), 6/2019-11/2023: *Analysis of TRMM-GPM Observations to Improve our Process-Level Understanding and Modeling of Precipitation and Latent Heating in Tropical Easterly Waves*. With Elinor R. Martin (PI, University of Oklahoma) and Rachel R. McCrary (co-PI, National Center for Atmospheric Research). Subcontract from University of Oklahoma. National Aeronautics and Space Administration (NASA) Precipitation Measuring Missions (PMM), \$100,562.

 SEMINARS AND INVITED TALKS

[17] "Impacts of Energy, Moisture, and Waves on Tropical Precipitation Variability". Department of Geography and Atmospheric Science, University of Kansas, Lawrence, KS, September 2023.

[16] "Climate Change: Tropical Meteorology and Hurricanes". KU Mini College, Lawrence, KS, June 2023.

[15] "An Overview of Physical Climate Science and Climate Change". Haskell Environmental Research Studies (HERS) Summer Internship Program, Lawrence, KS, June 2023.

[14] "An Overview of Physical Climate Science and Climate Change". Haskell Environmental Research Studies (HERS) Summer Internship Program, Lawrence, KS, June 2022.

[13] "An Overview of Physical Climate Science and Climate Change". Haskell Environmental Research Studies (HERS) Summer Internship Program, Lawrence, KS, June 2021.

[12] "Using Observations and Reanalyses to Study the Termination of Madden-Julian Oscillation (MJO) Events". Department of Geological and Atmospheric Sciences, Iowa State University, Ames, IA, December 2019.

[11] "An Overview of Physical Climate Science and Climate Change". Haskell Environmental Research Studies (HERS) Summer Internship Program, Lawrence, KS, June 2019.

[10] "An Overview of Physical Climate Science and Climate Change". Haskell Environmental Research Studies (HERS) Summer Internship Program, Lawrence, KS, June 2018.

[9] "Using Observations and Models to Study Madden-Julian Oscillation Events". Department of Geography and Atmospheric Science, University of Kansas, Lawrence, KS, March 2016.

[8] "Using Observations and a Low-order Dynamic Model to Study MJO Events". Center for Climate Sciences / Joint Institute for Regional Earth System Science and Engineering (JIFRESSE) Seminar, NASA Jet Propulsion Laboratory and University of California, Los Angeles, Pasadena, CA, February 2016.

[7] "Evaluating MJO Event Initiation and Decay in the Skeleton Model using an RMM-like Index". ONR-MURI Workshop, Courant Institute, New York, NY, January 2016.

[6] "Using Observations and a Low-order Dynamic Model to Study MJO Events". Department of Atmospheric Sciences, Texas A&M University, College Station, TX, October 2015.

[5] "Sensitivities of the MJO to the Shape and Strength of the Tropical Warm Pool in the Stochastic Skeleton Model". Workshop on Stochasticity and Organization of Tropical Convection, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Canada, April 2015.

[4] “Preliminary Work Towards Evaluating MJO Initiation and Decay in the Skeleton Model (with Observations and Reanalysis)”. ONR-MURI Workshop, Courant Institute, New York, NY, January 2014.

[3] “Observed Characteristics of Clouds and Precipitating Systems Associated with the Tropical Circulation”. Yuk Yung Lunch Seminar, Caltech, Pasadena, CA, May 2013.

[2] “Characterizing MJO Diabatic Heating by Cloud Regime”. ONR-MURI Workshop, NASA Jet Propulsion Laboratory, Pasadena, CA, February 2013.

[1] “Characterizing the Total Heating of Tropical and Subtropical Cloud Regimes and Implications for the Large-scale Circulation”. NASA Jet Propulsion Laboratory, Pasadena, CA, November 2012.

SELECT CONFERENCE PAPERS AND PRESENTATIONS

[53] Chrisler, B.*, and **J. P. Stachnik**, 2024: A moisture mode analysis of counterintuitive Madden-Julian oscillation events. *36th AMS Conf. Hurricanes and Tropical Meteor.*, Long Beach, CA.

[52] Lewis-Merritt, C.*, **J. P. Stachnik**, 2024: Regional comparisons of precipitation and diabatic heating in easterly waves undergoing convective amplification and decay. *36th AMS Conf. Hurricanes and Tropical Meteor.*, Long Beach, CA.

[51] Kaufman, J., P. Burke, M. Flora, C. Potvin, **J. P. Stachnik**, and D. Rahn, 2024: Identifying environmental precursors of tornadic supercells within NSSL’s Warn-on Forecast system. *40th Conf. Environ. Info. Proc. Technol., 104th Amer. Meteor. Soc. Ann. Meeting*, Baltimore, MD.

[50] Fahrin, F., A. O. Gonzalez, B. Chrisler*, and **J. P. Stachnik**, 2024: The relationship between convectively coupled tropical waves and the East Pacific ITCZ. *12th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon Var., 104th Amer. Meteor. Soc. Ann. Meeting*, Baltimore, MD.

[49] Lewis-Merritt, C.*, and **J. P. Stachnik**, 2023: Applications of latent heating in easterly waves. *NASA Precip. Measuring Missions (PMM) Science Team Meeting*, Minneapolis, MN. (Invited)

[48] Lewis-Merritt, C.*, **J. P. Stachnik**, M. A. Hollis, E. R. Martin, and R. R. McCrary, 2023: A global climatology of easterly wave diabatic heating. *Fifth Spec. Symp. Trop. Meteor. and Trop. Cyclones, 103rd Amer. Meteor. Soc. Ann. Meeting*, Denver, CO.

[47] Hollis, M.A., E. R. Martin, R. R. McCrary, **J. P. Stachnik**, and C. Lewis-Merritt*, 2023: Evolution of curvature vorticity at the center of tropical easterly waves. *Fifth Spec. Symp. Trop. Meteor. and Trop. Cyclones, 103rd Amer. Meteor. Soc. Ann. Meeting*, Denver, CO.

[46] Hollis, M. A., E. R. Martin, R. R. McCrary, **J. P. Stachnik**, and C. Lewis-Merritt*, 2023: Comparison of precipitation around tropical easterly waves in IMERG and MERRA2. *37th Conf. Hydrology, 103rd Amer. Meteor. Soc. Ann. Meeting*, Denver, CO.

[45] **Stachnik, J. P.**, and M. M. Stessman*, 2023: Variability of CloudSat cloud and precipitation characteristics associated with ITCZ width extremes. *36th Conf. Climate Var. and Change, 103rd Amer. Meteor. Soc. Ann. Meeting*, Denver, CO.

[44] Chrisler, B.*, and **J. P. Stachnik**, 2023: An analysis of counterintuitive MJO events. *11th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon Var., 103rd Amer. Meteor. Soc. Ann. Meeting*, Denver, CO.

[43] Chrisler, B.*, and **J. P. Stachnik**, 2023: Tropical wave activity and Madden-Julian oscillation termination. *11th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon*

Var., 103rd Amer. Meteor. Soc. Ann. Meeting, Denver, CO.

[42] Fahrin, F., A. O. Gonzalez, B. Chrisler*, **J. P. Stachnik**, and C. Lewis-Merritt*, 2022: Quantifying the impact of convectively coupled tropical waves on the east Pacific ITCZ during boreal spring. *2022 AGU Fall Meeting*, Chicago, IL.

[41] **Stachnik, J. P.**, and M. M. Stessman*, 2022: Precipitation and latent heating characteristics of tropical and subtropical cloud types from CloudSat and MERRA-2. *Richard H. Johnson Symp.*, 102nd Amer. Meteor. Soc. Ann. Meeting, Houston, TX, Virtual.

[40] Lewis-Merritt, C.*, and **J. P. Stachnik**, 2022: Latent heating in tropical easterly waves and their contribution to global diabatic heating. *Richard H. Johnson Symp.*, 102nd Amer. Meteor. Soc. Ann. Meeting, Houston, TX, Virtual.

[39] Chrisler, B.*, and **J. P. Stachnik**, 2022: Tropical wave activity and Madden-Julian Oscillation event termination. *10th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon Var.*, 102nd Amer. Meteor. Soc. Ann. Meeting, Houston, TX, Virtual.

[38] Longacre, L. R.*, and **J. P. Stachnik**, 2022: Are low-latitude cloud properties changing with Hadley Cell expansion? *21st Ann. Student Conf.*, 102nd Amer. Meteor. Soc. Ann. Meeting, Houston, TX.

[37] Martin, E. R., R. R. McCrary, **J. P. Stachnik**, M. Hollis, and C. Lewis-Merritt*, 2021: Precipitation and latent heating in tropical easterly waves. *NASA Precip. Measuring Missions (PMM) Science Team Meeting*, Virtual. (Invited)

[36] Lewis-Merritt, C.*, and **J. P. Stachnik**, 2021: Latent heating associated with tropical easterly waves. *NASA Precip. Measuring Missions (PMM) Science Team Meeting*, Virtual.

[35] Stessman, M. M.*, **J. P. Stachnik**, 2021: Regional variability of diabatic heating profiles by cloud type associated with ITCZ extremes. *34th AMS Conf. Hurricanes and Tropical Meteor.*, Virtual.

[34] **Stachnik, J. P.**, and B. Chrisler, 2021: Tropical wave – MJO interactions throughout the lifetime of intraseasonal oscillation events. *34th AMS Conf. Hurricanes and Tropical Meteor.*, Virtual.

[33] Chrisler, B.*, and **J. P. Stachnik**, 2021: The moist entropy budget of terminating Madden-Julian oscillation events. *34th AMS Conf. Hurricanes and Tropical Meteor.*, Virtual.

[32] Lewis-Merritt, C.*, and **J. P. Stachnik**, 2021: Easterly wave contributions to diabatic heating in the global tropics. *34th AMS Conf. Hurricanes and Tropical Meteor.*, Virtual.

[31]. Martin, E. R., R. McCrary, **J. P. Stachnik**, M. Hollis, and C. Lewis-Merritt*, 2021: Precipitation and latent heating in tropical easterly waves. *34th AMS Conf. Hurricanes and Tropical Meteor.*, Virtual.

[30] Lewis-Merritt, C.*, and **J. P. Stachnik**, 2021: Diabatic heating profiles in tropical easterly waves: A comparison of TRMM/GPM and MERRA-2. *Fourth Spec. Symp. Trop. Meteor. and Trop. Cyclones*, 101st Amer. Meteor. Soc. Ann. Meeting, Virtual.

[29] Chrisler, B.*, and **J. P. Stachnik**, 2021: The moist entropy budget of terminating Madden-Julian oscillation events. *9th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon Var.*, 101st Amer. Meteor. Soc. Ann. Meeting, Virtual.

[28] Stessman, M. M.*, and **J. P. Stachnik**, 2021: Heating profiles of individual tropical and subtropical clouds from CloudSat and MERRA-2. *34th Conf. Climate Var. and Change*, 101st Amer. Meteor. Soc. Ann. Meeting, Virtual.

- [27] Martin, E. R., **J. P. Stachnik**, R. McCrary, M. Hollis, and C. Lewis-Merritt, C.*, 2020: Building a global tropical easterly wave and latent heating climatology in NASA data. *NASA Precip. Measuring Missions (PMM) Science Team Meeting*, Virtual. (Invited)
- [26] Martin, E. R., **J. P. Stachnik**, and R. McCrary, 2019: Precipitation and latent heating in tropical easterly waves, *NASA Precipitation Measuring Missions (PMM) Science Team Meeting*, Indianapolis, IN. (Invited)
- [25] Asherman, J. T.*, and **J. P. Stachnik**, 2019: Investigating the impacts of hail parameterizations on idealized supercells in the Weather Research and Forecasting model, *Undergraduate Research Day at the Capitol*, Topeka, KS.
- [24] Chrisler, B.*, and **J. P. Stachnik**, 2019: Index intercomparison for MJO event termination. *7th Symp. Madden-Julian Oscillation and Sub-Seasonal Monsoon Var.*, *99th Amer. Meteor. Soc. Ann. Meeting*, Phoenix, AZ.
- [23] **Stachnik, J. P.**, and C. Schumacher, 2019, Observational changes in cloud regimes associated with the interannual variability of Hadley cell width, *32nd Conf. Climate Var. and Change*, *99th Amer. Meteor. Soc. Ann. Meeting*, Phoenix, AZ.
- [22] Asherman, J. T.*, and **J. P. Stachnik**, 2019: Investigating the impact of graupel and hail parameterizations on idealized supercell thunderstorms in the WRF model. *18th Ann. Student Conf.*, *99th Amer. Meteor. Soc. Ann. Meeting*, Phoenix, AZ.
- [21] **Stachnik, J. P.**, and C. Schumacher, 2018: Tropical and subtropical cloud regimes in MERRA reanalyses using an ISCCP simulator. *31st Conf. Climate Var. and Change*, *98th Amer. Meteor. Soc. Ann. Meeting*, Austin, TX.
- [20] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, S. Thual, and H. R. Ogrosky, 2017: MJO event sensitivities to tropical SSTs in observations, low-order, and global climate models. *5th Symp. Predict. Madden-Julian Oscillation: Proc., Predict., and Impact*, *97th Amer. Meteor. Soc. Ann. Meeting*, Seattle, WA.
- [19] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, S. Thual, and H. R. Ogrosky, 2016: ENSO modulation of MJO event variability in observations, GCMs, and the skeleton model. *32nd AMS Conf. Hurricanes and Tropical Meteor.*, San Juan, PR.
- [18] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, and S. Thual, 2015: Evaluating MJO event initiation and decay in the skeleton model using an RMM-like index. *2015 AGU Fall Meeting*, San Francisco, CA.
- [17] **Stachnik, J. P.**, D. E. Waliser, and A. J. Majda, 2014: Precursor environmental conditions associated with the termination of Madden-Julian oscillation events. *2014 AGU Fall Meeting*, San Francisco, CA.
- [16] Li, J.-L. F., W.-L. Lee, D. Waliser, **J. P. Stachnik**, L. Tong, and E. J. Fetzer, 2014: Characterizing tropical Pacific radiative biases and their impacts on SSTs, upper ocean currents, and temperatures in CMIP5 GCMs. *11th Ann. Meeting. Asia Oceania Geos. Soc.*, Sapporo, Japan.
- [15] Li, J.-L. F., W.-L. Lee, D. Waliser, J. D. Neelin, **J. P. Stachnik**, and E. J. Fetzer, 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models. *11th Ann. Meeting. Asia Oceania Geos. Soc.*, Sapporo, Japan.
- [14] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, and S. N. Stechmann, 2014: Applications, sensitivities, and development of an RMM-like index for the MJO skeleton model. *31st AMS Conf. Hurricanes and Tropical Meteor.*, San Diego, CA.

- [13] Li, J.-L. F., W. L. Lee, D. E. Waliser, J. D. Neelin, E. J. Fetzer, **J. P. Stachnik**, S. Wong, and Q. Yu., 2014: Cloud-precipitation-radiation-dynamics interaction in global climate models: A snow and radiation interaction sensitivity experiment. *31st AMS Conf. Hurricanes and Tropical Meteor.*, San Diego, CA.
- [12] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, and S. N. Stechmann, 2013: Preliminary work towards evaluating MJO initiation and decay in the skeleton model. *2013 AGU Fall Meeting*, San Francisco, CA.
- [11] Li, J.-L. F., W. Lee, E. J. Fetzer, D. E. Waliser, T. Lee, **J. P. Stachnik**, S. Wong, Q. Yue, G. L. Stephens, and S. Lee, 2013: The impacts of cloud-radiation bias on circulations and temperatures simulations in CMIP5 and NCAR CESM sensitivity experiments. *2013 AGU Fall Meeting*, San Francisco, CA.
- [10] **Stachnik, J. P.**, C. Schumacher, and C.-L. Lappen, 2012: A mesoscale decomposition of the tropical Hadley cell. *30th AMS Conf. Hurricanes and Tropical Meteor.*, Ponte Vedra Beach, FL.
- [9] **Stachnik, J. P.**, and C. Schumacher, 2011: Tropical and subtropical cloud regimes in reanalysis data using an ISCCP simulator. *World Climate Research Programme (WCRP) Open Sci. Conf.*, Denver, CO.
- [8] **Stachnik, J. P.**, and C. Schumacher, 2010: Hadley cell variability and extremes in reanalysis data: Links to tropical and subtropical precipitating systems. *2010 AGU Fall Meeting*, San Francisco, CA.
- [7] Schumacher, C., L. J. Hopper, Jr., and **J. Stachnik**, 2010: Vignettes on rain and atmospheric variability in southeast Texas. *Houston AMS Chapter Meeting*, Houston, TX.
- [6] Haines*, B., R. Husted*, **J. Stachnik**, and C. Schumacher, 2010: On the spatial variability of storm accumulations in southeast Texas. *9th AMS Ann. Student Conf.*, *90th Amer. Meteor. Soc. Ann. Meeting*, Atlanta, GA.
- [5] Fanning*, A., B. Haines*, **J. Stachnik**, and C. Schumacher, 2009: Does southeast Texas need an additional upper-air station? *8th AMS Ann. Student Conf.*, *89th Amer. Meteor. Soc. Ann. Meeting*, Phoenix, AZ.
- [4] Moore*, J., A. Fanning*, **J. Stachnik**, and C. Schumacher, 2008: Changes in mesoscale divergence structures based on storm evolution. *7th AMS Ann. Student Conf.*, *88th Amer. Meteor. Soc. Ann. Meeting*, New Orleans, LA.
- [3] **Stachnik, J.**, and S. Lasher-Trapp, 2006: Hailstorm simulations using the Weather Research and Forecasting (WRF) model: Microphysical parameterization sensitivities and preliminary verification. *12th AMS Conf. on Cloud Physics*, Madison, WI.
- [2] **Stachnik, J. P.**, and S. Lasher-Trapp, 2005: Giant aerosol particles and aircraft icing. *2nd Ann. Midwest Extreme & Hazardous Wea. Conf.*, Champaign, IL.
- [1] Lasher-Trapp, S., S. Bereznicki, and **J. Stachnik**, 2004: Giant and ultragiant aerosol particles: Source of large supercooled drops in mixed-phase clouds? *14th Int. Conf. on Clouds and Precipitation*, Bologna, Italy.

STUDENT SUPERVISION AND COMMITTEE CHAIRS

PhD Students

Carrie Lewis-Merritt	2022-present	Topic: <i>Environmental conditions and precipitation characteristics associated with tropical easterly wave extremes and MCSs</i>
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Brett Chrisler	2020-present (Comprehensive passed Sp. 2023)	Proposal: <i>"An analysis of MJO termination: Tropical wave activity, counterintuitive events, and comparison of reanalyses and global climate models"</i>
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MS Students

Meghan Anderson	2023 (Transferred to different advisor)	Topic: <i>Progress towards large-scale moist static energy budgets associated with daily ITCZ state transitions</i>
Carrie Lewis-Merritt	2019-2022 (MS Sp. 2022)	Thesis: <i>"A global climatology of tropical easterly wave diabatic heating using satellite and reanalysis data"</i>
Morgan Stessman	2018-2021 (MS with Honors Sp. 2021)	Thesis: <i>"Using CloudSat and MERRA-2 to examine the characteristics and variability of individual cloud types associated with Intertropical Convergence Zone extremes"</i>
Brett Chrisler	2017-2020 (MS Sp. 2020)	Thesis: <i>"The role of moist entropy for the termination of Madden-Julian oscillation events"</i>
Trenton Spencer	2017-2018 (withdrew)	Topic: <i>Progress towards case studies of Madden-Julian oscillation events</i>

BS Students

Logan Longacre	2021-2022 (BS with Honors Sp. 2022)	Undergraduate Thesis: <i>"Are low-latitude cloud characteristics changing with Hadley Cell expansion?"</i>
Jacob Asherman	2018-2019 (BS with Honors Sp. 2019)	Undergraduate Thesis: <i>"Evaluating the impacts of graupel and hail parameterizations on idealized supercells in the Weather Research and Forecasting (WRF) model"</i>
Alden German	2016-2017 (BS Su. 2017)	Seminar: <i>"Tired ears: Tornado warnings, false alarms, and public fatigue"</i>

GRADUATE EXAMINATION AND OTHER COMMITTEES

PhD Students

Fouzia Fahrin (at Iowa State University)	2022-present (Preliminary exam passed Sp. 2023)	Preliminary Report: <i>"Quantifying the impact of convectively coupled tropical waves on precipitation over the East Pacific Ocean during Boreal Spring"</i>
Lucas McMichael	2019-2022 (PhD Sp. 2022)	Dissertation: <i>"Shallow cumulus and the mass-flux framework"</i>
Austen Thelen	Ad hoc final exam committee 2016 (PhD Fa. 2017)	Dissertation: <i>"Regional identity and constructive regionalization in the north Caucasus: Group perceptions and nuances from inside the region"</i>

MS Students

Jerod Kaufman	2023 (Proposal defense Fall 2023)	Proposal: <i>"Identifying environmental precursors of hazardous supercells within NSSL's Warn-on Forecast System (WoFS)"</i>
Jordan Eissner	2019-2020 (MS Su. 2020)	Thesis: <i>"Cloud growth and entrainment rates in shallow cumulus and cumulus congestus during GoAmazon 2014/2015"</i>

Clayton Matheny	2017-2019 (withdrew)	Proposal: " <i>Analyzing west Antarctic snow accumulation trends using snow radar and CloudSat</i> "
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STUDENT AWARDS

Carrie Lewis-Merritt	Self Graduate Fellowship	University of Kansas, Madison & Lila Self Graduate Programs (2023)
Logan Longacre	Father James B. Macelwane Annual Award in Meteorology	American Meteorological Society (2022)
	Undergraduate presentation award	University of Kansas, Undergraduate Research Symposium (2022)
	Undergraduate research award	University of Kansas, Center for Undergraduate Research (2021)
Morgan Stessman	Outstanding poster presentation	34th Conference on Climate Variability and Change, 101st American Meteorological Society Annual Meeting, Virtual (2021)
Jacob Asherman	Undergraduate research award	University of Kansas, Center for Undergraduate Research (2019)

TEACHING EXPERIENCE (UNIVERSITY OF KANSAS)

ATMO 105, *Introductory Meteorology*
Fall 2016, Spring 2017, Fall 2017, Fall 2018, Fall 2021, Fall 2022, Fall 2023

ATMO 106, *Introductory Meteorology, Honors*
Fall 2022, Fall 2023

ATMO 499, *Honors Course in Atmospheric Science*
Spring 2019, Spring 2022

ATMO 505, *Weather Forecasting*
Fall 2018, Fall 2019, Fall 2022

ATMO 606, *Forecasting Practicum – Private Industry*
Fall 2016, Spring 2017

ATMO 607, *Forecasting Intern – National Weather Service*
Fall 2016, Spring 2017

ATMO 615 (Formerly ATMO 531), *Tropical Meteorology*
Fall 2019, Fall 2023

ATMO 630, *Synoptic Meteorology*
Spring 2018, Spring 2019, Spring 2020, Spring 2021, Spring 2023

ATMO 697, *Seminar for Seniors*
Fall 2016, Spring 2017, Spring 2022

ATMO 699, *Undergraduate Research*
Fall 2018, Fall 2021

ATMO 715 (Formerly ATMO 731), *Tropical Meteorology*
Fall 2019, Fall 2023

ATMO 725 (Formerly ATMO 731), *Clouds, Climate, and Precipitation*
 Fall 2017, Fall 2021

ATMO 898, *Readings in Atmospheric Science*
 Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023

ATMO 899, *Master's Thesis*
 Summer 2018, Spring 2019, Summer 2019, Fall 2019, Spring 2020, Summer 2020,
 Fall 2020, Spring 2021, Summer 2021, Fall 2021, Spring 2022

ATMO 998, *Research in Atmospheric Science*
 Spring 2020

ATMO 999, *Doctoral Dissertation*
 Summer 2020, Fall 2020, Spring 2021, Summer 2021, Fall 2021, Fall 2022, Spring
 2023, Summer 2023, Fall 2023

SELECT SERVICE AND SYNERGISTIC ACTIVITIES

Department

Diversity Committee, Chair, 2023-2024

Leading development of Department statement on diversity, equity, inclusion, and belonging (DEIB), attending DEIB sessions at national meetings, and identifying conferences and organizations for student support and recruitment from underrepresented groups

Faculty Affairs Committee, Member, 2018, 2022-2023

Evaluated and ranked sabbatical applications for further review at the College level, reviewed faculty award nominations and assisted annual evaluation reviews, led post-tenure review (PTR) of service contributions for two faculty

Graduate Student Orientation, Panelist, 2018-2023

Provided overview of research and potential committee collaboration to new departmental graduate students in addition to panel discussions on how to be successful in graduate school

WxChallenge, Local Manager, 2018-2023

Responsible for participant registration in the collegiate national weather forecasting competition, paying invoices, communicating WxChallenge updates, resolving errors, and overseeing all local operations

Faculty Search Committee, Member, 2017-2018

Reviewed applicant files, participated in interviews, and coordinated schedules for faculty candidates

Prospective Undergraduate Student Recruitment and Advisor, 2017-2023

Meet with prospective undergraduate students and parents/guardians interested in studying meteorology and atmospheric science at KU

Recruitment and Outreach, Student Recruiter, 2016-2024

Coordinated, organized, and/or staffed a KU booth at the 97th American Meteorological Society (AMS) Annual Meeting (Seattle, WA), 98th AMS Annual Meeting (Austin, TX), 99th AMS Annual Meeting (Phoenix, AZ), 100th AMS Annual Meeting in (Boston, MA), 101st AMS Annual Meeting (Virtual), 102nd AMS Annual Meeting (Houston, TX), 103rd AMS Annual Meeting (Denver, CO), and 104th AMS Annual Meeting (Baltimore, MD). Coordinated and staffed KU booths at the 2021 (Virtual) and 2022 (Champaign, IL) Midwest Student Conference on Atmospheric Research. Prepared promotional materials and followed-up with students after events.

Curriculum and Undergraduate Committee, Member, 2016-2024

Reviewing new course proposals, preparing KU Core nominations, streamlining department curriculum, and other curriculum requests

College

College Academic Council (CAC), Elected Representative for Natural Sciences and Mathematics, 2023-2024

Responsible for considering all curricular and degree changes proposed by College committees in addition to special charges by the Dean addressing key issues affecting the College

University

University Corporation for Atmospheric Research (UCAR), Member Representative, 2018-2023

Attended annual Member's meeting in Boulder, CO, reviewed and voted on bylaw changes, and prepared KU membership renewal applications

Safe Zone Training, Center for Sexuality and Gender Diversity in partnership with the Office of Multicultural Affairs, Mentor, 2016-2024

Serve as an official University resource for students and people seeking guidance and support on issues of sexuality, gender diversity, identity, and expression

Undergraduate Research Awards, Center for Undergraduate Research, Reviewer, 2016

Ranked and reviewed Undergraduate Research Award proposals in natural science

National/International

Reviewer for 15 Journals

Atmosphere, Atmospheric Research, Climate Dynamics, Climatic Change, Dynamics of Atmospheres and Oceans, Geophysical Research Letters, International Journal of Climatology, Journal of Applied Meteorology and Climatology, Journal of Climate, Journal of Geophysical Research - Atmospheres, Journal of the Atmospheric Sciences, Mathematics of Climate and Weather Forecasting, Monthly Weather Review, Pure and Applied Geophysics, Quarterly Journal of the Royal Meteorological Society

Ad hoc Proposal Reviewer

National Science Foundation (NSF), 2024

Proposal Panel Reviewer

National Aeronautics and Space Administration (NASA), 2021

Program Chair

6th Symposium on Prediction of the Madden-Julian Oscillation: Processes, Prediction, and Impact, 98th AMS Annual Meeting, Austin, TX, 2017 (resigned before conference due to personal circumstances)

Session Chair

5th Symposium on Prediction of the Madden-Julian Oscillation: Processes, Prediction, and Impact, 97th AMS Annual Meeting, Seattle, WA, 2017

Judge

Student Poster Competition, 6th Symposium on Prediction of the Madden-Julian Oscillation: Processes, Prediction, and Impact, 98th AMS Annual Meeting, Austin, TX, 2018

Outstanding Student Paper Awards, Atmospheric Science Section, AGU Fall Meeting, 2014-2015

SELECT AWARDS AND RECOGNITIONS

William T. Kemper Fellowship for Teaching Excellence, University of Kansas, nominated

by Department and University runner-up, 2023
US Senator Phil Gramm Doctoral Fellowship, Texas A&M University Office of Graduate Studies, 2013

Outstanding Graduate Teaching Assistant, Texas A&M University Department of Atmospheric Sciences, 2012

Kenneth P. Pipes Endowed Fellowship in Geosciences, Texas A&M University College of Geosciences, 2009-2010

Climate Variability and Change Scholarship, American Meteorological Society, 2007

Charles C. Chappelle Fellowship, Purdue University Graduate School, 2005-2006

FIELD PROGRAM EXPERIENCE

NSF/JAMSTEC Dynamics of the Madden-Julian Oscillation (DYNAMO)/Cooperative Indian Ocean Experiment on Intraseasonal Variability in the Year 2011 (CINDY2011), Maldives, 2011-2012

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union (AGU), Member

American Meteorological Society (AMS), Member