

Justin P. Stachnik

University of Kansas
 214A1 Lindley Hall
 1475 Jayhawk Blvd
 Lawrence, KS 66045-7613
 Tel: 785.864.1176, Fax: 785.864.5378
 E-mail: stachnik@ku.edu

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

- | | |
|---|--------------|
| Assistant Professor
Department of Geography and Atmospheric Science
University of Kansas, Lawrence, KS | 2016–present |
| Postdoctoral Scholar
NASA Jet Propulsion Laboratory, Pasadena, CA
University of California, Los Angeles, CA | 2013–2016 |
| Graduate Research and Teaching Assistant
Texas A&M University, College Station, TX | 2007–2013 |
| Graduate Research Assistant
Purdue University, West Lafayette, IN | 2005–2007 |
| Student Career Experience Program (SCEP)
National Weather Service WFO-LOT, Romeoville, IL | 2004–2007 |

SELECTED HONORS AND AWARDS

- 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
- Outstanding Poster Presentation, World Climate Research Programme (WCRP) Open Science Conference, 2011
- 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

 TEACHING EXPERIENCE (UNIVERSITY OF KANSAS)

ATMO 105, <i>Introductory Meteorology</i>	Fall 2016
ATMO 606, <i>Forecasting Practicum – Private Industry</i>	Fall 2016
ATMO 607, <i>Forecasting Intern – National Weather Service</i>	Fall 2016
ATMO 697, <i>Seminar for Seniors</i>	Fall 2016

 TEACHING EXPERIENCE (TEXAS A&M UNIVERSITY)

ATMO 201, <i>Atmospheric Science</i>	Fall 2012
ATMO 203, <i>Weather Forecasting Lab</i>	Fall 2011
ATMO 291/491, Graduate Assistant/Research Mentor, <i>Research</i>	Fall 2007-Spring 2010
ATMO 456, Graduate Assistant, <i>Practical Weather Forecasting</i>	Spring 2012

 RESEARCH INTERESTS

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

 BOOK CHAPTERS AND PUBLICATIONS IN PREPARATION

[4] **Stachnik, J. P.**, C. Schumacher, and C.-L. Lappen, 2016: An observational decomposition and model reconstruction of clouds and precipitating systems associated with the Hadley circulation. To be submitted to *J. Atmos. Sci.* (in prep).

[3] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, S. Thual, and H. R. Ogrosky, 2016: Sensitivities of the Madden-Julian oscillation to the strength and shape of the tropical warm pool in observations, GCMs, and the skeleton model. To be submitted to *J. Geophys. Res. Atmos.* (in prep).

[2] **Stachnik, J. P.**, and C. Schumacher, 2016: Tropical and subtropical cloud regimes in the MERRA reanalysis using an ISCCP simulator. To be submitted to *J. Climate* (in prep).

[1] **Stachnik, J. P.**, D. E. Waliser, A. J. Majda, S. N. Stechmann, and S. Thual, 2016: Observations of MJO Events and Comparison with the Stochastic Skeleton Model. Within *Predictions, Observations, and Simplified Models for Tropical Intraseasonal Variability. Mathematical Strategies for Climate and Long Range Weather Forecasting in a Hierarchy of Models*, Mathematics of Planet Earth Series, editor A. J. Madja editor (in prep).

 REFEREED PUBLICATIONS

[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.*, 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.

SEMINARS AND INVITED TALKS

- [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.

SELECTED PAPERS AND PRESENTATIONS

**indicates student advised by J.S.*

[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*, 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., **and coauthors**, 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., **and coauthors**, 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.*, 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.*, 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.*, 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.

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

SERVICE AND SYNERGISTIC ACTIVITIES

Reviewer for 10 Journals, *Climate Dynamics, Climatic Change, Geophysical Research Letters, Journal of Applied Meteorology and Climatology, Journal of Climate, Journal of Geophysical Research, Journal of the Atmospheric Sciences, Mathematics of Climate and Weather Forecasting, Monthly Weather Review, Quarterly Journal of the Royal Meteorological Society*

Curriculum Committee, Department of Geography and Atmospheric Science, University of Kansas, 2016-2017.

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

Recruitment Chair, Atmospheric Sciences Graduate Council, Texas A&M University Department of Atmospheric Sciences, 2008-2011

President, Atmospheric Sciences Graduate Council, Department of Atmospheric Sciences, Texas A&M University, 2009-2010

PROFESSIONAL DEVELOPMENT

Preparing for an Academic Career in the Geosciences, On the Cutting Edge, National Association of Geoscience Teachers, June 2012

First Day to Final Grade Learning Community, Center for Teaching Excellence, Texas A&M University, Summer 2010

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union (AGU), Member

American Meteorological Society (AMS), Member