

Kimberly M. Wood

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EDUCATION

Ph.D., 2012, The University of Arizona (Atmospheric Sciences, Remote Sensing)
“Evaluating the impacts of eastern North Pacific tropical cyclones on North America
utilizing remotely sensed and reanalysis data”
Advisor: Elizabeth A. Ritchie

M.S., 2009, The University of Arizona (Atmospheric Sciences)

H.B.S., 2007, Oregon State University (Physics, Writing, magna cum laude)

EMPLOYMENT

2015 – present **Assistant professor, Mississippi State University**

2012 – 2015 **Postdoctoral research associate, the University of Arizona**

2009 – 2012 **Research associate, the University of Arizona**

2011 **Teaching associate, the University of Arizona**

2008 – 2009 **Research assistant, the University of Arizona**

2007 – 2008 **Teaching assistant, the University of Arizona**

2007 **Teaching assistant, Oregon State University**

2005 – 2007 **Undergraduate research assistant, Oregon State University**

2006 **Intern, KPTV, Portland, Oregon**

PUBLICATIONS

Wood, K.M., Rodríguez-Herrera, O.G., E.A. Ritchie, M.F. Piñeros, I.A. Hernández, and J.S. Tyo, 2015: Tropical cyclogenesis detection in the North Pacific using the deviation angle variance technique. *Wea. Forecasting*, *in press*.

Rodríguez-Herrera, O.G., **K.M. Wood**, K.P. Dolling, W.T. Black, E.A. Ritchie, and J.S. Tyo, 2015: Objective automatic storm tracking based on the deviation-angle variance method. *IEEE Geoscience and Remote Sensing Letters*, **12**, 254-258.

Wood, K.M., and E.A. Ritchie, 2014: A 40-year climatology of extratropical transition in the eastern North Pacific. *J. Climate*, **27**, 5999-6015.

Ritchie, E.A., **K.M. Wood**, O.G. Rodríguez-Herrera, M.F. Piñeros, and J.S. Tyo, 2014: Satellite-derived tropical cyclone intensity in the North Pacific Ocean using the deviation-angle variance technique. *Wea. Forecasting*, **29**, 505-516.

Wood, K.M., and E.A. Ritchie, 2013: An updated climatology of tropical cyclone impacts on the southwestern United States. *Mon. Wea. Rev.*, **141**, 4322–4336.

Gutzler, D.S., **K.M. Wood**, E.A. Ritchie, A.V. Douglas, and M.D. Lewis, 2013: Interannual variability of tropical cyclone activity along the Pacific coast of North America. *Atmosfera*, **26**, 149-162.

Wood, K.M., and E.A. Ritchie, 2012: The unique behavior and precipitation pattern associated with Tropical Storm Ignacio (1997). *Mon. Wea. Rev.*, **140**, 3347-3360.

Wood, K.M., 2012: Evaluating the impacts of eastern North Pacific tropical cyclones on North America utilizing remotely sensed and reanalysis data. *Ph.D. dissertation, The University of Arizona*.

Ritchie, E.A., **K.M. Wood**, D.S. Gutzler, and S. White, 2011: The influence of eastern Pacific tropical cyclone remnants on the southwestern United States. *Mon. Wea. Rev.*, **139**, 192–210.

Johnson, K.M., 2007: The effects of air mass origin on cumulus clouds in the Caribbean. *Undergraduate thesis, Oregon State University*.

PROFESSIONAL DEVELOPMENT AND FIELD EXPERIENCE

- 2015 **Workshop for Early Career Geoscience Faculty**
Attended discussion-based sessions on effective teaching strategies, course design, establishing a research program in a new setting, working with research students, balancing professional and personal responsibilities, time management, and other challenges faced by early career faculty.
- 2015 **Guest lecturer, the University of Arizona**
Atmospheric Sciences 441b/541b: Dynamic Meteorology. Covered textbook

chapter on mesoscale circulations. Proctored midterm exam. Developed and graded homework assignments and exam problems.

2014

Eighth International Workshop on Tropical Cyclones, Jeju, Korea

Participated in four working groups (topics: extratropical transition; objective TC structure analysis; objective TC intensity analysis; external influences on TC intensity), led a discussion group, supported the Structure and Structure Change topic chair in summarizing and communicating discussion group feedback to the recommendations committee, and served on the recommendations committee.

Coding workshop leader, The University of Arizona

Developed the first coding workshop for graduate students in the atmospheric sciences department. Created the web site, described good coding practices, explained the use of Linux, developed coding examples in the bash shell, Fortran, Python, and GrADS, and worked with graduate students experienced in MATLAB and NCL who contributed their expertise to the workshop.

2013

Graduate teaching assistant training, The University of Arizona

Observed and offered feedback on practice lectures given by graduate teaching assistants. Presided over and participated in training exercises regarding common TA challenges.

2012

Preparing for an Academic Career in the Geosciences Workshop

Attended sessions on lecture preparation, interactive learning, time management, research group management, and other topics related to challenges posed by faculty positions.

2010

Genesis and Rapid Intensification Processes (GRIP) experiment

Acted as a forecaster for a 2-week period during GRIP. Created forecasts for and wrote discussions on current tropical cyclones and potentially developing tropical systems based on satellite and model forecast data, monitored weather conditions for flight missions and communicated with scientists on board, assisted in dropsonde launches on flight missions, processed dropsonde data, and participated in conference call forecast discussions related to the GRIP experiment from the Ft. Lauderdale operations center.

2010, 2012

Guest lecturer, the University of Arizona

Atmospheric Sciences 170A (Introduction to Weather and Climate) Presented a lecture on thermally driven circulations in the atmosphere from the global to the local scale.

Natural Sciences 101 (Weather and Climate) Presented four lectures on topics including heat transport in the atmosphere, pressure and wind, thunderstorms, and tornadoes.

Presented a lecture on hurricanes during a workshop for K-12 science teachers hosted by the University of Arizona.

2008

Tropical Cyclone Structure (TCS) 08 field campaign

Acted as a forecaster for a 1-week period during TCS-08. Created current and forecast graphics, explored and analyzed relevant data, and participated in conference call forecast discussions related to the TCS-08 field campaign from the Monterey operations center.

Computing skill sets & experience

- *Programming:* Python, MATLAB, Fortran, shell scripting, Linux utilities
- *Data visualization:* GrADS, Inkscape (vector graphics), NCL, MATLAB
- *Web design:* HTML, CSS, PHP, MySQL

CONFERENCE PAPERS & PRESENTATIONS

Wood, K. M., and E. A. Ritchie, 2015: Distribution and variability of CAPE over the tropical oceans. Extended abstract presented at: 95th American Meteorological Society Annual Meeting; 4 – 8 January 2015; Phoenix, AZ.

Wood, K. M., 2014: Environmental factors affecting tropical cyclone impacts on western North America. 24 April 2014, The University of Arizona, Tucson, AZ.

Rodríguez-Herrera, O. G., K. M. Wood, K. Dolling, W. Black, E. A. Ritchie, and J. S. Tyo, 2014: Objective, Automatic Tracking of Pre-Genesis Tropical Disturbances within the Deviation Angle Variance Method. Extended abstract presented at: 31st Conference on Hurricanes and Tropical Meteorology; 2014 March 31 - April 4; San Diego, California.

Wood, K. M. and E. A. Ritchie, 2014: Large-scale moisture and thermodynamic properties associated with rapid weakening in the eastern North Pacific. Extended abstract presented at: 31st Conference on Hurricanes and Tropical Meteorology; 2014 March 31 - April 4; San Diego, California.

Wood, K. M. and E. A. Ritchie, 2014: A 32-year reanalysis intercomparison of tropical cyclone structure in the eastern North Pacific and North Atlantic. Extended abstract presented at: 31st Conference on Hurricanes and Tropical Meteorology; 2014 March 31 - April 4; San Diego, California.

Mazzarella, L. A. L., E. A. Ritchie, and K. M. Wood, 2014: Eastern North Pacific tropical cyclogenesis using satellite-based observations. Extended abstract presented at: 31st Conference on Hurricanes and Tropical Meteorology; 2014 March 31 - April 4; San Diego, California.

Ritchie, E. A., K. M. Wood, and P. A. Barnard, 2014: Cloud microphysics in tropical cyclogenesis: Investigation of developing and non-developing cloud clusters. Extended abstract presented at: 31st Conference on Hurricanes and Tropical Meteorology; 2014 March 31 - April 4; San Diego, California.

- Ritchie, E. A., and K. M. Wood, 2012: A 40-year climatology of extratropical transition in the eastern North Pacific. Part II: Structure and common large-scale circulation patterns. Extended abstract presented at: 4th International Workshop on Extratropical Transition, 2012 May 20-25, Sainte-Adele, Quebec, Canada.
- Wood, K. M. and E. A. Ritchie, 2012: A 40-year climatology of extratropical transition in the eastern North Pacific. Part I: General characteristics. Extended abstract presented at: 4th International Workshop on Extratropical Transition, 2012 May 20-25, Sainte-Adele, Quebec, Canada.
- Wood, K. M. and E. A. Ritchie, 2012: A 40-year climatology of extratropical transition in the eastern North Pacific. Extended abstract presented at: 30th Conference on Hurricanes and Tropical Meteorology, 2012 April 15-20, Ponte Vedra Beach, Florida.
- Piñeros, M. F., E. A. Ritchie, J. S. Tyo, K. M. Wood, G. Valliere-Kelley, I. A. Hernandez, W. Black, and O. Rodriguez-Herrera, 2012: Tropical cyclone intensity estimation and formation detection using the deviation angle variance technique. Extended abstract presented at: 30th Conference on Hurricanes and Tropical Meteorology, 2012 April 15-20, Ponte Vedra Beach, Florida.
- Wood, K. M. and E. A. Ritchie, 2010: The impact of eastern Pacific tropical cyclones on the climatology of the North American Southwest region. Poster session presented at: 29th Conference on Hurricanes and Tropical Meteorology, 2010 May 10-14, Tucson, Arizona.
- Wood, K. M. and E. A. Ritchie, 2009: Behavior and rainfall patterns associated with unusual TCs in the eastern North Pacific from 1992-2005. Extended abstract presented at: 5th Symposium on Southwest Hydrometeorology, 2009 September 30 – October 1, Albuquerque, NM.
- Wood, K. M. and E. A. Ritchie. The contributions of large-scale circulations versus complex terrain on tropical cyclone precipitation patterns in the American Southwest region. Poster session presented at: EGU 2009 General Assembly, 2009 April 19-24, Vienna, Austria.
- Ritchie, E. A., and K. M. Wood, 2009: The impact of tropical cyclone remnants on the rainfall of the North American southwest region. (Invited) The Precipitation Science Symposium at the 2009 European Geophysical Union (EGU) General Assembly, 2009 April 19-24, Vienna, Austria.
- Ritchie, E. A., K. M. Wood, S. White, and D. S. Gutzler, 2008: The impact of tropical cyclone remnants on the rainfall of the North American Southwest region. Extended abstract presented at: 28th Conference on Hurricanes and Tropical Meteorology, 2008 April 28 – May 2, Orlando, Florida.

Student presentations

Balukas, D. L., E. A. Ritchie, and K. M. Wood, 2015: A Global Investigation of the Impacts of Landfalling Tropical Cyclones on Societies. Extended abstract presented at: 14th Annual Student Conference, 95th American Meteorological Society Annual Meeting; 4 – 8 January 2015; Phoenix, AZ.

Smith, E. K., E. A. Ritchie, and K. M. Wood, 2015: Evaluating forecast accuracy of tropical cyclones undergoing rapid size changes in the North Atlantic. Extended abstract presented at: 14th Annual Student Conference, 95th American Meteorological Society Annual Meeting; 4 – 8 January 2015; Phoenix, AZ.

Strickler, R., E. A. Ritchie, and K. M. Wood, 2015: Forecast accuracy associated with high impact weather events over the western United States downstream of extratropically transitioning tropical cyclones. Extended abstract presented at: 14th Annual Student Conference, 95th American Meteorological Society Annual Meeting; 4 – 8 January 2015; Phoenix, AZ.

AWARDS

- 2011, 2012 - Graduate College Fellowship recipient for service as Atmospheric Sciences department graduate representative, The University of Arizona
- 2011 - NASA Group Achievement Award for the Genesis and Rapid Intensification Processes (GRIP) airborne earth science mission
- College of Science Galileo Circle Scholarship recipient
- Graduate College Fellowship recipient for academic achievements, The University of Arizona
- 2010 - Atmospheric Sciences Exceptional Scholarship recipient, the University of Arizona
- 2003 – 2007 - Presidential Scholarship recipient, Oregon State University
- University Honors College student, Oregon State University

SERVICE AND AFFILIATIONS

Reviewer, *Journal of Applied Meteorology and Climatology*, *Journal of the Atmospheric Sciences*, *Journal of Operational Meteorology*, *Monthly Weather Review*, *Journal of Climate*

Member, American Meteorological Society. *March 2008 – present.*

Activity co-leader, Department of Geosciences Teacher Symposium, The University of Arizona. *November 2014.*

Judge, EarthWeek 2014 Plenary Session. *April 2014.*

Judge, EarthWeek 2013 Plenary Session. *April 2013.*

Student member, AMS STAC for Tropical Meteorology and Tropical Cyclones. *February 2011 – August 2012.*

Graduate student representative, Department of Atmospheric Sciences, The University of Arizona. *August 2009 – July 2012.*

Vice president, Associate Graduate Council for the College of Science. *September 2011 – May 2012.*

Committee chair, College of Science Graduate Student Awards Ceremony. *January – April 2012.*

Member, Program Committee for the 30th Conference on Hurricanes and Tropical Meteorology. *January – April 2012.*

EarthWeek, annual student-run research conference, the University of Arizona. *Webmaster and Interim Committee Chair* (EarthWeek 2012), *Committee Chair* (EarthWeek 2011), *Member* (EarthWeek 2010).

AIR (Atmospheric and Interdisciplinary Research, formerly GRATIS, affiliated with EarthWeek starting in 2010), annual student-run research conference, the Department of Atmospheric Sciences, the University of Arizona. *Co-Chair* (2010-2012), *Writing Committee Chair* (2009), *Food Committee member* (2008).

Member, American Geophysical Union. *March 2009 – March 2012.*

Volunteer, Hollinger Elementary School. Assisted elementary students with science experiments and discussed the scientific method. *February 2011.*

Member, Society of Physics Students, Oregon State University. *September 2005 – September 2007. (SPS treasurer, September 2006 – June 2007.)*

Volunteer, Discovery Days, Oregon State University. Operated a number of physics demonstrations for elementary and middle school students. *May 2006 and May 2007.*

Volunteer, Oregon Snow Survey, USDA Natural Resources Conservation Service. Assisted data collection, routine maintenance, and equipment installation for snow survey sites in and near the Willowa Mountains of Oregon. *September 2004.*