

# CURRICULUM VITAE

RYAN A. WADE

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## **Lecturer / Undergraduate Advisor**

Department of Atmospheric Science  
University of Alabama in Huntsville  
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Huntsville, AL 25806

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## **EDUCATION**

### **Pursuing Ph.D. Atmospheric Science**

University of Alabama in Huntsville, Huntsville, AL  
Anticipated Graduate Date: May 2017

### **M.S. Geosciences - Operational Meteorology/Applied Climatology, July 2003**

Mississippi State University, Starkville, MS

Thesis: *A Thermodynamic and Climatological Analysis of Severe Squall Lines in the Lower Mississippi River Valley.*

### **B.S. Geography/Meteorology, December 1999**

University of South Alabama, Mobile, AL

Minor: Mathematics

## **ACADEMIC/PROFESSIONAL EXPERIENCE**

### **Lecturer / Undergraduate Advisor**, Department of Atmospheric Science

University of Alabama in Huntsville, Huntsville, AL

August 2014 to Present

### **Graduate Research Assistant**, Department of Atmospheric Science

University of Alabama in Huntsville, Huntsville, AL

August 2009 - Present

### **Instructor in Meteorology**, Department of Earth Sciences,

University of South Alabama, Mobile, AL

August 2003 – July 2009

### **Operational Forecaster and Hurricane Analyst** – Coastal Weather Research Center,

University of South Alabama, Mobile, AL

June 2005 – July 2009

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**Broadcast Meteorologist** – Weather Department, WLOX - TV, Biloxi, MS  
August 1999 to June 2005

**Lecturer in Physical Science**, Department of Physics, Mississippi State University,  
Starkville, MS  
January 2002 – May 2003

**Meteorological Technician**, USDA Joint Agricultural Weather Facility, Stoneville, MS  
May 2001 – August 2001  
May 2002 – August 2002

**Graduate Teaching Assistant**, Department of Geosciences, Mississippi State  
University, Starkville, MS  
August 2000 – May 2003

**Meteorological Consultant/Emergency Management**, Jackson County Civil  
Defense/Emergency Management, Pascagoula, MS  
January 2000 – August 2000

## TEACHING EXPERIENCE

### Courses Taught at the University of Alabama in Huntsville

ESS 111	Climate and Global Change
ESS 112	Severe and Hazardous Weather
ESS 351 (490)	Dynamic Meteorology
ATS/ESS 410/510	Operational Weather Forecasting
ATS/ESS 452	Synoptic Meteorology

### Courses Developed and/or Taught at the University of South Alabama

MET 140	Introduction to Meteorology ( <i>New</i> )( <i>Co-Developed</i> )
MET 342	Severe Weather ( <i>New</i> )
MET 353	General Meteorology and Laboratory ( <i>Major Revision</i> )
MET 356	Physical Meteorology
MET 401	Weather Forecasting I ( <i>New</i> )
MET 402	Weather Forecasting II ( <i>New</i> )
MET 454L	Synoptic Meteorology I Laboratory
MET 455L	Synoptic Meteorology II Laboratory
MET 492	Seminar: Advanced Weather Analysis ( <i>New</i> )
MET 492	Seminar: Mesoscale Meteorology ( <i>New</i> )
MET 494	Directed Studies: Broadcast Meteorology
MET 494	Directed Studies: Severe Storms Evaluation
MET 494	Directed Studies: GIS Applications in Meteorology
MET 494	Directed Studies: Technical Writing in Meteorology
MET 497	Broadcast Meteorology Practicum I ( <i>New</i> )
MET 498	Broadcast Meteorology Practicum II ( <i>New</i> )

## **Courses Taught at Mississippi State University**

Physics 1023	Physical Science Survey II
Geography 1123	World Geography ( <i>Distance Learning</i> )
Geography 4633	Statistical Climatology ( <i>Distance Learning</i> )
Geography 1114L	Physical Geography Laboratory
Geology 1111L	Intro to Earth Science Laboratory

## **University of Alabama in Huntsville Teaching / Advising / Program Enhancement**

Advising 50+ students per semester

Proposing and developing 200/300-level courses in Earth & Atmospheric Science

## **South Alabama Meteorology Program Enhancement Activities**

### **Severe Storms Evaluation Field Methods Trip**

Co-lead a group of undergraduate meteorology students on a severe storms field methods trip to the Great Plains for exercises in severe weather forecasting and severe storm structure.

### **Development of the Broadcast Meteorology Track and Curriculum Enhancements**

Developed the Broadcast Track in Meteorology by creating two Broadcast Meteorology Practicum courses and securing technology grant funding for a Broadcast Meteorology Center and Studio. Developed student weather webcasts to promote the Broadcast Meteorology program. Started a student weather forecasting web service for the University of South Alabama community. Spearheaded changes to the Meteorology Program Tracks in order to make students more marketable and attain internship/work experience.

### **Southeastern Coastal and Atmospheric Processes Symposium (SECAPS)**

Founded and became the advisor for an undergraduate run professional symposium on atmospheric and coastal processes. Hosted several keynote and featured speakers on hurricanes, coastal processes, severe storms, and public perceptions of severe weather watches and warnings. This symposium has a significant impact on student recruitment and student professional development opportunities.

### **State of the Art Synoptic Meteorology Laboratory**

Secured funding and performed a complete technology renovation of the Synoptic Meteorology Laboratory. This includes the purchase and installation of 16 Windows/Linux dual-boot computers for use in the Synoptic Meteorology, Weather Forecasting, Radar Meteorology, Meteorological Instrumentation, Satellite Meteorology, and Computer Applications in Meteorology courses.

## RESEARCH ACTIVITIES

### Field Experience:

Mississippi Delta Agricultural Mesonet (2001-2002)  
Univ. of South Alabama Field Methods in Severe Storms Meteorology (2003-2009)  
PLOWs: Profiling of Winter Storms (2009-2010)  
THOR: Tornadoes Hurricanes Observations & Research (2009-2011)  
ABIDE III: Atmospheric Boundary Identification & Delineation Experiment (2012-2014)  
DC3: Deep Convective Clouds & Chemistry (2012) (Co-Ops w/ ABIDE-III)  
OWLeS: Ontario Winter Lake Effect Systems (2013-2014)

### Radar and Profiling Instrumentation Operations and Experience:

UAH MAX: Mobile Alabama X-Band Polarimetric Radar  
UAH ARMOR: Advanced Radar for Meteorological & Operational Research  
UAH MIPS: Mobile Integrated Profiling System  
Vaisala 915 MHz Doppler Wind Profiling Radar  
Vaisala CL31 & CL51 LIDAR Ceilometer  
DeTect Raptor X-Band Profiling Radar  
Radiometrics 12-Channel Microwave Profiling Radiometer  
Halo Compact Doppler Wind LIDAR

### Radar and Profiling Instrumentation Dataset / Software Knowledge & Experience:

NCAR SOLO-II and SOLO-3  
NCAR REORDER  
NCAR CEDRIC  
NCAR RadX  
Vaisala Sigmet Interactive Radar Information System (IRIS)  
IDL & PV-Wave Radar/Profiling Software:  
    NASA RSL: Radar Software Library  
    ANGEL: Analysis of NEXRAD, GPS, EDOT, and LMA  
    UAH MPR, XPR, Ceilometer, Radar, Doppler LIDAR, 915 Profiler Data & Plotting  
GRLevel 2 & 3 Radar Display Software  
NOAA Weather & Climate Toolkit  
Unidata Integrated Data Viewer  
NSSL/CIMMS WDSS-II  
DORADE, UF, IRIS, NEXRAD, NetCDF, CfRadial Radar Data Formats

**Publications:**

Murphy T. A., **R. A. Wade**, and B. C. Carcione 2016: Observations and operational considerations of the 4 June 2013 chaff event in northern Alabama. *J. Operational Meteor.*, 4 (3), 34–45, doi: <http://dx.doi.org/10.15191/nwajom.2016.0403>.

Murphy, T.A, **R.A. Wade**, T.A. Coleman, K.R. Knupp, 2014: Observations and analysis of wave-like reflectivity segments interacting with a quasi-linear convective system. Submitted - *Monthly Weather Review*.

Knupp, K.R., et al, 2013: Meteorological overview of the devastating 27 April 2011 tornado outbreak. Early Online Release: *Bulletin of the American Meteorological Society* 2013. <http://dx.doi.org/10.1175/BAMS-D-11-00229.1>

Blackwell, K.G., J. Holmes, **R. Wade**, and S. K. Kimball, (2006): Collapsing Precipitation Cores in Open-Eyewall Hurricanes at Landfall. *Bulletin of the American Meteorological Society*, **87**, 1310.

**Manuscripts in Preparation:**

Wade, R. A., K. R. Knupp, 2014: Kinematic, microphysical, and polarimetric analysis of atmospheric waves and convective snow in winter cyclones. *Mon. Wea. Rev.*, in preparation, submission August 2016.

Wade, R. A., T.A. Murphy, K. R. Knupp, 2014: Complex supercell mergers and storm-scale interactions during recent severe weather outbreaks. *Mon. Wea. Rev.*, in preparation, submission December 2016.

**Conference Presentations**

Lyza, A. W., **R. Wade**, K. Knupp, B. C. Carcione, S. Latimer, C. J. Stumpf, 2016: The 14 July 2015 Tennessee Valley Tornado Event: Challenges in QLCS Tornado Forecasting and Identification. *American Meteorological Society 96<sup>th</sup> Annual Meeting*, New Orleans, LA, 10 – 14 January 2016.

Knupp, K. R., **R. Wade**, K. Knupp, A. W. Lyza, S. M. Wingo, 2016: Comparison of Estimates of Vertical Motion from Vertically-Pointing Lidar and Radar withing Gust Fronts, Bores and Low-Level Gravity Waves. *American Meteorological Society 96<sup>th</sup> Annual Meeting*, New Orleans, LA, 10 – 14 January 2016.

**Wade, R. A.**, T. Coleman, K. Knupp, 2016: Preliminary Profiling and Polarimetric Radar Analysis of Convective Snowbands and Atmospheric Waves during the 25 February 2015 Southeastern U. S. Heavy Snow Event. *AMS 37<sup>th</sup> Conference on Radar Meteorology*, Norman, OK, 14-18 September 2015.

**Wade, R. A.**, K. Knupp, D. Phillips, T. A. Murphy, A. Sherrer, A. Mayhew, A. Lyza, B. Freitag 2015: MIPS observations of the kinematic, thermodynamic, and microphysical characteristics of lake-effect snow bands during the Ontario Winter

- Lake-effect Systems (OWLeS) field project. *AMS 37<sup>th</sup> Conference on Radar Meteorology*, Norman, OK, 14-18 September 2015.
- Wade, R. A.,** K.R. Knupp 2015: Preliminary Polarimetric and Atmospheric Profiling Analysis of Convective Snowbands & Waves during the 25 February 2015 Southeastern U.S. Heavy Snow Event. *13th Southeast Severe Storms Symposium*, Starkville, MS, 2015.
- Wade, R. A.,** 2014: The Ontario Winter Lake-effect Systems (OWLeS) Field Project: Preliminary Radar & Profiling Observations of Mesoscale Convective Snow Systems. *12th Annual Southeast Severe Storms Symposium*, Starkville, MS, 4-5 April 2014.
- Wade, R. A.,** T. A. Murphy, K. R. Knupp, 2014: Complex Supercell Mergers and Storm-Scale Interactions During Recent Severe Weather Outbreaks. *12th Annual Southeast Severe Storms Symposium*, Starkville, MS, 4-5 April 2014.
- Wade, R. A.,** T. A. Murphy, K. R. Knupp, 2014: Complex Supercell Mergers and Storm-Scale Interactions During Recent Severe Weather Outbreaks. *American Meteorological Society 94<sup>th</sup> Annual Meeting*. Atlanta, GA , 3-6 February 2014.
- Wade, R. A.,** T. A. Murphy, K. R. Knupp, 2013: Complex Supercell Mergers and Storm-Scale Interactions During Recent Severe Weather Outbreaks. *National Weather Association 38th Annual Meeting*. Charleston, SC , 12-17 October, 2013.
- Wade, R. A.,** K. R. Knupp, 2013: Polarimetric and Atmospheric Profiling Measurements of Convective Snowbands and Atmospheric Waves during PLOWS. *AMS 36<sup>th</sup> Conference on Radar Meteorology*. Breckenridge, CO, 16-20 September 2013.
- Wade, R. A.,** 2013: Polarimetric and Atmospheric Profiling Measurements of Convective Snowbands and Atmospheric Waves during PLOWS. *11th Annual Southeast Severe Storms Symposium*, Starkville, MS, 22-23 March 2013.
- Wade, R. A.,** K. R. Knupp, 2012: Atmospheric Profiling in Extreme Conditions during 2011: 10 January Tennessee Valley Thundersnow and 27 April Super Outbreak. *Southeastern Coastal and Atmospheric Processes Symposium*. University of South Alabama, Mobile, AL, 23-24 March 2012.
- Wade, R. A.,** 2012: A kinematic, multiple Doppler, and dual-pol radar analysis of the

- mid-day tornadic QLCS during the historic April 27<sup>th</sup> super outbreak. *26<sup>th</sup> AMS Conference on Severe Local Storms*, Nashville, TN, 5-8 November 2012.
- Wade, R. A.**, 2012: A kinematic, multiple Doppler, and dual-pol radar analysis of the mid-day tornadic QLCS during the historic April 27<sup>th</sup> super outbreak. *10th Annual Southeast Severe Storms Symposium*, Starkville, MS, 2-3 March 2012.
- Wade, R. A.**, T. A. Murphy, K. R. Knupp, 2012: Integrated ground-based observations of atmospheric waves and convective snow in winter cyclones during PLOWS. *American Meteorological Society 92nd Annual Meeting*. New Orleans, LA, 22-26 January 2012.
- Wade, R. A.**, T. A. Murphy, K. R. Knupp, 2011: Preliminary observations of the mid-day 27 April 2011 north Alabama tornadic QLCS from multiple radar platforms. *National Weather Association 36th Annual Meeting*. Birmingham, AL, 15-20 October, 2011.
- Wade, R. A.**, K. R. Knupp, 2011: Kinematic and microphysical analysis of the 10 January 2011 north Alabama thundersnow event during PLOWS. *AMS 35<sup>th</sup> Conference on Radar Meteorology*. Pittsburgh, PA, 26-40 September 2011.
- Wade, R. A.**, K. R. Knupp, 2010: Profiling of Winter Storms: An Overview, Observations and Opportunities. *Southeastern Coastal and Atmospheric Processes Symposium*. University of South Alabama, Mobile, AL, 26-27 February 2010.
- Terwey, W. D., **R. A. Wade**, 2010: Poster - Analysis of the 15 May 1998 Iowa/Minnesota derecho. *25<sup>th</sup> Conference on Severe Local Storms*. 11-14 October 2010, Denver, CO. Paper # P1.3.
- Wade, R. A.**, K. R. Knupp, 2010: Profiling of Winter Storms: An Overview, Observations and Opportunities. *Southeastern Coastal and Atmospheric Processes Symposium*. University of South Alabama, Mobile, AL, 26-27 February 2010.
- J. Holmes, Blackwell, K.G., **R. A. Wade**, and S. K. Kimball, 2006: Collapsing precipitation cores in open-eyewall hurricanes at landfall: Are these cores actually downbursts associated with extreme surface wind gusts? *American Meteorological Society's 27<sup>th</sup> Conference on Hurricanes and Tropical Meteorology*, 24-28 April 2006, Monterey, CA, Paper # 7B.7
- Wade, R. A.**, and K. G. Blackwell, 2006: The Historic and Record-Breaking 2005

- Hurricane Season: Perspectives from USA's Coastal Weather Research Center. *Southeastern Coastal and Atmospheric Processes Symposium*. University of South Alabama, Mobile, AL, 31 March – 1 April 2006.
- Blackwell, K.G., J. Holmes, **R. A. Wade**, and S. K. Kimball, 2006: Poster - Collapsing precipitation cores in hurricanes at landfall: Possible downbursts and extreme surface wind gusts. *U. S. Government 60<sup>th</sup> Interdepartmental Hurricane Conference*, U. S. Government Office of the Federal Coordinator for Meteorology, Mobile, AL, 20-24 March 2006.
- Wade, R. A.**, 2003: Poster - Using GIS to Analyze and Compare the 1960-1990 Climate Normals to the 1970-2000 Climate Normals for First Order and Cooperative Weather Observing Stations in Mississippi. *2<sup>nd</sup> Annual Southeast Severe Storms Symposium*, Starkville, MS, 21-23 March 2003
- Wade, R. A.**, 2002: Poster - A Preliminary Survey and Squall Line Climatology for NWSFOs Jackson, MS and Memphis, TN County Warning Areas. *57<sup>th</sup> Annual Meeting – Association of American Geographers Southeastern Division (SEDAAG)*, Richmond, VA, 23-26 November 2002.

## **Current Research**

Utilizing polarimetric radar and ground-based remote sensing to study:

- Precipitation characteristics, kinematics, and microphysics of winter storms.
- Impact of atmospheric gravity waves and shear-induced waves in winter storms.
- Atmospheric gravity wave impacts on quasi-linear convective systems.
- Impact of storm cell mergers on tornadogenesis and tornado intensity.

## **University Internal Grant Activity**

University of South Alabama Academic Affairs Appropriation. Synoptic Meteorology Laboratory Technology Renovation.

**Results: Awarded \$25,600, November 2007.**

University of South Alabama College of Arts and Sciences Technological Infrastructure Award. Broadcast Meteorology Center Studio Development.

**Results: Awarded \$11,500, March 2006.**

University of South Alabama College of Arts and Sciences Technological Infrastructure Award. Professional Broadcast Weather Graphics System.

**Results: Awarded \$26,620, March 2005.**



## SERVICE

### Research Community, University, College, and Departmental Service

- Reviewer, Journal of Atmospheric and Oceanic Technology
- Reviewer, Monthly Weather Review
- Graduate Student Representative to Atmospheric Science Department – University of Alabama in Huntsville (2010 – 2011)
- Faculty Advisor, University of South Alabama Student Chapter of the American Meteorological Society (2003-2009)
- South Alabama College of Arts and Sciences Technology Committee (2005/2006)
- South Alabama Meteorology Assessment Committee (2003-2009)
- South Alabama Earth Sciences Curriculum Committee (2003-2008)
- South Alabama Earth Sciences Textbook/Library Committee (2003 – 2009)
- South Alabama Earth Sciences Field Trip Committee (2006-2009)
- South Alabama Meteorology Faculty Hiring Committees (2006, 2007, 2009)
- Host - Meteorology Program Preview Days (Student Recruitment) (2003-2009)
- UAH Graduate Student Open House (2012 – 2014)
- Visit Coordinator – Hurricane Expert Dr Bill Gray – visit to UAH (2011)
- Visit Coordinator – Hurricane Expert Dr Greg Forbes – visit to UAH (2011)
- Tours of UAH Mobile Radars – 41<sup>st</sup> Broadcast Meteorology Conference (2013)
- Tours of UAH Mobile Radars – 2014 AMS Annual Conference – Atlanta, GA

### Community Service and Outreach

- Be Ready Camp – U.S. Space & Rocket Center: Taught a course on storm structure and severe weather safety to middle school students. (2010 – 2013)
- STEM & Severe Weather Outreach at Schools
  - Hampton Cove Middle School (2012& 2013)
  - Buckhorn High School (2013)
  - Clements High School (2012)
  - Sparkman Middle School (2011)
  - Riverton Elementary School (2010)
- Nashville Severe Weather Awareness Days (2013 &2014)
- Rocket City Weather Fest (2010 – 2014)
- NWA WeatherFest in Birmingham (2011)
- ChargerCon at the University of Alabama in Huntsville ((2012)
- Weather Warnings Town Hall Meeting (2012)
- Science Olympiad at UAHuntsville and South Alabama (2003 – 2012)
- Girls Exploring Math & Science (2004 – 2012)
- SciQuest Hands on Trucks (2012 & 2013)
- Tours of UAH Mobile Radars – Southeast Severe Storms Symposium (2013)
- Tours of Mobile Radars – Southeastern Coastal & Atmos Processes Symp. (2012)
- Moderator – Huntsville AMS Panel Discussion: The Future of Weather Radar
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## Media Interviews

- Use of Unmanned Aerial Systems in Severe Weather Research: WAAY (2015)
- SWIRLL Ribbon-Cutting: WAAY (2014), WAFF (2014).
- Ontario Winter Lake Effect Systems Field Project: The Syracuse Post-Standard (2014), WAAY-TV (2014), WSYR-TV (2014), The Weather Network (Canada)(2013), WAFF-TV (2013), WeatherBrains Podcast (2013)
- Severe Weather & Hurricane Research at UAH: The Weather Channel (2014), WeatherBrains Podcst (2014), WAFF-TV (2013), WHNT-TV (2012, 2011), WAAY-TV (2013, 2012, 2011, 2010), The Huntsville Times (2011), The Birmingham News (2011)
- Radar Blob Over Huntsville (Military Chaff – 2013): WAAY-TV, WVUA-TV

## Contribution to Videos

2005: Professional DVD: *“Hurricane Katrina: America’s Costliest Storm”*.

Producer: Dr. Bill Williams and Dogwood Productions, Inc.

2004: Professional DVD: *“Hurricane Ivan: A Portrait from Earth and Space”*.

Producer: Dr. Bill Williams and Dogwood Productions, Inc.

## AFFILIATIONS (Current and Past)

American Meteorological Society

National Weather Association

Huntsville Chapter of the AMS/NWA

University of Alabama in Huntsville AMS Chapter

Association of American Geographers Southeastern Division (SEDAAG)

Central Gulf Coast Chapter of the NWA

University of South Alabama AMS Chapter

## AWARDS AND OTHER ACTIVITIES

- South Alabama College of Arts & Sciences Excellence in Teaching Award (2009)
- Graduate Assistantship, Mississippi State University
- Member of the Year, East Mississippi Chapter of the American Meteorological Society/National Weather Association
- Officer (Secretary), Huntsville Chapter of the AMS & NWA
- President, East Mississippi Chapter of the American Meteorological Society/National Weather Association, 2001/2002
- Founder of the Southeast Severe Storms Symposium at Mississippi State University
- Advisor to the Univ of South Alabama Chapter of the American Meteorological Society
- Founder and advisor to the Southeastern Coastal and Atmospheric Processes Symposium
- Faculty Advisor to Meteorology Students
- Member of the Organizing Committee for the 1998 and 1999 Mississippi Gulf Coast Hurricane Conferences