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Education

PhD, Meteorology, *The Pennsylvania State University*, University Park, PA, 1996

Thesis: *Radar Remote Sensing of Scalar and Velocity Microturbulence*

M.S., Meteorology, *The Pennsylvania State University*, University Park, PA, 1989

B.S., Mechanical Engineering, *Brown University*, Providence, RI, 1984

Employment

2007–present Meteorologist, ZP-IV, NOAA Earth System Research Laboratory, Boulder, CO

1996–2007 Research Associate (RA; Research Scientist III), CIRES, University of Colorado/NOAA Earth System Research Laboratory, Boulder, CO

1989–1996 Professional Research Assistant (PRA), CIRES, University of Colorado/NOAA Environmental Technology Laboratory, Boulder, CO

1986–1989 Graduate Research Assistant, The Pennsylvania State University, University Park, PA

1984–1986 Engineer, Knolls Atomic Power Laboratory, Niskayuna, NY

Leadership

Lead (2015-current), Hydrometeorological Observations and Processes Team, Physical Sciences Division, ESRL

Acting Chief (2013-2014), Water Cycle Branch, Physical Sciences Division, ESRL

Lead (2007-2012), Observing System Science Team, Water Cycle Branch, Physical Sciences Division, ESRL

- Supervise team's federal staff, research, and field activities
- Manage project budgets
- Develop new research and initiatives
- Design observing strategies for instrument deployments used in coastal weather and air quality related field experiments

CIRES Supervisor/Science Advisor, University of Colorado

- Develop work plan and evaluate annual performance of CIRES members within Research Team

Field Project Management

- CalWater-2015 Mission Scientist
- California HMT-Legacy Project

- TEXAS-2006 Air Quality Study
- NOAA Coastal Storms Program
- NOAA Integrated Ocean Observing System
- NOAA Hydrometeorological Testbed
- New England Air Quality Studies
- New England High Resolution Temperature Program
- TEXAS-2000 Air Quality Study
- 1999 Southern Oxidants Study

NOAA's Planning, Programming, Budgeting, and Execution System

- Lead, Weather and Water Science, Technology and Infusion Capability Team – Research and Development for Marine and Coastal Weather
- Co-lead, Weather and Water Science, Technology and Infusion Capability Team – Research, Development, and Acquisitions for Observations

Science Team Participation

- Director, NOAA's Hydrometeorology Testbed (HMT)
- CalWater-2 Scientific Steering Group
- Rapid Science Synthesis Team for the TEXAS-2006 Air Quality Study
- Surface Networks Working Group Co-chair for the International Consortium for Atmospheric Research on Transport and Transformation
- New England Temperature and Air Quality Pilot Study
- New England Air Quality Study
- International Transport and Chemical Transformation Experiment
- Pacific Land-falling Jets Experiment
- TEXAS-2000 Air Quality Study
- 1999 Southern Oxidants Study

Research Accomplishments

Air Quality

- Documented the impact of meteorological variability on surface ozone measured during the 2002 and 2004 New England Air Quality Studies
- Designed and led development of a wind profiler trajectory tool for air quality studies
- Studied the impact of surface heterogeneity on the summertime morning transition from stable to convective conditions
- Provided a careful theoretical and experimental examination of the space and time filters inherent in the sampling of pulsed Doppler radars, and modified the established radar filtering equation to account for the time filter
- Compared measured mixing depths with predictions from 1-D and 3-D numerical models
- Demonstrated the sensitivity of wind profiler measurements to changes in the signal processing parameters, and provided recommendations for how to optimize these parameters for different

wind profiling and turbulence applications

- Developed first method for estimating convective mixing depth using wind profilers
- Evaluated methods of using wind profilers to measure the turbulence structure of the planetary boundary layers

Coastal Weather

- Collaborated with NOAA, Scripps, and USGS scientists to develop an observational strategy for improving water resource management in California
- Led a team of ESRL investigators to evaluate unmanned aircraft as an alternative to multi-spectral imaging from satellites to monitor coastal waters for harmful alga blooms and other water quality issues
- Invented and patented a snow-level detection algorithm for use with Doppler radars, including commercially available Doppler wind profilers
- Developed an algorithm that uses radar reflectivity and Doppler vertical velocity measurements to partition different types of orographically enhanced rainfall
- Designed an operating strategy for the NOAA/ETL S-band radar to capture the full range of radar reflectivities associated with Pacific land-falling winter storms
- Compiled a summary of the remote sensing techniques used to extract microphysical and turbulence information from radar measurements of maritime clouds
- Developed methods to use wind profilers to measure the turbulence structure of marine boundary layers, including marine boundary-layer depth. First to implement these measures
- Designed an on-call approach to field operations for the 2004 Hydrometeorological Testbed experiment that allowed for an extended observing period (four months) by saving tens of thousands of dollars in salary and travel expenses

Professional Service

American Meteorological Society Meteorological Air Pollution Committee, 2005-2011

CIRES Committee on Bridge Funding and Sabbatical Leave, 2005

CIRES Members' Council Restructuring Committee, 2004

Environmental Technology Laboratory Strategic Planning Team, 2002-2003

American Meteorological Society Measurements Committee, 2000–2003

Organizing Committee, Radar Calibration Workshop, 2000–2001

Environmental Technology Laboratory Publications Committee, 1998–present

CIRES Members Council, 1997–1999

Awards

2013 California Department of Water Resources Climate Science Service Award

2012 NOAA Bronze Medal

2009 NOAA Bronze Medal

2008 California Department of Water Resources Climate Science Paper Award

2004, 2007 OAR Outstanding Scientific Paper Awards

2003 NOAA Bronze Medal

2003 CIRES Outstanding Performance Award

1998 Department of Commerce Silver Medal

Publications

Refereed Journal Articles

- Albrecht, B.A., C.W. Fairall, D.W. Thomson, A.B. White, J.B. Snider, and W.H. Schubert, 1990: Surface-based remote sensing of the observed and adiabatic liquid water content of stratocumulus clouds. *Geophys. Res. Lett.*, **17**, 89–92.
- Angevine, W.M., A.B. White, and S.K. Avery, 1994: Boundary layer depth and entrainment zone characterization with a boundary layer profiler. *Bound.-Layer Meteor.*, **68**, 375–385.
- Angevine, W.M., A.B. White, C.J. Senff, M. Trainer, and R.M. Banta, 2003: Urban-rural contrasts in mixing height and cloudiness over Nashville in 1999. *J. Geophys. Res.*, *108*(D3), 4092, doi:10.1029/2001JD001061.
- Angevine, W.M., C.J. Senff, A.B. White, E.J. Williams, J. Koermer, S.T.K. Miller, R. Talbot, P.E. Johnston, S.A. McKeen, and T. Downs, 2004: Coastal boundary layer influence on pollutant transport in New England, *J. Appl. Meteor.*, **43**, 1425–1437.
- Angevine, W.J., J.E. Hare, C.W. Fairall, D.E. Wolfe, R.J. Hill, W.A. Brewer, and A.B. White, 2006: Structure and formation of the highly stable boundary layer over the Gulf of Maine. *J. Geophys. Res.*, **111**, D23S22, doi:10.1029/2006JD007465.
- Ault, A.P.; C.R. Williams, A.B. White, P.J. Neiman, J.M. Creamean, C.J. Gaston, F.M. Ralph, and K.A. Prather, 2011: Detection of Asian dust in California orographic precipitation. *J. Geophys. Res.*, **116**, D16205, doi:10.1029/2010JD015351
- Banta, R.M., C.J. Senff, R.J. Alvarez, A.O. Langford, D.D. Parrish, M.K. Trainer, L.S. Darby, R.M. Hardesty, B. Lambeth, J.A. Neuman, W.M. Angevine, J. Nielsen-Gammon, S.P. Sandberg, and A.B. White, 2011: Dependence of daily peak O-3 concentrations near Houston, Texas on environmental factors: Wind speed, temperature, and boundary-layer depth. *Atmos. Environ.*, **45**, 162–173.
- Banta, R.M., C.J. Senff, A.B. White, M. Trainer, R.T. McNider, R.J. Valente, S.D. Mayor, R. J. Alvarez, R.M. Hardesty, D. Parrish, and F.C. Fehsenfeld, 1998: Daytime buildup and nighttime transport of urban ozone in the boundary layer during a stagnation episode. *J. Geophys. Res.*, **103**, 22,519–22,544.
- Banta, R.M., and A.B. White, 2003: Mixing-height differences between land use types: Dependence on wind speed. *J. Geophys. Res.*, **108**, doi:10.1029/2002JD002748.
- Banta, R.M., C.J. Senff, R.J. Alvarez, A.O. Langford, D.D. Parrish, M.K. Trainer, L.S. Darby, R.M. Hardesty, B. Lambeth, J.A. Neuman, W.M. Angevine, J. Nielsen-Gammon, S.P. Sandberg, and A.B. White, 2011: Dependence of daily peak O3 concentrations near Houston, Texas on environmental factors: Wind speed, temperature, and boundary-layer depth. *Atmos. Environ.*, **45**, 162–173. doi:10.1016/j.atmosenv.2010.09.030
- Bianco, L., J.M. Wilczak, and A.B. White, 2008: Convective boundary layer depth estimation from wind profilers: Statistical comparison between an automated fuzzy logic algorithm and expert estimations. *J. Atmos. Oceanic Technol.*, **25**, 1397–1413.
- Chertock, B., C.W. Fairall, and A.B. White, 1993: Surface-based measurements and satellite retrievals of broken cloud properties in the Equatorial Pacific. *J. Geophys. Res.*, **98**, 18,489–18,500.
- Coplen, T.B., P.J. Neiman, A.B. White, J.M. Landwehr, F.M. Ralph, and M.D. Dettinger, 2008: Extreme changes in stable hydrogen isotopes and precipitation characteristics in a landfalling Pacific storm. *Geophys. Res. Lett.*, **35**, L21808, doi:10.1029/2008GL035481

- Creamean, J.M., D.J. Suski, D. Rosenfeld, A. Cazorla, P.J. DeMott, R.C. Sullivan, A.B. White, F.M. Ralph, P. Minnis, J. M. Comstock, J.M. Tomlinson, and K.A. Prather, 2013: Dust and Biological Aerosols from the Sahara and Asia Influence Precipitation in the Western U.S. *Science*, doi:10.1126/science.1227279
- Creamean, J.M. C. Lee, T.C. Hill, A.P. Ault, P.J. DeMott, A.B. White, F.M. Ralph, and K.A. Prather, 2014: Chemical properties of insoluble precipitation residue particles. *J. Aerosol Sci.*, **76**, 13–27.
- Creamean, J.M., J.R. Spackman, S.M. Davis, and A.B. White, 2014: Climatology of long-range transported Asian dust along the West Coast of the United States. *J. Geophys. Res.*, **119**, 12,171–12,185.
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- Neiman, P.J., P.O.G. Persson, F.M. Ralph, D.P. Jorgensen, A.B. White, and D.E. Kingsmill, 2004: Modification of fronts and precipitation by coastal blocking during an intense landfalling winter storm in Southern California: Observations during CALJET. *Mon. Wea. Rev.*, **132**, 242–273.
- Neiman, P.J., B.E. Martner, A.B. White, G.A. Wick, F.M. Ralph, and D.E. Kingsmill, 2005: Wintertime nonbrightband rain in California and Oregon during CALJET and PACJET: Geographic, interannual and synoptic variability. *Mon. Wea. Rev.*, **133**, 1199–1223.
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- Neiman, P.J., A.B. White, F.M. Ralph, D.J. Gottas, and S.I. Gutman, 2009: A water vapor flux tool for precipitation forecasting. *Water Management*, **162** (WM2), doi: 10.1680/wama.2009.162.2.83.

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