

# Philippe P. Papin, Ph.D.

Naval Research Laboratory  
Marine Meteorology Division | NRC Research Associate  
7 Grace Hopper Avenue, Monterey, CA 93943

*Curriculum Vitae*

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## EDUCATION

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- Ph.D., Atmospheric Science** 2017  
University at Albany, Albany, NY  
Advisors: Lance F. Bosart and Ryan D. Torn  
Ph.D. Committee Members:  
Lance F. Bosart, Ryan D. Torn, Kristen Corbosiero, Chris Thorncroft, Ron McTaggart-Cowan  
Dissertation: *Intensity Variations in Potential Vorticity Streamers: Development Pathways, and Environmental Impacts in the North Atlantic Basin*
- M.S., Atmospheric Science** 2014  
University at Albany, Albany, NY  
Advisors: Lance F. Bosart and Ryan D. Torn  
Thesis: *A Climatology of Central American Gyres*
- B.S., Atmospheric Science; Minor in Mathematics – Magna Cum Laude** 2011  
University of North Carolina: Asheville, Asheville, NC  
Advisor: Chris Hennon  
Research Project: *Using the Rossby Radius of Deformation as a Forecasting Tool for Tropical Cyclogenesis*

## EMPLOYMENT

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- NRC Research Associate** 2018-Present  
Naval Research Laboratory, Monterey, CA  
Advisor: Carolyn Reynolds
- Research and Teaching Assistant** 2011-2017  
University at Albany, Albany, NY  
Advisors: Lance F. Bosart and Ryan D. Torn
- GIS Spatial Analysis** 2009-2011  
National Environmental Modeling and Analysis Center  
University of North Carolina: Asheville, Asheville, NC
- Undergraduate Research Assistant** 2007-2011  
University of North Carolina: Asheville, Asheville, NC  
Advisor: Chris Hennon
- Teaching Assistant** Fall 2009  
University of North Carolina: Asheville, Asheville, NC  
Advisor: Chris Hennon

## **INTERNSHIP EXPERIENCE**

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**Volunteer, Hydrometeorological Technician (HMT)** Summer 2010  
National Weather Service Forecasting Office, Greer, SC  
Coordinator: Larry Lee, Science and Operations Officer  
Performed day-to-day processes as a HMT. Assisted in making CWA's Long Term forecast and helped write, "Extended" GSP forecast discussion. Wrote "Nowcasts" sent directly to public. Verified SVR warnings issued in prior forecast cycle. Passed DLOC examination. Issued SVR warnings in a warning event simulator (WES).

## **DEPARTMENTAL SERVICE**

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**Graduate Student Focus Group Member** Spring 2012–2015  
Provided feedback to the Dept. of Atmospheric and Environmental Sciences on the graduate student curriculum, research opportunities, teaching assistantship assignments, and student preparedness for employment.

**Student Committee Member for Faculty Candidate Interviews** Winter 2013, 2014  
Interviewed candidates applying for faculty positions within the Dept. of Atmospheric and Environmental Sciences. Provided a written recommendation to the department after all interviews were conducted.

## **HONORS AND AWARDS**

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**Outstanding Student Poster Award** 2018  
98<sup>th</sup> Annual AMS Meeting, Austin, TX

**WxChallenge Trophy: 2<sup>nd</sup> Place Grad Student Overall for 2016-2017 Season** 2017  
University of Oklahoma, Norman, OK

**Bernard Vonnegut Teaching Award** 2016  
University at Albany, Albany, NY

**WxChallenge Trophy: 2<sup>nd</sup> Place Grad Student Forecaster in Grand Island, NE** 2016  
University of Oklahoma, Norman, OK

**WxChallenge Trophy: 2016 Tournament Champion in Huntsville, AL** 2016  
University of Oklahoma, Norman, OK

**WxChallenge Trophy: 3<sup>rd</sup> Place Overall for 2015-2016 Season** 2016  
University of Oklahoma, Norman, OK

**WxChallenge Trophy: 1<sup>st</sup> Place Overall Forecaster in Beckley, WV** 2016  
University of Oklahoma, Norman, OK

**WxChallenge Trophy: 2<sup>nd</sup> Place Grad Student Forecaster in Green Bay, WI** 2015  
University of Oklahoma, Norman, OK

**Outstanding Student Paper Award** 2014  
AGU Fall Meeting: San Francisco, CA

<b>Academic Excellence Award</b> University of North Carolina: Asheville, Asheville, NC	2011
<b>Research Excellence Award</b> University of North Carolina: Asheville, Asheville, NC	2011
<b>J. E. Serine Scholarship Award</b> Greenville County Schools, Greenville, SC	2009
<b>Watson-Brown Scholarship</b> Watson Brown Foundation, Thomson, GA	2009
<b>WxChallenge Trophy: 1<sup>st</sup> Place Undergrad Forecaster in Cincinnati, OH</b> University of Oklahoma, Norman, OK	2009
<b>WxChallenge Trophy: 1<sup>st</sup> Place Overall Forecaster in Minneapolis, MN</b> University of Oklahoma, Norman, OK	2008

## **PROFESSIONAL SERVICE**

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### **Reviewer**

- Journals: *Journal of Geophysical Research – Atmospheres*
- American Meteorology Society – *Journal of Climate*

### **Poster Judge**

- 15<sup>th</sup> AMS Annual Student Conference; New Orleans, LA, January 2016
- 17<sup>th</sup> AMS Annual Student Conference; Austin, TX, January 2018
- 33<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, April 2018

### **Memberships**

- American Meteorological Society (2009–Present)
- American Geophysical Union (2012–Present)

## **REFERRED PUBLICATIONS**

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**Papin, P.**, R. D. Torn, L. F. Bosart, 2017: A Climatology of Central American Gyres. *Mon. Wea. Rev.*, 145, 1983–2000. <http://journals.ametsoc.org/doi/pdf/10.1175/MWR-D-16-0411.1>

Hennon, C.C., **P.P. Papin**, C.M. Zarzar, and Co-Authors, 2013: Tropical Cloud Cluster Climatology, Variability, and Genesis Productivity. *J. Climate*. **26**, 3046–3066. <http://journals.ametsoc.org/doi/pdf/10.1175/JCLI-D-12-00387.1>

**Papin, P.**, 2011: Using the Rossby Radius of Deformation as a Forecasting Tool for Tropical Cyclogenesis. *Proceedings to the 25th National Conference on Undergraduate Research*, Ithaca College, New York. [http://www.atms.unca.edu/chennon/research/documents/papin\\_ncur2011\\_preprint.pdf](http://www.atms.unca.edu/chennon/research/documents/papin_ncur2011_preprint.pdf)

## **FIRST-AUTHOR CONFERENCE PRESENTATIONS**

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**Papin, P.P.**, L. F. Bosart, R. D. Torn, 2018: The Relationship Between Potential Vorticity Streamer Activity and Tropical Cyclone Activity in the North Atlantic Basin. *33<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology*, Ponte Vedra, FL, April 2018

**Papin, P.P.**, L. F. Bosart, R. D. Torn, 2017: Intensity Variations of Subtropical Potential Vorticity Streamers: Impact on the Environment of the Subtropical Atlantic and Tropical Cyclone Activity. *Seminar at the National Hurricane Center*, Miami, FL, March 2017.

**Papin, P.P.**, L. F. Bosart, R. D. Torn, 2017: Intensity Variations and Environmental Impact of Subtropical North Atlantic Basin PV Streamers. *29<sup>th</sup> Conference on Climate Variability and Change/97<sup>th</sup> AMS Annual Meeting*, Seattle, WA, January 2017.

**Papin, P.P.**, R. D. Torn: An Analysis of Multiple Steering Influences on Tropical Cyclone Joaquin (2015). *32<sup>nd</sup> Conference on Conference on Hurricanes and Tropical Meteorology*, San Juan, PR, April 2016.

**Papin, P.P.**: A Climatology of Central American Gyres. *Seminar at the National Hurricane Center*, Miami, FL, March 2016

**Papin, P.P.**, L. F. Bosart, R. D. Torn: The Antecedents of Subtropical PV Streamer Formation in the North Atlantic Basin. *28<sup>th</sup> Conference on Climate Variability and Change/96<sup>th</sup> AMS Annual Meeting*, New Orleans, LA, January 2016.

**Papin, P.P.**, R. D. Torn, L. F. Bosart: The Antecedents of Rossby Wave Breaking and PV Streamer Formation in the Tropical Atlantic. *17<sup>th</sup> Cyclone Workshop*, Pacific Grove, CA, October 2015.

**Papin, P.P.**, B. J. Moore, N. P. Bassill, R. D. Torn, L. F. Bosart: A Multi-Scale Investigation of the Historic Long Island Flash Flood on 13 August 2014. *27<sup>th</sup> Conference on Weather Analysis and Forecasting*, Chicago, IL, July 2015.

**Papin, P.P.**, R. D. Torn, L. F. Bosart: Tropical Cyclone Stan's Interaction Within a Central American Gyre. *7<sup>th</sup> Northeast Tropical Workshop*, MIT Endicott House; Dedham, MA, June 2015.

**Papin, P.P.**, B. J. Moore, N. P. Bassill, and Co-Authors: A Multi-Scale Investigation of the Historic Long Island Flash Flood on 13 August 2014. *40<sup>th</sup> Annual Northeastern Storm Conference*, Saratoga Springs, NY, March 2015.

**Papin, P.P.**, R. D. Torn, L. F. Bosart: Tropical Cyclone Interactions Within Gyre Circulations in the Atlantic Basin. *10<sup>th</sup> International Conference for Mesoscale Meteorology and Tropical Cyclones*, Boulder, CO, September 2014.

**Papin, P.P.**, R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *1<sup>st</sup> World Weather Open Science Conference*, Montreal, QC, Canada, August 2014.

**Papin, P.P.**: A Climatology of Central American Gyres. *Master's thesis seminar*, University at Albany, Albany, NY, July 2014.

**Papin, P.P.:** A Climatology of Central American Gyres. *31<sup>st</sup> Conference on Hurricanes and Tropical Meteorology*, San Diego, CA, March 2014.

**Papin, P.P.,** R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *39<sup>th</sup> Northeastern Storm Conference*, Rutland, VT, March 2014.

**Papin, P.P.,** R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *26<sup>th</sup> Conference on Weather Analysis and Forecasting/94<sup>th</sup> AMS Annual Meeting*, Atlanta, GA, February 2014.

**Papin, P.P.,** R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *16<sup>th</sup> Cyclone Workshop*, Sainte-Adele, QC, Canada, September 2013.

**Papin, P.P.,** R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *6<sup>th</sup> Northeast Tropical Workshop*, Rensselaerville, NY, May 2013.

**Papin, P.P.,** R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *38<sup>th</sup> Northeastern Storm Conference*, Rutland, VT, March 2013.

**Papin, P.P.,** C. C. Hennon: Using the Rossby Radius of Deformation as a Forecasting Tool for Tropical Cyclogenesis. *Spring 2011 Symposium on Undergraduate Research and Creativity*, University of North Carolina: Asheville, Asheville, NC, April 2011.

**Papin, P.P.,** C. C. Hennon: Using the Rossby Radius of Deformation as a Forecasting Tool for Tropical Cyclogenesis. *25<sup>th</sup> National Conference for Undergraduate Research*, Ithaca College, Ithaca, NY, March–April 2011.

**Papin, P.P.,** G. Satterwhite: Tips for Self-Forecasting Severe Weather & Severe Weather communication. *2010 UNCA Severe Weather Workshop*, University of North Carolina: Asheville, Asheville, NC, April 2010.

## **SELECT CO-AUTHOR CONFERENCE PRESENTATIONS**

Bosart, L. F., **P.P. Papin**, A. M. Bentley, and T. Burg: TC Lionrock (2016) Touches All the Bases during Its Lifecycle: Monsoon Gyre, Tropical Transition, TC-TC interactions, a Predecessor Rain Event, and Extratropical Transition. *33<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology*, Ponte Vedra, FL, April 2018.

Bosart, L. F., **P.P. Papin**, A. S. Levine, and A. M. Bentley: The Influence of a Precursor Central American Gyre and a Northerly Surge into the Gulf of Tehuantepec on the Formation of Hurricane Patricia in October 2015. *32<sup>nd</sup> Conference on Conference on Hurricanes and Tropical Meteorology*, San Juan, PR, April 2016.

Bosart, L. F., **P.P. Papin**, A. M. Bentley, and B. J. Moore: Large-Scale Antecedent Conditions Associated with 2014-2015 Winter Onset over North America and their Impact on Predictability. *28<sup>th</sup> Conference on Climate Variability and Change/96<sup>th</sup> AMS Annual Meeting*, New Orleans, LA, January 2016.

Moore, B. J., **P. P. Papin**, N. P. Bassill and Co-Authors: A Multiscale Analysis of Three Consecutive Flood-Producing Heavy Rainfall Events During August 2014. *16th Conference on Mesoscale Processes*, Boston, MA, August 2015.

Bosart, L. F., A. M. Bentley, and **P. P. Papin**: The Uber Jet and Widespread Destructive Ice Storm of 21–23 December 2013. *39th NWA Annual Meeting*, Salt Lake City, UT, October 2014.

Bosart, L. F., A. M. Bentley, **P. P. Papin**, and C. N. Helms: Hurricane Sandy (2012): Growth Through Multiple Trough Interactions. *10<sup>th</sup> International Conference for Mesoscale Meteorology and Tropical Cyclones*, Boulder, CO, September 2014.

Bosart, L. F., A. M. Bentley, C. N. Helms, and **P. P. Papin**: Hurricane Sandy (2012): A Multiscale Trough Interaction Perspective. *31<sup>st</sup> Conference on Hurricanes and Tropical Meteorology*, San Diego, CA, April 2014.

Bosart, L. F., A. M. Bentley, and **P. P. Papin**: The Uber Jet and Widespread Destructive Ice Storm of 21–23 December 2013. *39<sup>th</sup> Northeastern Storm Conference*, Rutland, VT, March 2014.

Bosart, L. F., K. S. Griffin, **P. P. Papin**, and R. D. Torn: Central American Gyres, Tropical Cyclones, and Heavy Eastern U.S. Rainfall, *2012 Fall Meeting, AGU*, San Francisco, CA, December 2012.

Bosart, L. F., K. S. Griffin, **P. P. Papin**: Central American Gyres, Tropical Cyclones, and Heavy Rainfall, *30<sup>th</sup> Conference on Hurricanes and Tropical Meteorology*, Jacksonville, FL, April 2012.

Hennon, C. C., **P.P. Papin**, C. M. Zarzar, and C. M. Helms: Tropical Cloud Cluster Variability and Genesis Productivity, *30<sup>th</sup> Conference on Hurricanes and Tropical Meteorology*, Jacksonville, FL, April 2012.

Hennon, C. C., **P.P. Papin**, C. M. Zarzar: Climatology of Tropical Cloud Clusters, *92<sup>nd</sup> American Meteorological Society Annual Meeting*, New Orleans, LA, January 2012.

## **FIRST-AUTHOR POSTER PRESENTATIONS**

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**Papin, P.P.**, L. F. Bosart: Subtropical PV Streamer Variability and Impact in the Subtropical North Atlantic Basin. *32<sup>nd</sup> Conference on Hurricanes and Tropical Meteorology*, San Juan, PR, April 2016.

**Papin, P.P.**, R. D. Torn, L. F. Bosart: Tropical Cyclone Interactions Within Gyre Circulations in the Atlantic Basin. *2014 Fall Meeting, AGU*, San Francisco, CA, December 2014.

**Papin, P.P.**, K. S. Griffin, R. D. Torn, L. F. Bosart: A Climatology of Central American Gyres. *2012 Fall Meeting, AGU*, San Francisco, CA, December 2012.

**Papin, P.P.**, K. S. Griffin, R. D. Torn, L. F. Bosart: An Analysis of Central American Gyres. *25<sup>th</sup> Conference on Weather Analysis and Forecasting*, Montreal, QC, Canada, May/June 2012.

**Papin, P.P.**, K. S. Griffin, R. D. Torn, L. F. Bosart: An Analysis of Central American Gyres. *30<sup>th</sup> Conference on Hurricanes and Tropical Meteorology*, Jacksonville, FL, April 2012.

## **TECHINICAL SKILLS**

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**Computer Languages:** NCAR Command Language (NCL), Unix Shell Scripting, HTML 4/5, MATLAB, JavaScript, PHP, Python, GEMPAK  
**Storage:** netCDF, GRIB1/2, binary, all text-based files (i.e., .csv, .txt)  
**Datasets:** NCEP-CFS Reanalysis, ERA-Interim Reanalysis, NASA-MERRA reanalysis, NCEP-NCAR Reanalysis, GFS analyses, ECWMF analyses, HRRR analyses, IBTrACS, GridSat, NASA-Merged IR  
**Software:** Microsoft Word, PowerPoint, Excel (Mac/Windows), GRLevel2, GRLevel3, GR2Analysis, AWIPS, GFE, NCview, WeatherLink, BUFKIT, etc.

## **REFERENCES**

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**Dr. Lance F. Bosart** (Ph.D. coadvisor)

Department of Atmospheric and Environmental Sciences, University at Albany, SUNY  
1400 Washington Avenue, Albany, NY 12222

Office: Earth Science 227

Phone: (518) 442-4564

E-mail: [LBosart@albany.edu](mailto:LBosart@albany.edu)

Dr. Ryan D. Torn (Ph.D. coadvisor)

Department of Atmospheric and Environmental Sciences, University at Albany, SUNY  
1400 Washington Avenue, Albany, NY 12222

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