Dr. Jason Naylor

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Education

2012: Ph.D., Atmospheric Sciences, *University of North Dakota*
2008: M.S., Atmospheric Sciences, *University of North Dakota*
2005: B.S., Operational Meteorology, *California University of Pennsylvania*

Professional Experience

August 2016 – Present: Assistant Professor, *University of Louisville*
2014 – 2016: Visiting Assistant Professor, *Purdue University*
2012 – 2014: Postdoctoral Research Scientist, *NorthWest Research Associates*
2008 – 2012: Graduate Research Assistant, *University of North Dakota*
2006 – 2008: Graduate Teaching Assistant, *University of North Dakota*

Research Interests

Tornadogenesis & tornado maintenance; Supercell dynamics; Hurricane dynamics; Microphysical parameterizations; Convective-scale modeling; Mesoscale dynamics; High performance parallel computing; Automation and data mining.

Service and Recognition

EAPS Teaching Honor Roll, Purdue University (Fall 2014, Spring 2015, Fall 2015)
Reviewer, *NOAA OAR*
Reviewer, *Monthly Weather Review*, American Meteorological Society
Reviewer, *Journal of the Atmospheric Sciences*, American Meteorological Society
President, Atmospheric Science Grad Student Assoc., University of North Dakota, 2011-2012
Outstanding Teaching Assistant, University of North Dakota, 2008
Radar Team Leader, SNOwD UNDER field campaign, 2010

Teaching Experience

University of Louisville
GEOS 220 – Contemporary Issue in Meteorology (Fall 2016)
GEOS 219 – Contemporary Issues in Meteorology Lab (Fall 2016)

Purdue University
EAPS 22500 - Science of the Atmosphere (Fall 2014, 2015)
EAPS 39100 - Tornado Outbreak Studies (Spring 2015)
EAPS 39100 - Atmospheric Modeling (Spring 2016)
EAPS 40900 - Applications of Computers to Meteorology (Spring 2016)
EAPS 43100 - Synoptic Laboratory I (Fall 2014, 2015)
EAPS 43400 - Weather Forecasting and Analysis (Spring 2015)
EAPS 53200 - Atmospheric Physics I (Spring 2015, Spring 2016)

EAPS 53500 - Atmospheric Observations and Measurements (Fall 2014, 2015)
EAPS 59100 - Storm Observation Field Course (Summer 2015)

University of North Dakota
AtSc 210 - Introduction to Synoptic Meteorology Laboratory (Fall 2006, 2007)
AtSc 240 - Meteorological Instrumentation Laboratory (Spring 2006, 2007, 2008)

Technical Skills

Parallel Computing - Installation and usage of numerical models (WRF and CM1) on high performance supercomputers
Scientific Programming – Fortran, C, MATLAB, Python, NCL, GEMPAK, shell scripting, netCDF and HDF4 & HDF5 data formats

Peer Reviewed Publications

Naylor, J., and W. Downing, 2016: A mesoscale analysis of the 1974 Super Outbreak. *In preparation for submission to the Electronic Journal of Severe Storms Meteorology.*

Hargrove, Z., M. S. Gilmore, **J. Naylor**, K. Gray, M. Becker, D. Agee, G. P. Compo, J. Whitaker, 2016: Ensemble WRF simulations of the supercell outbreak of 18 March 1925 using the 20th Century Reanalysis. In preparation for *Elec. J. Severe Storms. Metr.*

Naylor, J., and D. A. Schecter, 2014: Evaluation of the impact of moist convection on the development of asymmetric inner core instabilities in simulated tropical cyclones. *J. Adv. Model. Earth Syst.,06.* doi*:* 10.1002/2014MS000366 http://onlinelibrary.wiley.com/enhanced/doi/10.1002/2014MS000366/

Naylor, J., and M. S. Gilmore, 2014: Vorticity evolution leading to tornadogenesis and tornadogenesis failure in simulated supercells. *J. Atmos. Sci.*, **71**, 1201-1217. http://journals.ametsoc.org/doi/abs/10.1175/JAS-D-13-0219.1

Naylor, J., and M. S. Gilmore, 2012: Convective initiation in an idealized cloud model using an updraft nudging technique. *Mon. Wea. Rev.*, **140**, 3699-3705. http://journals.ametsoc.org/doi/abs/10.1175/MWR-D-12-00163.1

Naylor, J., and M. S. Gilmore, 2012: Environmental factors influential to the duration and intensity of tornadoes in simulated supercells. *Geophys. Res. Lett.*, **39**, L17802. http://onlinelibrary.wiley.com/doi/10.1029/2012GL053041/abstract

Naylor, J., M. A. Askelson, and M. S. Gilmore, 2012: Influence of low-level thermodynamic structure on the downdraft properties of simulated supercells. *Mon. Wea. Rev.,* 140, 2575-2589. http://journals.ametsoc.org/doi/abs/10.1175/MWR-D-11-00200.1

Naylor, J., M. S. Gilmore, R. L. Thompson, R. Edwards, and R. B. Wilhelmson, 2012: Comparison of objective supercell identification techniques using an idealized cloud model. *Mon. Wea. Rev.,* 140, 2090-2102. http://journals.ametsoc.org/doi/abs/10.1175/MWR-D-11-00209.1

Oral Presentations

Venue: 28th Conference on Severe Local Storms, Portland, OR, November 2016.
Title: *Exploring the Impact of Storm Relative Helicity on the Relationship Between Cold Pools and Tornadoes*

Venue: Cooperative Institute for Meteorological Satellite Studies, Madison, WI, June 2015.
Title: *Simulation and Analysis of Deep Convective Storms*

Venue: 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA, April 2014.
Title: *Reexamination of Eyewall Instabilities in Simulated Hurricanes*

Venue: National Center for Atmospheric Research, MMM Seminar Series, Boulder, CO, December 2013.
Title: *Vorticity Evolution Leading to Tornadogenesis and Tornadogenesis Failure in Simulated Supercells*

Venue: 26th Conference on Severe Local Storms, Nashville, TN, November 2012.
Title: *Environmental Factors Influential to the Duration and Intensity of Simulated Tornadoes*

Venue: Department of Atmospheric Sciences Seminar Series, University of North Dakota, October 2011.
Title: *Comparison of Objective Supercell Identification Techniques Using an Idealized Cloud Model*

Venue: 15th Northern Plains Convective Workshop, St. Paul, MN, March 2011.
Title: *Simulations of the Supercell Outbreak of 18 March 1925*

Venue: 3rd ACRE Workshop, Baltimore, MD, November 2010.
Title: *Simulations of the Supercell Outbreak of 18 March 1925*

Venue: 24th Conference on Severe Local Storms, Savannah, GA, October 2008.
Title: *The Effect of Variations in Low Level Thermodynamic Structure on the Rear Flank Downdraft of Simulated Supercells*

Venue: 12th Northern Plains Weather Workshop, Bismarck, ND, April 2008.
Title: *Numerical Simulations of Supercells: Determining Environments Favorable for Tornadogenesis*

Informal Publications

Naylor, J., and M. S. Gilmore, 2014: Tornadogenesis and tornadogenesis failure in simulated supercells. *27th Conference on Severe Local Storms*, Madison, WI, Amer Meteor. Soc.

Naylor, J., and D. A. Schecter, 2013: Effect of surface exchange coefficients on the development of inner-core asymmetries in simulated tropical cyclones. *15th Conference on*

Mesoscale Processes, Portland OR, Amer. Meteor. Soc. https://ams.confex.com/ams/15MESO/webprogram/Paper227892.html

Naylor, J., M. S. Gilmore, R. L. Thompson, and R. Edwards, 2010: Characteristics of supercells simulated with tornadic and non-tornadic RUC-2 proximity soundings. Part III. Comparisons at tornado-resolving gridspacing, *25th Conference on Severe Local Storms,* Denver, CO, Amer. Meteor. Soc. https://ams.confex.com/ams/25SLS/techprogram/paper_176278.htm

Becker, M. E., M. S. Gilmore, **J. Naylor**, J. K. Weber, R. A. Maddox, G. P. Compo, J. S. Whitaker, and T. M. Hamill, 2010: Simulations of the supercell outbreak of 18 March 1925. *25th Conference on Severe Local Storms*, Denver, CO, Amer. Meteor. Soc. https://ams.confex.com/ams/25SLS/techprogram/paper_176071.htm

Naylor, J., and M. A. Askelson, 2008: The effect of variations in low level thermodynamic structure on the rear flank downdraft of simulated supercells. *24th Conference on Severe Local Storms*, Savannah, GA, Amer. Meteor. Soc. https://ams.confex.com/ams/24SLS/techprogram/paper_141953.htm