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EDUCATION

BS, Meteorology and Oceanography, Polytechnic University, Brooklyn, New York, June 1981
JD, New York Law School, June 1984
MS, Atmospheric Science, University at Albany, State University of New York, May 1995
Ph.D., Atmospheric Science, University at Albany, State University of New York, May 2000

PROFESSIONAL EXPERIENCE

Atmospheric Sciences Research Center
Research Associate, September 2013

AWS Truepower, LLC
Lead Research Scientist, 2011 – July 2013
Senior Research Scientist, 2009 – 2011

AWS Truewind, LLC
Research Scientist, 2007 – 2009
Atmospheric Information Services
Principal and Consulting Meteorologist, March 2000 - February 2007.

EnviroLaw
Legal and Regulatory Consultant, August 2002 - February 2007

Research Foundation, State University of New York
Post-Doctorate Research Assistant, Atmospheric Sciences Research Center, January 2000 – September 2000

New York City Department of Environmental Protection (NYCDEP)
Assistant Counsel
August 1985 - January 1993

Professional Societies

American Meteorological Society, American Geophysical Union, American Wind Energy Association, New York State Bar Association

PROFESSIONAL LICENSES AND CERTIFICATIONS

Admitted to the New York State Bar, Appellate Division, 2nd Department, March 1985
Certified Consulting Meteorologist (#606), American Meteorological Society (February 2002)

SELECTED PUBLICATIONS

- Wilczak, J., and Coauthors (J. Freedman), 2015: The Wind Forecast Improvement Project (WFIP): A public-private partnership addressing wind energy forecast needs. To appear *Bull. Amer. Meteor. Soc.*
- Geng X, L. Zhou, J. M. Freedman, S. Baidya Roy, R. A. Harris, M. C. Cervarich, J. Arnfield, 2015: Investigation of the Effects of Atmospheric Boundary Layer Turbulence, Wind Speed, and Stability on Wind Farm Induced Warming Effects Using Observations from a Field Campaign. *Submitted to Climate Dynamics.*
- Orwig, K.; Ahlstrom, M.; Banunarayanan, V.; Sharp, J.; Wilczak, J.; Freedman, J.; Haupt, S.; Cline, J.; Bartholomy, O.; Hamann, H.; Hodge, B.; Finley, C.; Nakafuji, D.; Peterson, J.; Maggio, D.; Marquis, M., "Recent Trends in Variable Generation Forecasting and Its Value to the Power System," *Sustainable Energy, IEEE Transactions on*, vol.PP, no.99, pp.1-10
- Freedman, J. M., and J. W. Zack, 2012: Identifying and Forecasting Ramp Events, *North Amer. Wind Power*, May 2012.
- Freedman, J. M., and K. E. Moore, 2012: Wind Shear And Why It Matters, *North Amer. Wind Power*. June 2012
- Freedman, J. M., K. T. Waight, and P. B. Duffy, 2009: Does Climate Change Threaten Wind Resources? *North Amer. Wind Power*, 6, 49 - 53.
- Freedman, J. M., D. R. Fitzjarrald, K. E. Moore, and R. K. Sakai, 2001: Boundary layer cumulus clouds and vegetation-atmosphere feedbacks. *J. Climate*, **14**, 180-197.
- Freedman, J. M. and D. R. Fitzjarrald, 2001: Post-frontal air mass modification. *J. Hydrometeorology*, **2**, 419-437.

RECENT RESEARCH

- Department of Energy - *Wind Forecast Improvement Project (2010 - 2014)*; field and modeling study to improve short-term wind energy forecasting total funding: \$3.5 million. Lead PI (with AWS Truepower) and Project Manager for work involving seven partners (including the Electric Reliability Council of Texas, NREL, Texas Tech University, Oklahoma University, North Carolina State University, MESO, Inc., and ICF International).
- Hawaiian Electric Companies (HECO) - *Integration of an observation network with renewable energy forecasts (2011 - 2014)*. Lead PI (with AWS Truepower) on work with utilities in the Hawaiian Islands to deploy the Solar and Wind Integrated Forecast Tool

(SWIFT); total funding: \$1.2 million. This work included deployment of a network of remote sensing instrumentation to support SWIFT and utility integration of renewables on HECO's electric grid.

- California Energy Commission, Co-Principal Investigator, *Temporal Analysis of Solar Forecasting on Utility PV Plants, 2010 - 2013*. Contract #500-10-1057 under the Public Interest Energy Research Program (PIER); total funding: \$547,961. Project to develop utility-scale solar forecasting system.
- California Energy Commission/Lawrence Livermore National Lab – *The potential effects of climate change on wind energy resources in California (2007 - 2009)*. Downscaled climate change study over Tehachapi at 15 km and 4 km resolution, CA; total funding: \$500,000; Co-PI (with AWS Truewind) on effort to investigate the potential effects of climate change on wind energy resources in California.

AWARDS

2015 *Utility Variable Integration Group Achievement Award*: for contributions to improve wind energy forecasts through the Wind Forecast Improvement Project

2000 *University at Albany's Gokhale Award*: for Achievement in Atmospheric Science