

VITA

DEANNA A. HENCE

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Career Objectives

To combine my interests in high-impact mesoscale meteorology and mesoscale/synoptic-scale weather interactions, precipitation processes, cloud physics, and cloud dynamics with societal impact analysis, science and crisis/risk communication, policy, education, and/or outreach.

Education

2011 PhD Atmospheric Sciences, *University of Washington*
2007 M.S. Atmospheric Sciences, *University of Washington*
2004 B.S. Atmospheric, Oceanic, and Space Sciences, *University of Michigan*

Research Experience

2014-
2012-14 **Assistant Professor**, Department of Atmospheric Science, University of Illinois
Post-doctoral Research Fellow, NASA Goddard Space Flight Center
Supervisor: Scott Braun
Topic: Examining the influences of large-scale conditions upon tropical cyclone structure with high-altitude airborne instrumentation.

2012 **Post-doctoral Researcher**, Department of Atmospheric Sciences, University of Washington
Supervisor: Robert A. Houze, Jr.
Topic: Using ground-based radar to categorize convective precipitation structure and kinematics within the changing large-scale conditions of the Madden-Julian Oscillation.

2004-11 **Graduate Research Assistant**, Department of Atmospheric Sciences, University of Washington
Advisor: Robert A. Houze, Jr.
Topic: The study of the precipitation and kinematic structure of hurricane eyewalls and rainbands using airborne and space-borne radar systems.

2004 **SOARS Protégé**, Atmospheric Technology Division (ATD), NCAR
Research Mentors: Wen-Chau Lee, Jay Miller, Michael Bell
Topic: Hail formation within a supercell sampled with airborne dual-Doppler radar.

2003 **SOARS Protégé**, Atmospheric Technology Division (ATD), NCAR
Mentors: Wen-Chau Lee, Michael Bell
Topic: Airborne dual-Doppler analysis of the kinematic structure of a supercell.

2002 **Student Researcher**, University of Michigan Undergraduate Research Experience for Undergraduates
Mentor: Perry Samson, University of Michigan AOSS

1999 **Student Researcher**, University of Michigan Undergraduate Research Opportunity Program
Mentor: Kathleen Colling, University of Michigan School of Nursing

Grants and Fellowships

2016 NSF Doppler on Wheels Educational Deployment
2012-14 NASA Postdoctoral Research Fellowship
2006-9 NASA Earth System Science Fellowship
2004-5 Graduate Opportunity Program Research Assistantship
2004-5 Graduate School Top Scholar Award recipient
Graduate Diversity Fellow

Invited Contributions to Books

Hence, D., 2015: A Global Dataset for Precipitation Looking Back at TRMM and Forward to GPM. *Encyclopedia of G/S*, Springer International Publishing, Cham, 1–8.

Peer-Reviewed Publications

- Hence, D. A. and R. A. Houze, Jr., 2012: [Vertical structure of tropical cyclone rainbands as seen by the TRMM Precipitation Radar](#). *J. Atmos. Sci.*, **69**, 2644-2661.
- Hence, D. A. and R. A. Houze, Jr., 2012: [Vertical structure of tropical cyclones with concentric eyewalls as seen by the TRMM Precipitation Radar](#). *J. Atmos. Sci.*, **69**, 1021-1036.
- Hence, D. A. and R. A. Houze, Jr., 2011: [Vertical structure of hurricane eyewalls as seen by the TRMM Precipitation Radar](#). *J. Atmos. Sci., J. Atmos. Sci.*, **68**, 1637-1652.
- Hence, D. A. and R. A. Houze, Jr., 2008: [Kinematic structure of convective-scale elements in the rainbands of Hurricanes Katrina and Rita \(2005\)](#). *J. Geophys. Res.*, **113**, D15108.

Students Mentored

M.S. Jeffrey Thayer (in progress)
B.S. Alexis Hunzinger (Capstone Research, U. Illinois), Daniel Orlandi (Southern Illinois U/Federal University of Rio de Janeiro), Tia Lerud (U. Washington), Tyler Burns (U. Washington)

Honors and Awards

- 2016 NASA Group Achievement Award, NASA Hurricane and Severe Storm Sentinel (HS3) Experiment
2015 Invited participant, NSF Expert Witness Training Academy
2009 NSF-funded participant, AMS Summer Policy Colloquium

Teaching Experience

- 2016 Guest Lecturer, Managing a Changing Climate, South Central Climate Science Center, University of Oklahoma
2016 Radar Remote Sensing, ATMS 410, Spring Semester, University of Illinois
2015 Physical Meteorology, ATMS 504, Fall Semester, University of Illinois
2014 Substitute Instructor, ATMS 100, Fall Semester, University of Illinois
2009 Informal science education professional development, [Portal to the Public](#)
2005 Teaching Assistant, Atmospheric Sciences 101. Professor: Robert A. Houze, Jr.

Field Experience

- 2016 OLYMPEX Ground Validation Experiment
Duties: NPol scientist; daily NPol data synthesis and writing of NPol science summaries
- 2012-14 Hurricane and Severe Storm Sentinel Experiment (HS3)
Duties: Mission Scientist; member of inner-core flight module development team; assisted in coordination of scientific operations; monitored in-flight weather conditions for Global Hawk.
- 2011 Dynamics of the Madden-Julian Oscillation (DYNAMO)
Duties: S-PolKa scientific PI representative; coordinated S-PolKa science operations; conducted daily S-PolKa data synthesis and writing of S-PolKa science summaries.
- 2005 Rainband and Intensity Change Experiment (RAINEX)
Duties: In-flight radar scientist and communications; operations center communications, data analysis, and production of quick-look products.
- 2003 Bow Echo and MCV Experiment (BAMEX)

Academic Service

- 2016- Diversity Advocate, Graduate Admissions Committee, Department of Atmospheric Sciences, University of Illinois.
- 2015- Council for Equity and Access, University of Illinois
- 2014- Curriculum Committee, Department of Atmospheric Sciences, University of Illinois
- 2014 Presenter, *Effective Oral Presentation*, ATMS 571 Professional Development
- 2011- Reviewer, *Monthly Weather Review*, *Journal of the Atmospheric Sciences*,
- 2015 Panelist, NSF Panel Review

- 2015 Panelist, NASA Panel Review
 2015 Judge, School of Earth, Society and the Environment Research Review, University of Illinois

Community Service, including:

- 2016 Panelist, LGBTQA in Academia, oSTEM Chapter Meeting
 2015 Guest, "What is Wind?", Brains On!, Minnesota Public Radio
 2015 Presenter, *Effective Scientific Communication*, STEM-FEM Alliance, University of Illinois
 2015 Panelist, *The Perspectives of Underrepresented Women in STEM*, STEM-FEM Alliance, University of Illinois
 2013-14 Participant, HS3 Educational Classroom Connections, Global Hawk Operational Center-East, NASA Wallops Flight Facility
 2013 Presenter, *Hurricanes, NASA, and HS3*, NASA GSFC Summer Professional Development Training for Educators: Natural Hazards
 2011 Presenter, *Paws-on Science*, Pacific Science Center
 2008-10 Member, GO-MAP Student Advisory Board
 2009 Presenter, *Earth Revealed: A View of our Planet from Space*, Pacific Science Center
 2008 Presenter, Ron McNair Camp-in, Pacific Science Center
 2007-9 Co-founder and coordinator, UW Atmospheric Sciences Women's Group
 2007-8 Member, Presidents Advisory Committee on Women
 2005-7 Coordinator and frequent presenter, UW Atmospheric Sciences Graduate Student Outreach
 2005-7 Activity leader, NOAA Science Camp, National Weather Service Seattle Weather Forecast Office
 2005-7 Volunteer, National Weather Service Seattle Weather Forecast Office

Membership in Professional Organizations

- 2003- American Meteorological Society
 2007- American Geophysical Union
 2015- American Association for the Advancement of Science

Scholarly Presentation

Oral, including:

- Hence, D.A. and S.A. Braun, 2015: Hurricane Nadine's interaction with the SAL as seen in COAMPS-TC simulations. NASA HS3 Science Team Meeting, May Science Team Meeting, Mountain View, CA.
 Hence, D.A. and S.A. Braun, 2014: Interactions between dry air and Hurricane Nadine (2012). NASA HS3 Science Team Meeting, May Science and Planning Meeting, Mountain View, CA.
 Hence, D.A. and S.A. Braun, 2014: Interactions between dry air and Hurricane Nadine (2012). American Meteorological Society, 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA.
 Hence, D.A., 2013: Interactions between dry air and Hurricane Nadine. *Invited Seminar*, Department of Atmospheric Sciences, University of Arizona, Tucson, AZ.
 Hence, D.A., 2013: Interfaces between dry air and Hurricane Nadine. *Invited Seminar*, Department of Atmospheric Sciences, University of Illinois, Urbana, IL.
 Hence, D.A., 2013: The interfaces between dry air and Hurricane Nadine. Young Scientist Forum, NASA Goddard Space Flight Center, Greenbelt, MD.
 Hence, D.A., 2013: The interfaces between dry air and Hurricane Nadine. Code 612 Lab Meeting, NASA Goddard Space Flight Center, Greenbelt, MD.
 Hence, D.A., 2013: Interfaces between dry air and Hurricane Nadine. HS3 Science Team Meeting, May Science and Planning Meeting, Mountain View, CA.
 Hence, D.A., 2013: Influences upon tropical cyclone precipitation structure. *Invited Seminar*, School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook, NY.
 Hence, D.A., 2013: Influences upon tropical cyclone precipitation structure. *Atmospheric Sciences Colloquia*, Department of Atmospheric Sciences, University of Illinois, Urbana, IL.
Atmospheric Sciences Colloquia, Department of Atmospheric Sciences, University of Illinois, Urbana, IL.

- Hence, D.A. and R.A. Houze, Jr., 2012: The vertical structure of tropical cyclone rainbands as seen by the TRMM Precipitation Radar. American Meteorological Society, 30th Conference on Hurricanes and Tropical Meteorology, Jacksonville, FL.
- Hence, D.A., 2012: Influences upon tropical cyclone precipitation structure. *Invited Seminar*, Department of Atmospheric and Environmental Sciences, University at Albany, Albany, NY.
- Hence, D.A. and R.A. Houze, Jr., 2012: The vertical structure of tropical cyclone precipitation as seen by the TRMM Precipitation Radar. American Meteorological Society, 92nd Annual Meeting, New Orleans, LA.
- Hence, D. A. and R. A. Houze, Jr, 2010: Vertical distribution of radar reflectivity in eyewalls observed by TRMM. American Meteorological Society, 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
- Hence, D. A. and R. A. Houze, Jr., 2008: Three-dimensional precipitation structure of tropical cyclones. American Meteorological Society, 28th Conference on Hurricanes and Tropical Meteorology, Orlando, FL.
- Hence, D. A., 2008: Three-dimensional precipitation structure of tropical cyclones. *Clouds and Precipitation Seminar*, Department of Atmospheric Sciences, University of Washington, Seattle, WA.
- Hence, D. A., Houze, R. A. and S. R. Brodzik, 2008: The 3-D reflectivity structure of intense Atlantic hurricanes as seen by the TRMM PR. National Aeronautics and Space Administration, 3rd Tropical Rainfall Measurement Mission Conference, Las Vegas, NV.
- Hence, D., 2007: The structure of rainbands in hurricanes Katrina and Rita. *Clouds and Precipitation Seminar*, Department of Atmospheric Sciences, University of Washington, Seattle, WA.
- Hence, D. and R. Houze, 2006: Rainband structures observed in RAINEX. American Meteorological Society, 27th Conference on Hurricanes and Tropical Meteorology, Monterey, CA.
- Hence, D., 2005: Hurricane eyewalls and rainbands: observations from TRMM PR and RAINEX. *Clouds and Precipitation Seminar*, Department of Atmospheric Sciences, University of Washington, Seattle, WA.
- Hence, D., 2004: Wind structure and its impact on hail production: A VORTEX '95 case study using airborne Doppler radar. *SOARS® Protégé Colloquium*, University Corporation for Atmospheric Research, Boulder, CO.
- Hence, D., 2003: Investigation of conceptual hail-formation models using airborne Doppler radar. *SOARS® Protégé Colloquium*, University Corporation for Atmospheric Research, Boulder, CO.

Posters:

- Deanna Hence and Scott Braun, "Impacts of the presence of dry air upon Hurricane Nadine (2012)". American Meteorological Society, 15th Mesoscale Conference, Portland, OR 2013.
- Deanna Hence, Tia Lerud and Robert Houze, Jr., "Vertical Structure of Tropical Cyclones undergoing Eyewall Replacement Cycles as seen by the TRMM PR." NASA Precipitation Measurement Mission Science Team Meeting, 2010 Annual Meeting, Seattle, WA, November 2010.
- Deanna Hence, Robert Houze, Jr. and Stacy Brodzik, "Three-dimensional structure of intense Atlantic hurricanes as seen by the TRMM PR." NASA Precipitation Measurement Mission Science Team Meeting, 2008 Annual Meeting, Ft. Collins, CO, August 2008.
- Deanna Hence, Robert Houze, Jr. and Stacy Brodzik, "Vertical structure of TCSP and RAINEX hurricanes as seen by the TRMM PR." NASA Precipitation Measurement Mission Science Team Meeting, 2007 Annual Meeting, Atlanta, GA, May 2007.
- Deanna Hence and Wen-Chau Lee, "Investigation of conceptual hail-formation models using airborne Doppler radar." American Meteorological Society, 84th Annual Meeting, Third Annual Student Conference, Seattle, WA, Jan. 2004.
- Deanna Hence and Wen-Chau Lee, "Investigation of conceptual hail-formation models using airborne Doppler radar." Society for Advancement of Chicanos and Native Americans in Science, 2003 Annual Conference, Albuquerque, NM, Oct. 2003.

Non-Refereed Publications

- Hence, D., 2004: Wind structure and its impact on hail production: A VORTEX '95 case study using airborne Doppler radar. *Earth, Wind, Sea, and Sky: Protégé Abstracts Significant Opportunities in Atmospheric Research and Science*, University Corporation for Atmospheric Research, Boulder, CO.
- Hence, D., 2004: Wind structure and its impact on hail production: A VORTEX '95 case study using airborne Doppler radar. *SOARS® Protégé Research Papers Summer 2004*, University Corporation for Atmospheric Research, Boulder, CO.

Hence, D., 2003: Investigation of conceptual hail-formation models using airborne Doppler radar. *Earth, Wind, Sea, and Sky: Protégé Abstracts Significant Opportunities in Atmospheric Research and Science*, University Corporation for Atmospheric Research, Boulder, CO.

Hence, D., 2003: Investigation of conceptual hail-formation models using airborne Doppler radar. *SOARS® Protégé Research Papers Summer 2003*, University Corporation for Atmospheric Research, Boulder, CO.