

JEFFREY W. FRAME

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University of Illinois at Urbana-Champaign
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Education:

- Ph.D. The Pennsylvania State University, Department of Meteorology
Dissertation: *The Dynamical Impact of Anvil Shading on Simulated Supercell Thunderstorms*
Adviser: Paul Markowski
January 2004 – December 2008
- M.S. The Pennsylvania State University, Department of Meteorology
Thesis: *The Interaction of Simulated Squall Lines with Complex Terrain*
Adviser: Paul Markowski
August 2001 – December 2003
- B.S. University of Michigan, College of Engineering (Summa Cum Laude)
Major: Atmospheric, Oceanic, and Space Sciences
September 1998 – April 2001

Professional Experience:

- 2010-present Lecturer
Department of Atmospheric Sciences, University of Illinois, Urbana, IL
- 2009 Visiting Assistant Professor
Department of Geosciences, Hobart and William Smith Colleges, Geneva, NY
- 2001-2008 Graduate Research/Teaching Assistant
Department of Meteorology, Pennsylvania State University, University Park, PA
- 2001 National Weather Service, Summer Internship
National Weather Service Forecast Office, White Lake, MI
- 2000 National Weather Service, Summer Volunteer Program
National Weather Service Forecast Office, White Lake, MI

Courses Taught:

ATMS-100	<i>Introduction to Meteorology</i> , Summer 2010 – Present
ATMS-120	<i>Severe and Hazardous Weather</i> , Spring 2010
ATMS-303	<i>Synoptic-Dynamic Weather Analysis</i> , Fall semesters, 2010 – Present
ATMS-313	<i>Synoptic Weather Forecasting</i> , Spring semesters, 2010 – Present
ATMS-314	<i>Mesoscale Dynamics</i> , Spring semesters, 2010 – Present
ATMS-324	<i>Field Studies of Convection</i> , Summer semesters, 2011 – Present
ATMS-490	<i>Independent Study</i> , FA10 (Student: Andrew Fox)
ATMS-492	<i>Capstone Undergraduate Research</i> , Spring 2011 – Present
GEO-150	<i>An Introduction to Severe Weather</i> , Spring, Fall 2009 (HWS)
GEO-160	<i>Weather & Climate</i> , Fall 2009 (HWS)
METEO-003	<i>Introductory Meteorology</i> , Fall 2007 (PSU)
METEO-421	<i>Atmospheric Dynamics I</i> , Spring 2007 (teaching assistant, PSU)
METEO-411	<i>Synoptic Meteorology</i> , Fall 2002, Fall 2004 (teaching assistant, PSU)

Grants and Proposals:

- Geerts, B., S. Steiger, J. Frame, K. Knupp, and K. Kosiba, "Collaborative Research: Ontario Winter Lake-effect Systems – The kinematics, microphysics and dynamics of long-fetch lake-effect systems in OWLeS," National Science Foundation, \$199,672 (funded)
- Steiger, S. M. and J. W. Frame, "Collaborative Research: Dual-Polarimetric Doppler-On-Wheels Observations of Long Lake-Axis-Parallel Lake-Effect Storms over Lakes Erie and Ontario," National Science Foundation Early Grants for Explorative Research (EAGER) program, \$34,711 (funded)
- McCorkle, B. R. (HWS student) and J. W. Frame, "Student Participation in VORTEX2," The Environmental Research Fund, Hobart and William Smith Colleges, \$600 (funded)
- Frame, J. W., "Student Weather Experiences," Center for Teaching and Learning, Hobart and William Smith Colleges, \$1500 (funded)

Publications:

- Frame, J. W. and P. M. Markowski, 2012: Dynamical influences of anvil shading on simulated supercell thunderstorms. *Mon. Wea. Rev.*, in press.
- Steiger, S., R. Schrom, A. Stamm, D. Ruth, K. Jaszka, T. Kress, B. Rathbun, J. Frame, J. Wurman, and K. Kosiba, 2012: Circulations, bounded weak echo regions, and horizontal vortices observed within long lake-axis-parallel lake-effect storms by the Doppler on Wheels. *Mon. Wea. Rev.*, in press.

Frame, J. W. and P. M. Markowski, 2010: Numerical simulations of radiative cooling beneath the anvils of supercell thunderstorms. *Mon. Wea. Rev.*, **138**, 3024-3047.

Frame, J. W., P. M. Markowski, Y. P. Richardson, J. M. Straka, and J. M. Wurman, 2009: Polarimetric and Dual-Doppler radar observations of the Lipscomb County, Texas, supercell thunderstorm on 23 May, 2002. *Mon. Wea. Rev.*, **137**, 544-561.

Frame, J. W., J. L. Petters, P. M. Markowski, and J. Y. Harrington, 2009: An application of the tilted independent pixel approximation to cumulonimbus environments. *Atmos. Res.*, **91**, 127-136.

Frame, J. W. and P. M. Markowski, 2006: The interaction of simulated squall lines with idealized mountain ridges. *Mon. Wea. Rev.*, **134**, 1919-1941.

Markowski, P. M., C. D. Hannon, J. W. Frame, E. Lancaster, A. Pietrycha, R. Edwards, and R. Thompson, 2003: Characteristics of vertical wind profiles near supercells obtained from the Rapid Update Cycle. *Wea. and Forecasting*, **18**, 1262-1272.

Supervised Undergraduate Student Research:

Robert Fritzen: The influence of the Great Lakes on the poleward propagation of synoptic warm fronts, Spring 2013. Designing a website for ATMS-391: Field Studies of Convection, Summer 2012, Trip 1, Summer 2012.

Kyle Yaffe, Andrew Gordon: Analysis of surface thermodynamic characteristics within the rear-flank downdraft of the Wichita, Kansas, tornadic supercell of 14 April 2012., Summer - Fall 2012.

Mark Savin: Single and dual-Doppler radar observations of a nontornadic supercell on 26 May 2009 during VORTEX2, Summer 2012 - Present

Zach Wienhoff: Single and dual-Doppler radar observations of a nontornadic supercell on 6 June 2010 during VORTEX2, Spring 2012 - Present

Eric Ahasic, Tim Cermak: Dual-polarimetric Doppler-on-Wheels observations of long lake-axis-parallel lake-effect storms over Lakes Erie and Ontario, Summer 2011 – Summer 2012.

Kevin Craine: Radar Observations of the November 6, 2010, Lake-Effect Snowstorm in Northwestern Indiana, Spring 2011.

Andrew Fox: Maintained weather forecasting blog, available at <http://forecast490.blogspot.com>, Fall 2010.

Extended Abstracts/Conference Presentations/Posters:

- Savin, M. D. and J. W. Frame, 2012: Single and dual-Doppler radar observations of a left-moving supercell thunderstorm on 26 May 2009. Preprints, *26th Conf. on Severe Local Storms*, Nashville, TN, Amer. Meteor. Soc.
- Wienhoff, Z. B. and J. W. Frame, 2012: Single and dual-Doppler radar observations of a nontornadic supercell thunderstorm on 6 June 2010. Preprints, *26th Conf. on Severe Local Storms*, Nashville, TN, Amer. Meteor. Soc.
- Yaffe, K. B., A. Gordon, and J. W. Frame, 2012: Analysis of surface thermodynamic characteristics within the rear-flank downdraft of the Wichita, Kansas, tornadic supercell of 14 April 2012. Preprints, *26th Conf. on Severe Local Storms*, Nashville, TN, Amer. Meteor. Soc.
- Ahasic, E. T., J. W. Frame, and T. R. Cermak, 2012: Classification of precipitation types in lake-effect snow events using dual-polarimetric Doppler radar observations. Preprints, *16th Symposium on Meteorological Observation and Instrumentation*, New Orleans, LA, Amer. Meteor. Soc.
- Cermak, T. R., J. W. Frame, and E. T. Ahasic, 2012: Dual-polarization observations of vortices and cellular convection within lake-effect snow bands. Preprints, *16th Symposium on Meteorological Observation and Instrumentation*, New Orleans, LA, Amer. Meteor. Soc.
- Frame, J. W. and P. M. Markowski, 2009: The dynamical impact of anvil shading on simulated supercell thunderstorms. Preprints, *5th European Conf. on Severe Storms*, Munich, Germany, European Severe Storms Laboratory.
- Frame, J. W. and P. M. Markowski, 2008: The dynamical impact of anvil shading on simulated supercell thunderstorms. Preprints, *24th Conf. On Severe Local Storms*, Savannah, GA, Amer. Meteor. Soc.
- Frame, J. W. and P. M. Markowski, 2006: Simulations of a supercell thunderstorm with radiative transfer, surface physics, and a soil model. Preprints, *23rd Conf. On Severe Local Storms*, St. Louis, MO, Amer. Meteor. Soc.
- Frame, J. W., P. M. Markowski, Y. P. Richardson, and J. M. Wurman, 2006: Multiple-Doppler observations of a nontornadic supercell on 23 May 2002 using ground-based mobile radars. Preprints, *23rd Conf. On Severe Local Storms*, St. Louis, MO, Amer. Meteor. Soc.
- Frame, J. W. and P. M. Markowski, 2004: The interaction of simulated squall lines with idealized terrain. Preprints, *22nd Conf. On Severe Local Storms*, Hyannis, MA, Amer. Meteor. Soc.
- Markowski, P. M., C. D. Hannon, J. W. Frame, E. Lancaster, A. Pietrycha, R. Edwards, and R. Thompson, 2002: Characteristic of RUC vertical wind profiles near supercells. Preprints, *21st Conf. On Severe Local Storms*, San Antonio, TX, Amer. Meteor. Soc.

Presentations without Extended Abstracts:

"The non-Galilean invariant response to anvil shading in simulated supercell thunderstorms."
34th Annual Northeastern Storms Conference, Springfield, MA, Lyndon State College,
March 2009

"The interaction between simulated squall lines and complex terrain," National Weather
Service, State College, PA, April 2003

Informal Presentations:

"Dr. Frame's Greatest Storm Chases," University of Illinois Student Chapter of the American
Meteorological Society, Urbana, IL, December 2012

"VORTEX2: 2010," University of Illinois Student Chapter of the American Meteorological Society,
Urbana, IL, November 2010

"Tornado Chasing from a Scientific (and a Not So Scientific) Perspective," University of Illinois
Student Chapter of the American Meteorological Society, Urbana, IL, March 2010

"Tornado Chasing from a Scientific (and a Not So Scientific) Perspective," Finger Lakes Institute,
Geneva, NY, December 2009

"VORTEX2: How Tornado Chasing Is Not Like in the Movies," Friday Faculty Lunch Seminar
Series, Hobart and William Smith Colleges, Geneva, NY, October 2009

Media Appearances:

Daily Illini (Urbana, IL), various
Danville (IL) Commercial Appeal, various
Paris (IL) Beacon-News, January 2012
WCFN-TV (Springfield, IL), July 2010
WCIA-TV (Champaign, IL), June 2010

Scientific Society Memberships:

American Meteorological Society, 2000 – present

Selected Awards and Honors:

University of Illinois, List of Instructors Rated as Excellent by their Students, ATMS-100, SU11,
FA11, SP12; ATMS-303, FA11, FA12; ATMS-313, SP11, SP12, SP13; ATMS-314, SP12,
SP13

WxChallenge, Group 1 (Faculty/Staff) Winner/Runner-up, Various, 2011 – present

University of Illinois, List of Instructors Rated as Outstanding by their Students, ATMS-313,
ATMS-314, Spring 2010

Hans Neuberger Award for Excellence in Teaching Meteorology at the Introductory Level, 2008

National Collegiate Weather Forecasting Contest, First place, Graduate Student Division, 2004 –
2005

American Meteorological Society National Weather Service Graduate Fellowship, 2001 – 2002

Chi Epsilon Pi (Meteorology Honor Society) 2001 – present

University of Michigan College of Engineering Distinguished Achievement Award, 2001

National Weather Service Special Service Award, 2000

Supervised Student Awards and Honors:

Robert Fritzen, Zach Wienhoff, Kyle Yaffe: Ogura Outstanding Undergraduate Research Award,
May 2013.

Zach Wienhoff, Kyle Yaffe: Ogura Outstanding Undergraduate Award, May 2013.

Kyle Yaffe: First Place, Undergraduate Poster Competition, School of Earth, Society, and
Environment Research Review, University of Illinois, March 2013.

Kyle Yaffe: Third Place, Student Poster Competition, 26th Conf. on Severe Local Storms, Amer.
Meteor. Soc., November 2012.

Eric Ahasic, Tim Cermak: Ogura Outstanding Undergraduate Research Award, May 2012.

Tim Cermak: First Place, Undergraduate Poster Competition, School of Earth, Society, and
Environment Research Review, University of Illinois, April 2012.

Service:

Local Manager, WxChallenge Forecasting Contest, 2011 – present.

Department of Atmospheric Sciences, University of Illinois, Curriculum Committee, 2010 –
present; Awards Committee, 2012 – present; Graduate Admissions Committee, 2012 –
present.

Peer Reviewer, *Weather and Forecasting*, *Monthly Weather Review*, *Journal of the Atmospheric Sciences*, *Meteorology and Atmospheric Physics*, *Journal of Applied Meteorology and Climatology*, 2007 – present

Textbook Reviewer for Thunderstorms and Tornadoes Chapters of *Severe and Hazardous Weather*, 4th Edition, 2011

Penn State University, Department of Meteorology, Graduate Advisory Council, 2002 - 2007; Colloquium Committee 2003 - 2005

Penn State University, Department of Meteorology, tutor for several meteorology undergraduate classes, including *Introductory Meteorology*, *Survey of Atmospheric Science*, *Synoptic Meteorology*, *Mesoscale Meteorology*, *Atmospheric Dynamics I & II*, *Geophysical Fluid Dynamics* (graduate level) 2002 - 2008

Penn State University, Chi Epsilon Pi, President, 2003 – 2004; 2005 – 2006; Secretary/Historian, 2002 – 2003

Field Experiments:

Ontario Winter Lake-effect Storms (OWLeS), 2012 – Present: Co-Principal Investigator

University of Illinois Doppler on Wheels (UIDOW) Experiment (in association with ATMS-314), 2012

Long-Lake Axis Parallel (LLAP) Experiment, 2010-2011: Co-Principal Investigator

Verification of the Origin of Rotation in Tornadoes Experiment 2 (VORTEX2), 2009-2010: Doppler on Wheels Navigator

Radar Observations of Tornadoes and Thunderstorms Experiment (ROTATE), 2004 – 2005, 2012 – 2013: Forecaster, Navigator, Driver

International H₂O Project (IHOP), 2002: Mobile mesonet team leader