

# DAVID VOLLARO

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**OVERVIEW:** Extensive experience working with large datasets and have written thousands of programs for data preparation and analysis. Assisted in the preparation and writing of over 25 peer-reviewed articles and was largely responsible for data analysis in these works. Possess strong communication and multitasking abilities developed through mentoring graduate students with their research and programming while simultaneously conducting independent research. Possess the ability to learn new languages and applications, having recently taught myself Python and completed an online course in SQL. Worked on UNIX, Linux, and Windows platforms and also have experience with HTML, CSS and Excel.

## COMPUTER SKILLS

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- Extensive experience working with big datasets in various formats including gridded and spectral fields from ECMWF and NOAA.
- Ability to manipulate and visualize satellite data, radar data, lightning data, atmospheric surface and upper air observations.
- Knowledge of Python, SQLite, Fortran, C-Shell, HTML, CSS, NCL, McIDAS, and GEMPAK programming languages.
- Proficiency with Microsoft Office 2013 applications (Excel, Word, PowerPoint, Access).
- Platform experience: Linux, Windows, UNIX and Solaris.

## EXPERIENCE

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### **Research Foundation of the State University of New York**

**Senior Scientific Programmer**, 2000-2019

**Research Programmer**, 1988-2000

- Used programming skills to process and interpret meteorological observations and model analyses.
- Learned new computer languages and research methods to more efficiently manipulate various data sources.
- Carried out numerous scientific calculations, created figures, and assisted in the writing of research publications and grant proposals.
- Mentored graduate students to strengthen their programming proficiency and develop proper research habits.

## PROFESSIONAL TRAINING

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**SQL for Data Science, UC Davis, [Offered through Coursera](#).** May 2020

**NSF XSEDE HPC Big Data Workshop,** Albany, NY August 6-7 2019

Introduction to big data analytics and machine learning

**Unidata Regional Software Training Workshop,** Albany, NY May 29-30 2019

Introduction to python programming for the atmospheric sciences

**NCAR Command Language Workshop,** Albany, NY May 21-24 2013

Introduction to NCL Programming Language

## EDUCATION

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**MS** University at Albany, Atmospheric Science, May 1988

Thesis: "A large-scale analysis of the evolution of the outflow level winds in an intensifying tropical cyclone"

**BS** University at Albany, Atmospheric Science, May 1985

Graduated magna cum laude

## HONORS AND AWARDS

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- NASA Group achievement award, Hurricane and Severe Storm Sentinel 2015
- NASA Group achievement award, Genesis and Rapid Intensification Processes 2011

## PROFESSIONAL AFFILIATIONS

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American Meteorological Society 1988-2019

## PROFESSIONAL SERVICE

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**Reviewer for:**

- Monthly Weather Review
- Journal of the Atmospheric Sciences

## PRESENTATIONS AND INVITED LECTURES

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### **Paper Presentations**

*Influences of vertical shear and upper level vorticity on tropical cyclone intensification.* 20th Conference on Hurricanes and Tropical Meteorology. May 10-14 1993, San Antonio, Texas

*Excitation of secondary eye walls by external interactions.* 19th Conference on Hurricanes and Tropical Meteorology. May 6-10 1991, Miami Florida.

## PUBLICATIONS

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Coauthor on 28 publications in peer-reviewed journals.

## COMMUNITY SERVICE

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**Regional Food Bank of Northeastern New York**  
Volunteer, Albany, 2016-2019

**Bethlehem Soccer Club**  
Youth coach 2010-2016

**Big Brothers Big Sisters of the Capital Region**  
Big brother volunteer, Albany, 1989-1991

## PUBLICATIONS

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Molinari, J., J. Zhang, R.F. Rogers, and D. Vollaro 2019: [REPEATED EYEWALL REPLACEMENT CYCLES IN HURRICANE FRANCES \(2004\)](#). *Monthly Weather Review*, **147**, 2009-2022.

Molinari, J., M. Rosenmayer, D. Vollaro, and S. Ditchek 2019: [Turbulence Variations in the Upper Troposphere in Tropical Cyclones from NOAA G-IV Flight-Level Vertical Acceleration Data](#). *Journal of Applied Meteorology and Climatology*, **58**, 569-583.

Romps, D.M., A. Charn, R. Holzwith, W. Lawrence, J. Molinari, and D. Vollaro 2018: [CAPE times P explains lightning over land but not the land-ocean contrast](#). *Geophysical Research Letters*, **45**, 12623-12630.

Molinari, J., and D. Vollaro 2017: [Monsoon Gyres of the Northwest Pacific: Influences of ENSO, the MJO, and the PacificJapan Pattern](#). *Journal of Climate*, **30**, 1765-1777.

Ditchek, S., J. Molinari, and D. Vollaro 2017: [Tropical Cyclone Outflow-Layer Structure and Balanced Response to Eddy Forcings](#). *Journal of the Atmospheric Sciences*, **74**, 133-149.

Romps, D.M., J.T. Seeley, D. Vollaro, and J. Molinari, 2014: [Projected increase in lightning strikes in the United States due to global warming](#). *Science*, **346**, 851-854.

Molinari, J., and D. Vollaro, 2014: [Symmetric instability in the outflow layer of a major hurricane](#). *Journal of the Atmospheric Sciences*, **71**, 3739-3746.

Molinari, J., P. Duran, and D. Vollaro, 2014: [Low Richardson number in the tropical cyclone outflow layer](#). *Journal of the Atmospheric Sciences*, **71**, 3164-3179.

Crandall, B., J. Molinari, and D. Vollaro, 2013: [Forecasting Challenges Associated with Tropical Cyclones Within Subtropical Gyres](#). *Weather and Forecasting*, **29**, 99-114.

- Molinari, J., J. Frank, and D. Vollaro, 2013: [Convective bursts, downdraft cooling, and boundary layer recovery in a sheared tropical storm](#). *Monthly Weather Review*, **141**, 1048-1060.
- Molinari, J., and D. Vollaro, 2013: [What percentage of western north Pacific tropical cyclones form within the monsoon trough?](#) *Monthly Weather Review*, **141**, 499-505.
- Molinari, J., D.M. Romps, D. Vollaro, and L. Nguyen, 2012: [CAPE in tropical cyclones](#). *Journal of the Atmospheric Sciences*, **69**, 2452-2463.
- Molinari, J. and D. Vollaro, 2012: [A subtropical cyclonic gyre associated with interactions of the MJO and the midlatitude jet](#). *Monthly Weather Review*, **140**, 343-357.
- Molinari, J., and D. Vollaro, 2010: [Rapid intensification of a sheared tropical storm](#). *Monthly Weather Review*, **138**, 3869-3885.
- Molinari, J., and D. Vollaro, 2010: [Distribution of helicity, CAPE, and shear in tropical cyclones](#). *Journal of the Atmospheric Sciences*, **67**, 274-284.
- Molinari, J., and D. Vollaro, 2008: [Extreme helicity and intense convective towers in Hurricane Bonnie](#). *Monthly Weather Review*, **136**, 4355-4372.
- Molinari, J., K. Lombardo, and D. Vollaro, 2007: [Tropical cyclogenesis within an equatorial Rossby wave packet](#). *Journal of the Atmospheric Sciences*, **64**, 1301-1317.
- Molinari, J., P. Dodge, D. Vollaro, K.L. Corbosiero, and F. Marks, Jr., 2006: [Mesoscale aspects of the downshear reformation of a tropical cyclone](#). *Journal of the Atmospheric Sciences*, **63**, 341-354.
- Molinari, J., D. Vollaro, and K.L. Corbosiero, 2004: [Tropical cyclone formation in a sheared environment: A case study](#). *Journal of the Atmospheric Sciences*, **61**, 2493-2509.
- Molinari, J., and D. Vollaro, 2000: [Planetary and synoptic scale influences on eastern Pacific tropical cyclogenesis](#). *Monthly Weather Review*, **128**, 3296-3307.
- Molinari, J., D. Vollaro, S. Skubis, and M. Dickinson, 2000: [Origins and mechanisms of eastern Pacific tropical cyclogenesis: A case study](#). *Monthly Weather Review*, **128**, 125-139.
- Molinari, J., S. Skubis, D. Vollaro, F. Alsheimer, and H. Willoughby, 1998: [Potential vorticity analysis of hurricane intensification](#). *J. Atmos. Sci.*, **55**, 2632-2644.
- Molinari, J., D. Knight, M. Dickinson, D. Vollaro, and S. Skubis, 1997: [Potential vorticity, easterly waves, and tropical cyclogenesis](#). *Monthly Weather Review*, **125**, 2699-2708.
- Molinari, J., S. Skubis, and D. Vollaro, 1995: [External influences on hurricane intensity: Part III. Potential vorticity structure](#). *J. Atmos. Sci.*, **52**, 3593-3606.

Molinari, J., D. Vollaro, and S. Skubis, 1993: [Application of the Eliassen balanced model to real-data tropical cyclones](#). *Monthly Weather Review*, **121**, 2409-2419.

Molinari, J., D. Vollaro, and F. Robasky, 1992: Use of ECMWF operational analyses for studies of the tropical cyclone environment. *Meteorology and Atmospheric Physics*, **47**, 127-144.

Molinari, J., and D. Vollaro, 1990: [External influences on hurricane intensity: Part II. Vertical structure and response of the hurricane vortex](#). *Journal of the Atmospheric Sciences*, **47**, 1902-1918.

Molinari, J., and D. Vollaro, 1989: [External influences on hurricane intensity: Part I. Outflow layer eddy angular momentum fluxes](#). *Journal of the Atmospheric Sciences*, **46**, 1093-1105.

## REFERENCES

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**Dr. John Molinari**, Research Professor, Retired.

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