Robert Fulton Rogers

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SUMMARY:
Dr. Rogers is an employee of NOAA's Hurricane Research Division in Miami, FL. His main areas of research involve studying the role of convective- and vortex-scale processes in tropical cyclone (TC) structure and intensity change, using a combination of aircraft observations and numerical models.

PROFESSIONAL PREPARATION:

The Pennsylvania State University	Meteorology	Ph.D., 1998
The Pennsylvania State University	Meteorology	M.S., 1995
University of Virginia	Environmental Sciences	B.A., 1991

APPOINTMENTS:
2003-current: Meteorologist, NOAA/AOML Hurricane Research Division, Miami, FL

2000-2003: Assistant Scientist, Cooperative Institute for Marine and Atmospheric Studies, University of Miami, Miami, FL

1998-2000: National Research Council Postdoctoral Research Associate, Hurricane Research Division, Miami, FL

PUBLICATIONS:

1. **Rogers, R.F.**, P.D. Reasor, and J.A. Zhang, 2017: Reply to Comments on "Multiscale Structure and Evolution of Hurricane Earl (2010) during Rapid Intensification". Mon. Wea. Rev., in press.
2. **Rogers, R.F**., S.Aberson, M.M. Bell, D.Cecil, J. Doyle, T. Kimberlain, J. Morgerman, L.K. Shay, and C. Velden, 2017: Re-Writing the tropical record books: The extraordinary intensity changes of Hurricane Patricia (2015). *Bull. Amer. Meteor. Soc*., in press.
3. Zhang, J.A., **R.F. Rogers**, and V. Tallapragada, 2017: Impact of Parameterized Boundary Layer Structure on Tropical Cyclone Rapid Intensification Forecasts in HWRF. *Mon. Wea. Rev*., **145**, 1413–1426, doi: 10.1175/MWR-D-16-0129.1.
4. Hazelton, A.T., **R.F. Rogers**, and R.E. Hart, 2017: Analyzing simulated convective bursts in two Atlantic hurricanes. Part I: Convective burst formation and development. *Mon. Wea. Rev*., in press.
5. Hazelton, A.T., R.E. Hart, and **R.F. Rogers**, 2017: Analyzing simulated convective bursts in two Atlantic hurricanes. Part II: Intensity change due to convective bursts. *Mon. Wea. Rev*., in press.

6. Doyle, J.D.,J. Moskaitis, J. Feldmeier, R. Ferek, M. Beaubien, M. Bell, D. Cecil, R. Creasey, P. Duran, R. Elsberry, W. Komaromi, J. Molinari, D. Ryglicki, D. Stern, X. Wang, C. Velden, B. Barrett, T. Allen, P. Black, K. Emanuel, J. Dunion, E. Hendricks, P. Harr, L. Harrison, D. Herndon, W. Jeffries, S. Majumdar, J. Moore, Z. Pu, **R.F. Rogers**, E. Sanabia, G. Tripoli, D.-L. Zhang, 2017: A View of Tropical Cyclones from Above: The TCI Experiment. *Bull. Amer. Meteor. Soc*., in press.
7. Zhang, J.A., F.D. Marks, Jr., J.A. Sippel, X. Zhang, S.G. Gopalakrishnan, **R.F. Rogers**, and Z. Zhang, 2017: Improving hurricane model physics using aircraft observations: Horizontal diffusion parameterization in HWRF. *Wea. Forecast*., in review.
8. Chen, H., S.Gopalakrishnan, J.A. Zhang, **R.F. Rogers**, Z. Zhang, and V. Tallapragada, 2017: Use of HWRF ensembles for providing improved understanding of hurricane RI problem: Case study of Hurricane Edouard (2014). *J. Atmos. Sci*., in review.
9. Martinez, J., M.M. Bell, J.L. Vigh, and **R.F. Rogers**, 2017: Examination of tropical cyclone structure and intensification with the Extended Flight Level Dataset (FLIGHT+) from 1999 to 2012. *Mon. Wea. Rev*., manuscript in review.
10. Nguyen, L.T., **R.F. Rogers**, and P.D. Reasor, 2017: Thermodynamic and kinematic influences on precipitation symmetry in sheared tropical cyclones: Bertha and Cristobal (2014). *Mon. Wea. Rev*., in review.
11. Wadler, J., **R.F. Rogers**, and P.D. Reasor, 2017: Radial and azimuthal variations in convective burst structure in tropical cyclones from airborne Doppler observations. *Mon. Wea. Rev*., manuscript in review.
12. **Rogers, R.F.,** J.A. Zhang, J. Zawislak, H. Jiang, G.R. Alvey III, E.J. Zipser, and S.N. Stevenson, 2016: Observations of the structure and evolution of Hurricane Edouard (2014) during intensity change. Part II: Kinematic structure and the distribution of deep convection. *Mon. Wea. Rev.*, 144, 3355-3376.
13. Zawislak, J., H. Jiang, G.R. Alvey III, E.J. Zipser, **R.F. Rogers**, J.A. Zhang, and S.N. Stevenson, 2016: Observations of the structure and evolution of Hurricane Edouard (2014) during intensity change. Part I: Relationship between the thermodynamic structure and precipitation. *Mon. Wea. Rev*., 144, 3333-3354.
14. Zhang, J.A., D.S. Nolan, **R.F. Rogers**, and V. Tallapragada, 2015: Evaluating the Impact of Improvements in the Boundary Layer Parameterization on Hurricane Intensity and Structure Forecasts in HWRF. *Mon. Wea. Rev*., **143**, 3136-3155.
15. Ming, J., J.A. Zhang, and **R.F. Rogers**, 2015: Typhoon boundary layer structure from dropsonde composites. *J. Geophys. Res*., **120**(8):3158-3172, doi:10.1002/2014JD022640.
16. Susca-Lopata, G., J. Zawislak, E.J. Zipser, and **R.F. Rogers**, 2015: The role of observed environmental conditions and precipitation evolution in the rapid intensification of Hurricane Earl (2010). *Mon. Wea. Rev*., **143**, 2207-2223.
17. Hazelton, A., **R.F. Rogers**, and R.Hart, 2015: Shear-Relative Asymmetries in Tropical Cyclone Eyewall Slope. *Mon. Wea. Rev*., **143**, 883-903.
18. **Rogers, R.F**., P.D. Reasor, and J.A. Zhang, 2015: Multiscale structure and evolution of Hurricane Earl (2010) during rapid intensification. *Mon. Wea. Rev*., **143**, 536-562.
19. Ming, J., J. A. Zhang, **R.F. Rogers**, F. D. Marks, Y. Wang, and N. Cai, 2014: Multiplatform observations of boundary layer structure in the outer rainbands of

landfalling typhoons. *J. Geophys. Res. – Atmos.*, **119**, 7799-7814, doi: 10.1002/2014JD021637.

20. DeHart, J.C., R.A. Houze, Jr., and **R.F. Rogers**, 2014: Quadrant distribution of tropical cyclone inner-core kinematics in relation to environmental shear. *J. Atmos Sci*., **71**, 2713-2732.
21. Uhlhorn, E.W., B. Klotz, T. Vukicevic, P. Reasor, and **R.F. Rogers**, 2014: Observed hurricane wind speed asymmetries and relationships to motion and environmental shear. *Mon. Wea. Rev.*, **142**, 1290-1311.
22. **Rogers, R.F.,** P. Reasor, and S. Lorsolo, 2013: Airborne Doppler Observations of the Inner-core Structural Differences between Intensifying and Steady-State Tropical Cyclones. *Mon. Wea. Rev*., **141**, 2970-2991.
23. **Rogers, R**.**F**., S.Aberson, A. Aksoy, B. Annane, M. Black, J. Cione, N. Dorst, J. Dunion, J. Gamache, S. Goldenberg, S. Gopalakrishnan, J. Kaplan, B. Klotz, S. Lorsolo, F. Marks, S. Murillo, M. Powell, P. Reasor, K. Sellwood, E. Uhlhorn, T. Vukicevic, J. Zhang, and X. Zhang, 2013: NOAA'S Hurricane Intensity Forecasting Experiment: A Progress Report. *Bull. Amer. Meteor. Soc*., **94**, 859–882.
24. Reasor, P., **R.F. Rogers**, and S. Lorsolo, 2013: Environmental flow impacts on tropical cyclone structure diagnosed from airborne Doppler radar composites. *Mon. Wea. Rev*., **141**, 2949-2969.
25. Zhang, J. A., S. G. Gopalakrishnan, F. D. Marks, **R. F. Rogers**, and V. Tallapragada, 2013: A Developmental Framework for Improving Hurricane Model Physical Parameterizations Using Aircraft Observations. *Trop. Cycl. Res. Rev*, **1(4)**, 419-429.
26. Elsberry, R.L., L. Chen, J. Davidson, **R.F. Rogers**, Y. Wang, and L. Wu, 2013: Advances In Understanding And Forecasting Rapidly Changing Phenomena In Tropical Cyclones. *Trop. Cyc. Res. Rev*., **2(1)**, 13-24.
27. Zhang, J.A., **R.F. Rogers**, P. Reasor, E. Uhlhorn, and F.D. Marks, Jr., 2013: Asymmetric hurricane boundary layer structure from dropsonde composites in relation to the environmental wind shear. *Mon. Wea. Rev*., **141**, 3968–3984.
28. **Rogers, R.F.,** S. Lorsolo, P. Reasor, J. Gamache, F.D. Marks, Jr., 2012: Multiscale analysis of tropical cyclone kinematic structure from airborne Doppler radar composites. *Monthly Weather Review*, **140**, 77-99.
29. Zhang, J.A., **R.F. Rogers**, D.S. Nolan, and F.D. Marks, Jr., 2011: On the characteristic height scales of the hurricane boundary layer. *Monthly Weather Review*, **139**, 2523-2535.
30. Zhang, J.A., P. Zhu, F. Masters, **R.F. Rogers**, and F.D. Marks, Jr., 2011: On momentum transport and dissipative heating during hurricane landfalls. *Journal of Atmospheric Sciences*, **68**, 1397-1404.
31. Yeh, K.-S., X. Zhang, S. Gopalakrishnan, S. Aberson and **R.F. Rogers**, 2011: The AOML/ESRL Hurricane Research System: Performance in the 2008 Hurricane Season. *Natural Hazards*, DOI:10.1007/s11069-011-9787-7.
32. **Rogers, R.F**., 2010: Convective-scale structure and evolution during a high-resolution simulation of tropical cyclone rapid intensification. *Journal of the Atmospheric Sciences*, **67**, 44–70.
33. Fierro, A.O., **R.F. Rogers**, F.D. Marks, and D.S. Nolan, 2009: The Impact of Horizontal Grid Spacing on the Microphysical and Kinematic Structures of Strong Tropical Cyclones Simulated with the WRF-ARW Model. *Monthly Weather Review*, **137**, 3717–3743.
34. **Rogers, R.F.**, F.D. Marks, Jr., and T. Marchok, 2009: Tropical Cyclone Rainfall. In Malcolm G. Anderson (Ed.) *Encyclopedia of Hydrological Sciences*. Chichester, UK:

John Wiley & Sons, Ltd. DOI 10.1002/0470848944.hsa030

35. **Rogers R.F.,** and E. Uhlhorn, 2008: Observations of the structure and evolution of surface and flight-level wind asymmetries in Hurricane Rita (2005). *Geophysical Research Letters*, **35**, L22811, doi:10.1029/2008GL034774.
36. **Rogers, R.F**., M.L. Black, S.S. Chen, and R.A. Black, 2007: An Evaluation of Microphysics Fields from Mesoscale Model Simulations of Tropical Cyclones. Part I: Comparisons with Observations. *Journal of the Atmospheric Sciences*, **64**, 1811-1834.
37. Lonfat, M., **R. F. Rogers**, F. D.Marks, Jr., and T. Marchok, 2007: A Parametric Model for Predicting Hurricane Rainfall. *Monthly Weather Review*, **135**, 3086-3097.
38. Marchok, T., **R. F. Rogers**, and R. Tuleya, 2007: Validation Schemes for Tropical Cyclone Quantitative Precipitation Forecasts: Evaluation of Operational Models for U.S. Landfalling Cases. *Weather and Forecasting,* **22**, 726-746.
39. Halverson, J., M. Black, S. Braun, D. Cecil, M. Goodman, G. Heymsfield, R. Hood, J. Molinari, **R.F. Rogers**, C. Velden, E. Zipser, R. Kakar, 2007: NASA's Tropical Cloud Systems and Processes (TCSP) Experiment: Investigating the Genesis and Intensification of Hurricanes, *Bulletin of the American Meteorological Society*, **88**, 867-882.
40. **Rogers, R.F**., S.D. Aberson, M.L. Black, P. Black, J. Cione, P. Dodge, J. Dunion, J. Gamache, J. Kaplan, M. Powell, N. Shay, N. Surgi, and E. Uhlhorn, 2006: The Intensity Forecasting Experiment (IFEX): A NOAA Multi-year Field Program for Improving Tropical Cyclone Intensity Forecasts. *Bulletin of the American Meteorological Society*, **87**, 1523-1537.
41. Houze, R.A.,Jr ., S.S. Chen , W.-C. Lee , **R. F. Rogers**, J. A. Moore, G. J. Stossmeister, J.L. Cetrone, W, Zhao, and M. M. Bell, 2006: The Hurricane Rainband and Intensity Change Experiment (RAINEX): Observations and modeling of Hurricanes Katrina, Ophelia, and Rita (2005) *Bulletin of the American Meteorological Society*, **87**, 1503-1521.
42. Nuissier, O., **R.F. Rogers**, and F. Roux, 2005: Numerical simulation of tropical cyclones. Hurricane Bret on 22-23 August 1999. *Quarterly Journal of the Royal Meteorological Society*, **131**, 155-194.
43. **Rogers, R.F.**, S.S. Chen, J.E. Tenerelli, and H.E. Willoughby, 2003: A numerical study of the impact of vertical shear on the distribution of rainfall in Hurricane Bonnie (1998). *Monthly Weather Review*, **131**, 1577-1599.
44. **Rogers, R.F.**, S. Aberson, J. Kaplan, and S. Goldenberg, 2002: A pronounced upper-tropospheric warm anomaly encountered by the NOAA G-IV aircraft in the vicinity of deep convection. *Monthly Weather Review*, **130**, 180-187.
45. **Rogers, R.F.**, and J.M. Fritsch, 2001: Surface cyclogenesis from convectively-driven amplification of mid-level mesoscale convective vortices. *Monthly Weather Review*,**129**, 605-637.
46. **Rogers, R.F.**, J.M. Fritsch, and W.C. Lambert, 2000: A simple technique for using radar data in the dynamic initialization of a mesoscale model. *Monthly Weather Review,* **128**, 2560-2574.
47. **Rogers, R.F.**, and J.M. Fritsch, 1996: A general framework for convective trigger functions. *Monthly Weather Review*, **124**, 2438-2452.

48. **Rogers, R.F.**, and R.E. Davis, 1993: The effect of coastline curvature on the weakening of Atlantic tropical cyclones. *International Journal of Climatology*, **13**, 287-299.
49. Davis, R.E., and **R.F. Rogers**, 1992: A synoptic climatology of severe storms in Virginia. *The Professional Geographer*, **44**, 319-332.

PRESENTATIONS DURING LAST TEN YEARS:

Invited

1. **Rogers, R.F.,** J. Zawislak, and L. Nguyen, 2017: Precipitation Structure Upshear and Its Role in Tropical Cyclone Intensification. Talk presented to the Central Pacific Hurricane Center, Honolulu, HI, May 2017.
2. **Rogers, R.F.**, 2016: Deep convection and tropical cyclone intensification. Invited Speaker, 2nd U.S./Taiwan Workshop on Extreme Precipitation, Honolulu, HI, September 2016.
3. **Rogers, R.F.,** 2016: Deep convection and tropical cyclone intensification. Invited Speaker, JPL Technical Interchange Meeting on Hurricanes and the TCIS, Pasadena, CA, June 2016.
4. **Rogers, R.F.,** 2016: Deep convection and tropical cyclone intensification. Invited Speaker, National Hurricane Center, April 2016.
5. **Rogers, R.F.**, 2016: NOAA's Hurricane Research Division: Advancing Tropical Cyclone Research and Prediction Using Aircraft Observations. National Hurricane Conference, Orlando, FL, March 2016.
6. **Rogers, R.F.**, 2016: NOAA's Hurricane Research Division: Advancing Tropical Cyclone Research and Prediction Using Aircraft Observations. Seminar presented at Florida State University, Tallahassee, FL, March 2016.
7. **Rogers, R.F.,** 2015: Summary of IWTC-VIII and IWTCLP-III. Invited Speaker, WMO RSMC meeting at National Hurricane Center, November 2015.
8. **Rogers, R.F.**, 2015: Hurricane Observations. Presented at AOML as part of "Bite-size Science" series, Miami, FL, November 2015.
9. **Rogers, R.F.,** J.A. Zhang, and J. Zawislak, 2015: The distribution of deep convection in tropical cyclones and its role in intensification. Invited Speaker, Nanjing University, Nanjing, China, October 2015.
10. **Rogers, R.F.,** J.A. Zhang, and J. Zawislak, 2015: The distribution of deep convection in tropical cyclones and its role in intensification. Invited Speaker, Shanghai Typhoon Institute, Shanghai, China, October 2015.
11. **Rogers, R.F.,** 2015: NOAA Hurricane Research. Invited Speaker, NESDIS meeting at AOML, Miami, FL, September 2015.
12. **Rogers, R.F.,** 2015: Modeling, Observations, and DA for High Resolution Hurricane Predictions. Invited Speaker, High Impact Weather Prediction Project (HIWPP) Science Meeting, Miami, FL, April 2015.
13. **Rogers, R.F.**, 2015: NOAA's Intensity Forecasting Experiment (IFEX). Invited Speaker, ONR Tropical Cyclone Intensity (TCI) planning meeting, Monterey, CA, April 2015.

14. **Rogers, R.F**., 2014: The inner-core structure of rapidly intensifying tropical cyclones. Invited Speaker, Shanghai Typhoon Institute, Shanghai, China, December 2014.
15. **Rogers, R**.**F**., 2014: NOAA's Hurricane Research – HFIP. Invited Speaker, Shanghai Typhoon Institute, Shanghai, China, December 2014.
16. **Rogers, R**.**F**., 2014: What is the role of deep convection in tropical cyclone rapid intensification? Invited Speaker, Florida International University, October 2014.
17. **Rogers, R**.**F**., P. Reasor, J. Zhang, and S. Guimond, 2014: Aircraft Observations of the Multiscale Structure and Evolution of Rapidly Intensifying Tropical Cyclones. Invited Speaker, International workshop on UPDRAFT research project, Nanjing University, Nanjing, China, May 2014.
18. **Rogers, R.F.**, P. Reasor, and S. Lorsolo, 2013: Inner-core Structural Differences Of Intensifying And Steady-state Tropical Cyclones. Invited Speaker, International Top-level Forum on Rapid Change Phenomena in Tropical Cyclones, Haikou, China, 5-9 November 2012.
19. **Rogers, R**.**F.,** 2010: Inner-core characteristics of rapidly-intensifying Atlantic tropical cyclones. Invited Speaker, National Taiwan University, Taipei, Taiwan, April 2010.
20. **Rogers, R.F**., 2009: Research Needs and Opportunities for Improved Forecasting of U.S. Landfalling Tropical Cyclones. Invited Speaker, Second International Workshop on Tropical Cyclones – Landfall Processes, Shanghai, China, October 2009.
21. **Rogers, R**.**F**., 2009: Landfalling Tropical Cyclones: Forecasting System of the Future. Invited Speaker, Second International Workshop on Tropical Cyclones – Landfall Processes, Shanghai, China, October 2009.

<u>Contributed</u>

1. **Rogers, R.F.,** J. Zawislak, and L. Nguyen, 2017: Precipitation Structure Upshear and Its Role in Tropical Cyclone Intensification. Talk presented at the Tropical Cyclone Operations and Research Forum/71st Interdepartmental Hurricane Conference, Miami, FL, March 2017.
2. **Rogers, R.F.,** and J. Zawislak, 2017: Precipitation Structure Upshear and Its Role in Tropical Cyclone Intensification. Poster presented at the 97th Annual American Meteorological Society Meeting, Seattle, WA, January 2017.
3. Nguyen, L**., R.F. Rogers**, and P.D. Reasor, 2017: Thermodynamic and Kinematic Influences on Precipitation Symmetry in Sheared Tropical Cyclones: Bertha and Cristobal (2014). Poster presented at the 97th Annual American Meteorological Society Meeting, Seattle, WA, January 2017.
4. **Rogers, R.F**., S.Aberson, M.M. Bell, D.Cecil, J. Doyle, T. Kimberlain, J. Morgerman, L.K. Shay, and C. Velden, 2016: Re-Writing the tropical record books: The extraordinary intensity changes of Hurricane Patricia (2015). Presented at National Hurricane Center during HRD Science Meeting, December 2016.
5. Kalina, E.A., S. Y. Matrosov, F. D. Marks Jr., J. J. Cione, D. E. Kingsmill, M. M. Bell, R. A. Black, J. C. Hubbert, W. C. Lee, J. Vivekanandan, P. P. Dodge, and **R. F. Rogers**, 2016: The fall speeds and ice water paths of small and large ice species in Hurricane

Arthur (2014). AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.

6. **Rogers**, **R.F**., J. A. Zhang, J. Zawislak, G. R. Alvey III, E. J. Zipser, and H. Jiang, 2016: Observations of the structure and evolution of Hurricane Edouard (2014) during intensity change: Kinematic structure and the distribution of deep convection. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
7. Zawislak, J., G. R. Alvey III, **R. F. Rogers**, J. A. Zhang, E. J. Zipser, and H. Jiang, 2016: Observations of the structure and evolution of Hurricane Edouard (2014) during intensity change: Relationship between the thermodynamic structure and precipitation. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
8. Bell, M.M., J. Martinez, J. D. Doyle, and **R. F. Rogers**, 2016: Inner Core Structure of Hurricane Patricia Observed During TCI-2015. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
9. Zhang, J.A., **R. F. Rogers**, V. Tallapragada, and W. Wang, 2016: Effects of boundary layer vertical diffusion on forecasts of tropical cyclone rapid intensification. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
10. Chen, H., R. F. Rogers and S. Gopalakrishnan, 2016: Ensemble Forecast of Hurricane Edouard (2014). AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
11. Ming, J., J. A. Zhang and **R. F. Rogers**, 2016: Typhoon Kinematic and Thermodynamic Boundary Layer Structure from Dropsonde Composites. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
12. Wadler, J. and **R. F. Rogers**, 2016: Radial and Azimuthal Variations in Convective Burst Structure in Tropical Cyclones from Airborne Doppler Observations. AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, April 2016.
13. **Rogers, R.F.,** F.D. Marks, Jr., S.D. Aberson, J. Cione, and J. Gamache, 2016: Intensity Forecasting Experiment: AOC Stakeholders' Workshop. Tampa, FL, March 2016.
14. **Rogers, R.F**., F.D. Marks, Jr., and J.J. Cione, 2016: Research Opportunities for Operational Airborne Fleet in 2030. Presentation at TCORF2016 Meeting. Miami, FL, March 2016.
15. **Rogers, R.F.,** J.A. Zhang, J. Zawislak, and E. Uhlhorn, 2015: Multiscale kinematic structure and evolution of Hurricane Edouard from 14-16 September using Global Hawk dropsondes and P-3 airborne Doppler radar. Talk presented at NASA HS3 science meeting, Mountain View, CA, May 2015.
16. **Rogers, R.F.**, 2015: NOAA's Intensity Forecasting Experiment (IFEX). Talk presented at NOAA Interdepartmental Hurricane Conference, Jacksonville, FL, March 2015.
17. **Rogers, R.F.**, P. Reasor, and J. Zhang, 2014: Multiscale structure and evolution of Earl (2010) during rapid intensification. Talk presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.
18. Zhang, J.A., **R.F. Rogers**, P. Reasor, E. Uhlhorn, and F. Marks, 2014: Dropsonde composites of asymmetric hurricane boundary layer structure in relation to environmental

vertical wind shear. Talk presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.

19. Hazelton, A.T., **R. F. Rogers** and R. E. Hart, 2014: Analysis of Shear-Relative Asymmetries in Tropical Cyclone Eyewall Slope Using Airborne Doppler Radar Data. Talk presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.
20. Susca-Lopata, G., E. Zipser and **R. F. Rogers**, 2014: Evaluating Different Convective Indicators of Tropical Cyclone Rapid Intensification: The Case of Hurricane Earl (2010). Talk presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.
21. DeHart, J.C., R. A. Houze Jr. and **R. F. Rogers**, 2014: Quadrant distribution of tropical cyclone inner-core kinematics in relation to environmental shear. Talk presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.
22. Uhlhorn, E.W., B. W. Klotz, T. Vukicevic, P. Reasor, and **R. F. Rogers**, 2014: Observed Hurricane Wind Speed Asymmetries and Relationships to Motion and Environmental Shear. Poster presented at 31st AMS conference on Hurricanes and Tropical Meteorology, San Diego, CA, March 2014.
23. **Rogers**, **R.F**., P. Reasor, J. Zhang, and S. Guimond, 2014: Aircraft observations of the multiscale structure and evolution of rapidly intensifying tropical cyclones. Talk presented at NASA HS3 Science Team Meeting, NASA Ames Research Park, Mountain View, CA, May 2014.
24. **Rogers, R.F.**, H. Chen, P.D. Reasor, J. Zhang, and S. Gopalakrishnan, 2014: Convective and vortex-scale interactions during the rapid intensification of Hurricane Earl (2010). Talk presented at World Weather Open Science Conference, Montreal, Quebec, Canada, August 2014.
25. **Rogers, R.F**., 2014: Using observations and models to better understand and predict hurricanes. Talk given as part of AOML Lab Review, February 2014.
26. **Rogers**, **R.F**., P. Reasor, Gopal, H. Chen, 2013: TC inner-core structure and intensification. Talk presented at NASA HS3 Science Team Meeting, NASA Ames Research Park, Mountain View, CA, May 7-9, 2013.
27. **Rogers, R.F.**, 2012: Advancing NOAA's Hurricane Mission with HRD Science. Talk presented to NOAA Senior Research Council, AOML, Miami, FL, October 9, 2012.
28. **Rogers, R.F.**, P. Reasor, S. Lorsolo, and J. Zhang, 2012: Observations of the Inner-Core Structure of Rapidly Intensifying Tropical Cyclones. Talk presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
29. Zhang, J.A., **R. F. Rogers**, P. D. Reasor, J. J. Cione, and E. W. Uhlhorn, 2012: On the low-level inner-core structure in relation to the environmental vertical wind shear. Poster presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
30. **Rogers, R.F.**, P. Reasor, S. Lorsolo, and J. Zhang, 2012: Observations of the Inner-Core Structure of Rapidly Intensifying Tropical Cyclones. Talk presented at NASA HS3 Science Team Meeting, Wallops Flight Facility, VA, May 7-8, 2012.

31. Reasor, P.D., **R. F. Rogers** and S. Lorsolo, 2012: Environmental impacts on tropical cyclone structure and intensity diagnosed from airborne Doppler radar composites. Talk presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
32. Lorsolo, S., **R.F. Rogers** and P. Reasor, 2012: Analysis of the hurricane boundary layer kinematic structure using Doppler radar profiles. Talk presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
33. Zipser, E., A. Heymsfield, G. Heymsfield, **R.F. Rogers**, and S. Braun, 2012: Microphysics data obtained by the DC-8 during GRIP in relation to near-coincident radar profiles of deep convection. Talk presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
34. **R.F. Rogers**, 2012: NOAA's Intensity Forecasting Experiment: Ongoing Work and 2010 Summary. Talk presented at 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, April 16-20, 2012.
35. **R.F. Rogers**, 2012: NOAA's Intensity Forecasting Experiment. Talk presented at NASA GRIP Science Team Meeting, Wallops Flight Facility, VA, May 9-10, 2012.
36. **Rogers, R.F**., P. Reasor, S. Lorsolo, and J.Zhang, 2011: Inner-core diagnostics of HWRFx. Talk presented at NOAA Interdepartmental Hurricane Conference, Miami, FL, February 28-March 3, 2011.
37. Zhang, J.A., **R.F. Rogers**, D. Nolan, and F. Marks, 2011: On the Characteristic Height Scales of the Hurricane Boundary Layer: Dropsonde Composite Analysis for the Purpose of Model Diagnostics. Talk presented at NOAA Interdepartmental Hurricane Conference, Miami, FL, February 28-March 3, 2011.
38. **Rogers, R.F**., 2011: Observations of hurricanes for improving numerical models. Talk given at Annual WRF-for-Hurricane Tutorial, Boulder, CO, April 26-29, 2011.
39. **Rogers, R.F**., 2011: Hurricane model diagnostics using aircraft observations. Presentation at NOAA National Hurricane Center, CHART Seminar Series, July 25, 2011.
40. **Rogers, R.F**., P.D. Reasor, S. Lorsolo, and J.A. Zhang, 2011: Vortex- and convective-scale structure and evolution during the rapid intensification of Hurricane Earl (2010). Poster presented at NASA GRIP Science Meeting, Los Angeles, CA, June 2011.
41. **Rogers, R**.**F**., 2010: Structure and Intensity Change: Future Directions. Topic Chair Report provided to Seventh International Workshop on Tropical Cyclones, La Reunion, France, December 2010.
42. **Rogers, R.F**., 2010: Inner-core characteristics of rapidly-intensifying Atlantic tropical cyclones. Seminar presented at National Taiwan University, Taipei, Taiwan, March 24, 2010.
43. **Rogers, R.F**., S. Lorsolo, P. Reasor, J. Gamache, and F. Marks, 2010: Multiscale observations of tropical cyclone structure using airborne Doppler composites. Talk at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.

44. Gopalakrishnan, S.G., X. Zhang, T. Quirino, **R.F. Rogers**, K. Yeh, F. Marks, and R. Atlas, 2010: The HWRFX Modeling System: Recent Developments in Hurricane Structure and Intensity Forecasting Research in NOAA. Talk at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
45. Murillo, S.T., B. Annane and **R. F. Rogers**, 2010: Evaluation of GFDL wind field structure during rapid intensification TC cases using H*Wind. Talk at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
46. Zhang, X., S. G. Gopalakrishnan, K. Yeh, **R. F. Rogers**, S. D. Aberson, F. D. Marks Jr., and T. Quirino, 2010: The HWRFx Modeling System: The High Resolution Hurricane Forecast Test. Talk at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
47. Hinson, T.S., F. Zhang, Y. Weng, J. Wei, and **R. F. Rogers**, 2010: Predictability and Dynamics of a Vertically-Sheared Tropical Storm. Talk at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
48. Zhang, J., A. Aksoy, S. Lorsolo, **R.F. Rogers**, E.Uhlhorn, J.Cione, J. Dunion, J. Kaplan, X. Zhang, S. Gopalakrishnan, T. Quirino, J. Cangialosi, and F. Marks, 2010: A numerical study of the evolution of the surface layer during the rapid intensification of Hurricane Bill (2009). Poster at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
49. Kaplan, J., J. Zhang, S. Aberson, M.L. Black, E. Uhlhorn, J. Dunion, A. Aksoy, and **R.F. Rogers**, 2010: A multi-scale analysis of the rapid intensification of Hurricane Paloma (2008). Poster at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14.
50. **Rogers, R.F**., S.S. Chen, A. Heymsfield, and G. Heymsfield, 2008: Precipitation Morphology and Vortex Evolution During the Rapid Intensification of Hurricane Dennis (2005). Presented at the Annual Fall Meeting of the American Geophysical Union, December 10-14 2007, San Francisco, CA.
51. **Rogers, R.F**., F.D. Marks, Jr., K. Valde, and A. Hagen, 2008: Tropical Cyclone Precipitation Structures Derived from Reflectivity Statistics Using TRMM PR. Presented at 10th Annual TRMM workshop, February 4-8 2008, Las Vegas, NV.
52. **Rogers, R.F**., S.S. Chen, A. Heymsfield, and G. Heymsfield, 2008: Precipitation Morphology and Vortex Evolution During the Rapid Intensification of Hurricane Dennis (2005). Presented at the 28th Annual AMS Conference on Hurricanes and Tropical Meteorology, April 28-May 2 2008, Orlando, FL.
53. **Rogers, R.F**., E. Uhlhorn, and M. Bell, 2008: Observations of the structure and evolution of wind asymmetries in Hurricane Rita (2005). Poster presented at the 28th Annual AMS Conference on Hurricanes and Tropical Meteorology, April 28-May 2 2008, Orlando, FL.
54. **Rogers, R.F**., and S.G. Gopalakrishnan, 2008: The impact of horizontal resolution on the structure and intensity of Hurricane Dennis in HWRF simulations. Presented at the 62nd Annual Interdeparmental Hurricane Conference, March 3-7 2008, Charleston, SC.
55. **Rogers, R**.**F**., 2008: Evaluating Numerical Models to Improve the Prediction of Tropical Cyclone Intensity. Talk given as part of AOML Lab Review, March 2008.

56. **Rogers, R.F**., M. Black. S.S. Chen, and G. Heymsfield, 2006: Statistical Evaluations of Microphysics Fields From Observations and Simulations of Tropical Cyclones. Presented at AGU Conference, December 2006, San Francisco, CA.
57. **Rogers, R.F**., 2007: Observations and simulations of the evolution of precipitation morphology over the lifecycle of Hurricane Dennis (2005). Informal Research Report presented at AOML, May 2007.
58. **Rogers, R.F**., M. Black. S.S. Chen, G. Heymsfield, and A. Heymsfield, 2007: Observations and simulations of the evolution of precipitation morphology over the lifecycle of Hurricane Dennis (2005). Presented at NASA TCSP/NAMMA Science Team Meeting, May 2007, Baltimore, MD.
59. **Rogers, R.F**., and E. Uhlhorn, 2007: Observations of the evolution of azimuthal asymmetries in Hurricane Rita (2005). Talk given at RAINEX workshop, February 2007, Boulder, CO.
60. **Rogers, R**.**F**., 2007: Intensity Forecasting Experiment (IFEX): Improving Hurricane Intensity Forecasts using Airborne Reconnaissance. Presentation to Congressional Staffers, May 2007.
61. **Rogers, R.F**., F. Marks, M. Black, K. Valde, and S, Chen, 2005: Tropical Cyclone Structure and Rainfall as Deduced by TRMM, Airborne radar, and a High-resolution Numerical Model. Presented at NASA PMM Science Team Meeting, December 2005, Monterey, CA.
62. **Rogers, R.F**., S. Chen, A. Heymsfield, and G. Heymsfield, 2006: Evaluating and Improving Microphysical Parameterizations For Hurricane Lifecycle Studies. Presented at NASA TCSP Science Team Meeting, April 2006, Huntsville, AL.
63. **Rogers, R.F**., M. Black, P. Willis, R. Black, A. Heymsfield, A. Bansemer, and G. Heymsfield, 2006: An Evaluation of the Microphysics Fields of Hurricane Dennis (2005) at Different Stages of Its Lifecycle. 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 4B.7.
64. **Rogers, R.F**.., F. Marks, M. Black, K. Valde, and S, Chen, 2005: A comparison of tropical cyclone hydrometeor profiles from TRMM, airborne radar, and high-resolution simulations of tropical cyclones. 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, P5.19.
65. Marchok, T., **R.F. Rogers**, and R.Tuleya, 2006: Improving the validation and prediction of tropical cyclone rainfall. Talk given at 60th Interdepartmental Hurricane Conference in Mobile, AL, 3/06.
66. **Rogers, R.F**., 2006: Tropical cyclone rainfall: Modeling and statistics. Overview talk given to visiting scientists from Germany in February 2006.
67. Marchok, T., **R.F. Rogers** and R. Tuleya, 2006: New methods for evaluating rainfall forecasts from operational models for landfalling tropical cyclones, 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 9A.1.
68. Lonfat, M., **R.F. Rogers**, F. D. Marks, Jr., T. Marchok, and A. Boissonnade, 2006: The Effect of Shear and Topography on Rainfall Forecasting with R-CLIPER, 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 12B.5.

69. **Rogers, R.F**., 2006: Summary of IFEX/TCSP flights in July 2005. Presented at NASA TCSP Science Team Meeting, April 2006, Huntsville, AL.
70. **Rogers, R.F**., M. Black, R. E. Hood, J. B. Halverson, E. J. Zipser, and G. M. Heymsfield, 2006: The Intensity Forecasting Experiment (IFEX): A NOAA multi-year field program for improving tropical cyclone intensity forecasting. 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 1A.2.
71. Hood, R., E. Zipser, G. M. Heymsfield, R. Kakar, J. Halverson, **R.F. Rogers**, and M. Black, 2006: Overview of the Field Phase of the NASA Tropical Cloud Systems and Processes (TCSP) Experiment, 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 1A.1.
72. Halverson, J.B., P. A. Hennon, G. M. Heymsfield, M. Black, and **R.F. Rogers**, 2006: Investigations of a convective burst in intensifying tropical storm Gert during TCSP. 27th Conf. on Hurricanes and Tropical Meteorology, April 23-28, 2006, Monterey, CA, 1A.6.

HONORS AND AWARDS:

Editors' Citation for Excellence in Refereeing for *JGR-Atmospheres*, 2016

South Florida Federal Employee of the Year – Scientific Category, South Florida Federal Executive Board, May 2011

NOAA Employee of the Month, April 2011

NASA Group Achievement Award, GRIP Team, 2011

AMS Editor's Award, *Weather and Forecasting*, 2008

Department of Commerce Bronze Medal (HRD group award) for Hurricane Katrina, May 2007

Third Place, AMS Father James B. MacElwane Award of Undergraduate Research, 1991.

Phi Beta Kappa National Honor Society

Phi Kappa Phi National Honor Society

Chi Epsilon Pi National Meteorology Honor Society

LEADERSHIP ACTIVITIES:

Chair, Fourth World Meteorological Organization International Workshop on Tropical Cyclones – Landfall Processes, Planned for 2017

Chair, International Science Steering Committee, Understanding and Prediction of Rainfall Associated with Landfalling Tropical cyclones (UPDRAFT), A proposal for a World Weather Research Program/WMO Research and Development Project, proposed by Key Laboratory of

Mesoscale Severe Weather of Ministry of Education, Nanjing University, Chinese Academy of Meteorological Sciences, 2014-present

Director, Hurricane Research Division's Hurricane Field Program – 2005, 2010, 2015, 2016

Chair, Third World Meteorological Organization International Workshop on Tropical Cyclones – Landfall Processes, Jeju, South Korea, December 8-10 2014

Chair, Expert Team on Landfall Processes, Tropical Meteorology Research Program, World Weather Research Programme, World Meteorological Organization, 2011-present

Topic Chair for Structure and Intensity Change session, Seventh World Meteorological Organization International Workshop on Tropical Cyclones, La Reunion, France, 2010

Lead, HRD Observations Team, 2015-present

SYNERGISTIC ACTIVITIES:

Program Committee, AMS 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, Puerto Rico, April 2016

Editorial Board, Tropical Cyclone Research and Review journal, 2016-present

Invited Speaker, International Top-level Forum on Rapid Change Phenomena in Tropical Cyclones, Haikou, China, 5-9 November 2012

Program Committee, AMS 30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, April 2012

Joint HRD/NHC Collaborative Hurricane Applications Requirements Team, 2011

Invited Speaker and Science Judge, Typhoon Morakot Workshop, Taipei, Taiwan, 2010

Invited Speaker, Second International Workshop on Tropical Cyclone Landfall Processes, Shanghai, China, 2009

NASA HS3 Science Team, 2010-present

NSF PREDICT Science Team, 2009-2010

NASA GRIP Science Team, 2009-2012

Interdepartmental Working Group for Tropical Cyclone Research, 2008-present

NASA Hurricane Science Research Program Science Team, 2008-present

Associate Editor, *Monthly Weather Review*, 2008-2013

NOAA-wide Service Assessment Team for Hurricanes Katrina and Rita, 2005

NASA Tropical Cloud Systems and Processes (TCSP) Science Team, 2005-2008

NSF Hurricane Rainband and Intensity Change Experiment (RAINEX) Science Team, 2005

Field Program Director for the Hurricane Research Division's Hurricane Field Program, July 1-September 30, 2005

Invited to attend NOAA Leadership Seminar, March 2005, in Warrenton, VA

Elected to serve as Adjunct Faculty in the Department of Meteorology and Physical Oceanography, University of Miami/RSMAS, September 2004.

Associate Editor, *Weather and Forecasting*, 2003-2013

Science Working Group for TEXMEX II Field Program (2003-4)

Committee for drafting NOAA Long-term Research Program Plan entitled "Solving the Hurricane Intensity and Inland Flood Forecast Problem", 2003

Max Eaton committee to determine best student presenter at 25th Conference on Hurricanes and Tropical Meteorlogy, San Diego (2002)

Visiting Research Scientist at Centre Nationale de la Recherche Scientifique, Toulouse, France (May-Novermber, 2001)

NASA CAMEX-4 Science Team, 2001-2004

Frequent reviewer of journal articles, including JAS, MWR, WAF, QJRMS, and proposals, including NSF and NASA

ACADEMIC COMMITTEES:

P. Finocchio, Ph.D Committee, University of Miami, RSMAS, 2014-present
G. Alvey, Ph.D Committee, University of Utah, 2016-present
A. Hazelton, Ph.D Committee, Florida State University, 2014-2016
P. Sanchez, M.S. Committee, University of Miami, RSMAS, 2012-2013
Y. Moon, Ph.D Committee, University of Miami, RSMAS, 2009-2012
P. Ray, Ph.D Committee, University of Miami, RSMAS, 2003-2008
Y. Moon, M.S. Committee, University of Miami, RSMAS, 2006-2008
J. Cangialosi, M.S. Committee, University of Miami, RSMAS, 2003-2004
O. Nuissier, Ph. D Committee, Université Paul Sabatier, Toulouse, France, 2003