

## Curriculum Vitae

**A. NAME: Paul E. Roundy**                      **DATE 19-January-2017**

Associate Professor  
DEPARTMENT: Atmospheric and Environmental Sciences  
Office Address: University at Albany DAES-ES 339A

**B. Earned Degrees**

<u>Institution</u>	<u>Specialization</u>	<u>Degree</u>	<u>Date Received</u>
Utah State University	Physics	Bachelor of Science	May 1999
The Pennsylvania State University	Meteorology	PhD	August 2003

**C. All Previous Educational Employment**

Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado, Boulder, postdoctoral research associate, Fall 2003-July 2006.

**E. Scholarly Activity (Bold indicates a student at the time the research was completed)**

**1. Refereed Book Chapters**

Roundy, P.E., **Sakaeda, N., MacRitchie, K., and Gloeckler, L.**, 2016: Weather-climate

Interactions and MJO Influences. *Climate Extremes: Patterns and*

*Mechanisms*, Editors Wang, S., J.H. Yoon, C. Funk, and R

Gillies, AGU Geophysical Monograph Series, John Wiley & Sons Inc., Hoboken, NJ, USA.

Roundy, P.E., 2011: Tropical extratropical interactions, in W.K.M. Lau and D. E.

Waliser, *Intraseasonal Variability in the Atmosphere-Ocean Climate System.*

Second edition. Springer, Praxis Publishing, Chichester, UK.

## 2. Refereed Articles

- Schiraldi, N.**, and P. E. Roundy 2016: The Evolution of Agricultural Drought Transition Periods in the United States Corn Belt. *Mon. Wea. Rev.*, **0**, doi: 10.1175/MWR-D-16-0225.1.
- Sakaeda, N.**, and P. E. Roundy, 2016: Gross Moist Stability and the Madden-Julian Oscillation in Reanalysis Data. *Q. J. Royal Meteorol. Soc.* Accepted.
- MacRitchie, K.** and Roundy, P. E., 2016: The two-way relationship between the Madden-Julian oscillation and anticyclonic wave breaking. *Q.J.R. Meteorol. Soc.*, **142**: 2159–2167. doi:10.1002/qj.2809
- Sakaeda, N.**, and P. E. Roundy, 2016: The Intraseasonal Atmospheric Angular Momentum Associated with MJO Convective Initiations. *Q. J. Royal Meteorol. Soc.* In Press. DOI: 10.1002/qj.2740
- Sakaeda, N.**, and P. E. Roundy, 2016: The Development of Upper-Tropospheric Geopotential Height Anomaly in the Western Hemisphere during MJO Convective Initiations. *Q. J. R. Meteorol. Soc.* 142: 942–956, January 2016 B  
DOI:10.1002/qj.2696
- Sakaeda, N.**, and P. E. Roundy, 2015: The Development of Upper-Tropospheric Wind over the Western Hemisphere in Association with MJO Convective Initiation. *J. Atmos. Sci.*, **72**, 3138-3160.
- Roundy, P. E., 2015: On the Interpretation of EOF Analysis of ENSO, Atmospheric Kelvin Waves, and the MJO. *J. Climate*. **28**, 1148-1165.
- Sakaeda, N.**, and P. E. Roundy, 2015: The Role of Interactions between Multiscale Circulations on the Observed Zonally Averaged Zonal Wind Variability

Associated with the Madden–Julian Oscillation. *J. Atmos. Sci.*, DOI:

<http://dx.doi.org/10.1175/JAS-D-13-0304.1>

Roundy, P. E., 2014a: Regression analysis of zonally narrow components of the Madden–Julian Oscillation. *J. Atmos. Sci.*, DOI: <http://dx.doi.org/10.1175/JAS-D-13-0288.1>

Roundy, P. E., 2014b: Some Aspects of Western Hemisphere Circulation and the Madden–Julian Oscillation. *J. Atmos. Sci.*, **71**, 2027–2039. doi:

<http://dx.doi.org/10.1175/JAS-D-13-0210.1>

Gottschalck, J., P. E. Roundy, C. J. Schreck III, A. Vintzileos, and C. Zhang, 2013: Large-Scale Atmospheric and Oceanic Conditions during the 2011–12 DYNAMO Field Campaign. *Mon. Wea. Rev.*, **141**, 4173–4196.

**Thompson, D. B.**, and P. E. Roundy, 2013: The Relationship between the Madden–Julian Oscillation and U.S. Violent Tornado Outbreaks in the Spring. *Mon. Wea. Rev.*, **141**, 2087–2095.

**Gloeckler, L. C.**, and P. E. Roundy, 2013: Modulation of the Extratropical Circulation by Combined Activity of the Madden–Julian Oscillation and Equatorial Rossby Waves During Boreal Winter. *Mon. Wea. Rev.*, **141**, 1347–1357. doi: <http://dx.doi.org/10.1175/MWR-D-12-00179.1>

Roundy, P. E., 2012a: The Spectrum of Convectively Coupled Kelvin Waves and the Madden–Julian Oscillation in Regions of Low-Level Easterly and Westerly Background Flow. *J. Atmos. Sci.*, **69**, 2107–2111.

Roundy, P. E., 2012b: Observed Structure of Convectively Coupled Waves as a Function of Equivalent Depth: Kelvin Waves and the Madden–Julian Oscillation. *J. Atmos. Sci.*, **69**, 2097–2106.

- MacRitchie, K.**, and P.E. Roundy, 2012: Potential vorticity accumulation following atmospheric Kelvin waves in the active convective region of the MJO. *J. Atmos. Sci.*, **69**, 908–914.
- Roundy, P.E., 2012: Tracking and prediction of large-scale organized tropical convection by spectrally focused two-step space-time EOF analysis. *Q. J. Roy. Meteorol. Soc.*, **138**, 919-931.
- Ventrice, M.J.**, C. D. Thorncroft, and P. E. Roundy, 2011: The Madden-Julian Oscillation's influence on African easterly waves and downstream tropical cyclogenesis. *Mon. Wea. Rev.*, **139**, 2704–2722.
- Roundy, P. E., and **M. A. Janiga**, 2011: Analysis of vertically propagating convectively coupled equatorial waves using observations and a non-hydrostatic Boussinesq model on the equatorial beta plane. *Q. J. Roy. Meteor. Soc.*, **138**, 1004-1017.
- Verhagen, L.**, and P. E. Roundy, 2010: Analysis of coupling between an oceanic Kelvin wave and atmospheric convection during the winter of 1986. *J. Climate*, **23**, 6353-6364.
- Roundy, P. E., and **L. Verhagen**, 2010: Variations of the flow of the global atmosphere associated with a composite convectively coupled oceanic Kelvin wave. *J. Climate*, **23**, 4192-4201.
- Roundy, P. E., **K. MacRitchie**, **J. Asuma**, and **T. Melino**, 2010: Modulation of the Global Atmospheric Circulation by Combined Activity in the Madden Julian Oscillation and the El Niño/Southern Oscillation During Boreal Winter. *J. Climate*, **23**, 4045-4059.

- Lin, Jia-Lin, T. Qian, H. Han, P. Roundy, and Y. Zheng, 2009: Intraseasonal variation of winter precipitation over the western United States simulated by 14 IPCC AR4 Coupled GCMs. *J. Clim.*, **23**, 3094-3119.
- Lin, Jia-Lin, T. Shinoda, B. Liebmann, T. Qian, W. Han, P. Roundy, J. Zhou, Y. Zheng, 2009: Intraseasonal Variability Associated with Summer Precipitation Over South America Simulated by 14 WRCMIP3 Coupled GCMs *Mon. Wea. Rev.*, **137**, 2931-2954.
- Roundy, P. E., and **C. J. Schreck III**, 2009: A combined wave-number-frequency and time-extended EOF approach for tracking the progress of modes of large-scale organized tropical convection. *Q. J. Roy. Met. Soc.*, **135**, 161-173.
- Roundy, P. E., **C. J. Schreck III**, **M. A. Janiga**, 2009: Contributions of convectively coupled equatorial Rossby waves and Kelvin waves to the Real-time multivariate MJO indices. *Mon. Wea. Rev.*, **137**, 469-478.
- Kiladis, G. N., M. C. Wheeler, P. T. Haertel, K. H. Straub, and P. E. Roundy, 2009: Convectively coupled equatorial waves. *Rev. of Geophys.*, **47** RG2003, 1-42.
- Roundy, P. E., and **J. R. Kravitz**, 2009: The association of the evolution of intraseasonal oscillations to ENSO phase. *J. Climate*, **22**, 381-395.
- Shinoda, T., P. E. Roundy, and G. N. Kiladis, 2008: Statistical representation of equatorial waves and tropical instability waves in the Pacific Ocean. *Atmospheric Research*, **94**, 37-44.
- Roundy, P. E., 2008: Analysis of convectively coupled Kelvin waves in the Indian Ocean MJO. *J. Atmos. Sci.* **65**, 1342-1359.
- Shinoda, T., P. E. Roundy, and G. N. Kiladis, 2008: Variability of intraseasonal Kelvin waves in the equatorial Pacific Ocean. *J. Phys. Oceanogr.*, **38**, 921-944.
- Roundy, P. E., and G. N. Kiladis 2007: Analysis of a reconstructed Kelvin wave dynamic height dataset for the period 1974-2005. *J. Climate*, **20**, 4341-4355.
- Roundy P. E., and G. N. Kiladis, 2006: Observed relationships between oceanic Kelvin waves and atmospheric forcing. *J. Climate*, **19**, 5253-5272.
- Frank, W. M., and P. E. Roundy, 2006: The relationship between tropical waves and tropical cyclogenesis. *Mon. Wea. Rev.*, **134**, 2397-2417.

Roundy, P.E., and W.M. Frank, 2004c: Applications of a multiple linear regression model to the analysis of relationships between eastward-and westward-moving intraseasonal modes. *J. Atmos. Sci.*, **61**, 3041-3048.

Roundy, P.E., and W.M. Frank, 2004b: Effects of low-frequency wave interactions on intraseasonal oscillations. *J. Atmos. Sci.*, **61**, 3025-3040.

Roundy P. E., and W. M. Frank, 2004: A climatology of waves in the equatorial region. *J. Atmos. Sci.*, **61**, 2105-2132.

### **3. Selected Conference Reprints and Seminars**

Roundy, P. E., 2009: Modulation of the global response to the Madden Julian Oscillation by the El Niño/Southern Oscillation. IAMAS-IAPSO-IACS Joint Assembly, MOCA-2009, Montreal, Canada, July 19-29.

Roundy, P. E., 2007: The influence of the Madden-Julian Oscillation on the 1982-1983 and 1986-1987 El Niño events. The International Union of Geodesy and Geophysics. 2007, Perugia Italy.

Roundy, P. E., 2007: Roles of the MJO in the development of Oceanic Kelvin waves and ENSO. 19<sup>th</sup> Conference on Climate Variability and Change. American Meteorological Society Annual Meeting.

Roundy, P. E., 2006: The role of equatorial Rossby waves in westerly wind bursts. 26<sup>th</sup> Conference on Hurricanes and Tropical Meteorology, American Meteorological Society.

Roundy, P. E., and G. N. Kiladis, 2005: The nonlinear character of MJO/Oceanic Kelvin wave interactions about the ENSO cycle. 15th Conference on Atmospheric and Oceanic Fluid Dynamics

Frank, W. M. and P. E. Roundy, 2004: Relationships between tropical waves and cyclogenesis. 26<sup>th</sup> Conference on Hurricanes and Tropical Meteorology, American Meteorological Society.

Roundy, P. E., 2004: Kelvin wave amplification facilitated by air-sea interactions during El Niño development. 13th Conference on Interactions of the Sea and Atmosphere. American Meteorological Society

Roundy, P. E., 2001: Tropical precipitable water climatology for equatorial waves. 11<sup>th</sup> Conference on Satellite Meteorology and Oceanography. American Meteorological Society.

#### **4. Book reviews:**

UCAR Online Tropical Textbook, Chapter 5.

#### **6. Computer Software Developed:**

Various systems for statistical prediction of probabilities of extreme weather events are available (or are becoming available) on Dr. Roundy's tropical waves page at <http://www.atmos.albany.edu/facstaff/roundy/waves>

#### **7. Consultancies**

Served as a consultant and advisor for up to 3 energy investment firms 2007-2016. They have asked not to be identified (i.e., no publicity).

#### **8. Grants (In all awards, Paul E. Roundy served as sole PI):**

A small grant from a private energy investment firm (\$2,200) provided graduate assistant support during 2008 for graduate student Joseph R. Kravitz. 01-Aug-2008 to 01-Sep-2008

NSF Award Number 0850642, Analysis of Coupling between Oceanic Kelvin Waves and Atmospheric Convection, and Its Impacts on Weather over the Tropical Pacific, \$353,566. 01-Jun-2009 to 31-May-2013

NSF Award Number 1128779, Analysis of the influence of convectively coupled atmospheric waves and extratropical Rossby waves on the structure and evolution of the observed Madden Julian Oscillation. \$502,671. NSF Program Manager Anjali S. Bamzai. 15-Nov-2011 to 31-Oct-2015

EarthRisk Technologies, \$8,000 to fund summer research work of graduate students Lawrence Gloeckler and Nicholas Schiraldi, 2013. 23-May-2013 to 23-Aug-2013

NSF Award Number 1358214, The Madden Julian Oscillation, Tropical Cyclones, and Extratropical Circulation Responses, \$396,969. NSF Program Manager Anjali S. Bamzai. 01-Apr-2014 to 31-Mar-2017.

NOAA Climate Program Office: Precursor Conditions to Onset and Breakdown of Agricultural Drought over the United States Corn Belt Region. \$225,000. 01-Sep-2014 to 30-Aug-2017

NSF Award Number 1560627, Intraseasonal Extratropical Precursors to the Indian Ocean Madden-Julian Oscillation (MJO) Proximate to Africa, \$486,419.00. 15-Jul-2016 to 30-Jun-2019.

## **F. Teaching**

ATM 521 Tropical Meteorology, Spring 2007

ATM 523 Large-Scale Dynamics of the Tropics, Spring 2009 and 2011, new course

ATM 315 Fall 2007-2011: Quantitative Methods in Geophysics

ENV 315 Fall 2012-2016: Environmental Statistics

ATM 562 Numerical Methods in Atmospheric Science, Spring 2008

ATM561 Applied Data Analysis in Atmospheric and Environmental Sciences, Spring 2010

## **G. Service**

### **Professional Community:**

Program Co-Chair, 2016 AMS Conference on Hurricanes and Tropical Meteorology

Editor, *Monthly Weather Review*, Beginning November 2011

Assessor of the synoptic to planetary scale conditions for “Dynamics of the Madden Julian Oscillation”: Observational experiment over the Indian Ocean during fall 2011

Associate editor for *Monthly Weather Review* 2005-2011

AMS STAC Committee on Hurricanes and Tropical Meteorology, Fall 2009-2014

Program Committee, 28<sup>th</sup> Conference on Hurricanes and Tropical Meteorology, American Meteorological Society, 2007-2008

Weekly participant in the NOAA MJO-GTH (global threats-hazards) conference call for prediction of the status and impacts of global weather and climate hazards in the tropics

Provide daily to weekly assessments of the state of waves in the tropical atmosphere for the DYNAMO project (an observational experiment in the Indian Ocean basin fall 2011)

### **University**

FRAP-A Review Committee, 2014-2015 and 2015-2016

### **College**

Chair, Faculty Development Committee, College of Arts and Sciences, 2012-2013



**Department**

Chair Graduate Recruitment Committee 2015-

Chair of 2020 Initiative Faculty Search Committee for DAES 2013-2014

Member of 2020 Initiative Faculty Search Committee for DAES 2012-2013

Chair of 2020 Initiative Faculty Search Committee for DAES 2011-2012

DAES Tropical Map Discussion Wednesdays

DAES Graduate Committee Fall 2006-present

Participant in the DAES Weather and Climate Blog, Times Union newspaper

**Public**

Organizer of the Capitol Region Math and Science Club for home schooled elementary and middle school aged children

Review Panelist, National Science Foundation and NOAA

**H. Selected Invited Seminars:**

NDA-EarthSat Meeting, October 13, 2016: Towards Understanding Application of the MJO to Subseasonal Weather Prediction

George Mason University and Office of Naval Research, June 2016: MJO Interactions with Subtropics and Mid Latitudes

College of Saint Rose Science Colloquium Series, October 23, 2013: The Relationship between Rainfall in the Tropics and Temperature at Higher Latitudes

MIT Weekly Seminar Series, September 2011, Cambridge Massachusetts

NCAR-ISP African Weather And Climate Colloquium 2011 Seminar Boulder Colorado

NCAR-ISP African Weather And Climate Colloquium 2011 Lead Practicum on Equatorial Wave Modes, Boulder Colorado

Roundy, P. E., 2009: Convectively Coupled Internal Waves of the Free Troposphere. Banff International Research Station, Conference on Multiscale Interactions in the Tropics, April 30.

Stony Brook University February 2008: Relationships between oceanic and atmospheric Kelvin waves, the MJO, and mid latitude weather.

Lamont-Doherty Earth Observatory March 2008: Relationships between oceanic and atmospheric Kelvin waves, the MJO, and mid latitude weather.

Richfield Springs Symposium (high school physics students), 2007: The El Niño/Southern Oscillation.

New York University 2007: Convectively Coupled Kelvin Waves.

NCAR IMAGE Theme of the Year: The role of tropical intraseasonal oscillations in the El Niño/Southern Oscillation, Boulder, Colorado, March 3, 2006.

NCAR/IMAGE Theme of the Year, Interactions between the Madden-Julian Oscillation and equatorial Rossby waves, Boulder, Colorado, October 2005.

### **I. Graduate Students Advised**

Joseph R. Kravitz, (under advisement 2007-2008)

Lynn Gribble Verhagen (MS 2010) (Under advisement 2008-2010)

Kyle MacRitchie (Under Advisement Fall 2009-2014 PhD completed)

Robert M. Setzenfand (*NSF Graduate Research Fellowship Recipient*. Under advisement Fall 2010-present)

Naoko Sakaeda (Under Advisement Fall 2010-PhD Completion 2015)

Lawrence Gloeckler (Under Advisement Fall 2011-present)

Eric Adamchick (MS completed 2015)

Ahmed Lasheen Shabaan (MS completed 2015, PhD began Fall 2016)

Jennifer Gahtan (2013-present, Prospectus Passed 2016)

Ernesto Findlay (2014-present)

Krzyzaniak, Kaitlyn (2016-present)

### **J. Undergraduate Research Advisees**

Lawrence Gloeckler (2010-2011), “The association between the Madden Julian Oscillation, equatorial Rossby waves, and the extratropical circulation”

Nicholas Schiraldi (Beginning Fall 2011)

### **K. Doctoral Committee Service**

Carl Schreck (PhD completed 2010)

Kay Shelton (PhD completed 2011)

Michael J. Ventrice (2010-2011, Completed 2014)

Victor Torres (2014-present)

**L. Service as Master's Thesis Second Reader**

Timothy Melino (2010)

Dana K. McGlone (2011)

Juan Sulca (2015)

**M. Educational Training Activities**

UAlbany Faculty Fall Retreat (ITLAL) 2009, 2010, 2011, 2012, 2013, 2014, 2015

Various ITLAL training activities, especially 2008, 2009, and 2010