

David W. DuBois

New Mexico State Climatologist
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Education

University of Nevada, Reno	Atmospheric Sciences	Ph.D., 2003
New Mexico State University	Physics	M.S., 1991
Rutgers University	Physics	B.A., 1988

Professional Experience

2010 - present State Climatologist & Assistant College Professor, New Mexico State University, Department of Plant & Environmental Sciences, Las Cruces, NM

2009 – 2010 Associate Research Air Quality Scientist, Desert Research Institute, Division of Atmospheric Sciences, Las Vegas, NV

2003 – 2009 Assistant Research Air Quality Scientist, Desert Research Institute, Division of Atmospheric Sciences, Las Vegas, NV

2001 – 2003 Manager, Dispersion Modeling and Emission Inventory Section, Air Quality Bureau, New Mexico Environment Department, Santa Fe, NM

1999 – 2001 Environmental Engineering Specialist, Dispersion Modeling Section, Air Quality Bureau, New Mexico Environment Department, Santa Fe, NM

1995 – 1999 Research Assistant, Division of Atmospheric Sciences, Desert Research Institute, Reno, NV

1991 – 1995 Associate Scientist, SciTec, Inc., Princeton, NJ

Recent Peer-Reviewed Publications

Rodopoulou, S., M.-C. Chalbot, E. Samoli, D.W. DuBois, B.D. San Filippo, and I.G. Kavouras (2014). Air pollution and hospital emergency room and admissions for cardiovascular and respiratory diseases in Dona Ana County, New Mexico. *Environmental Research* 129:39-46 doi: 10.1016/j.envres.2013.12.006

Bilal, M., J.E. Nichol, M.P. Bleiweiss, D. DuBois. (2013). A Simplified high resolution MODIS Aerosol Retrieval Algorithm (SARA) for use over mixed surfaces. *Remote Sensing of Environment* 136:135-145 doi: 10.1016/j.rse.2013.04.014

Hernandez Escamilla, J.A, J.P. Flores Margez, M.F. Ramirez, N.R. Mendoza, M.D. Rios, M.K. Shukla, D. DuBois (2013). Articulo de investigacion, material particulado dispersado al aire en areas sin asfalto en Ciudad Juarez. *Ciencia en la Frontera: Revista de Ciencia y Tecnologia de la UACJ*, Vol. XI, pp. 9-14

Samani Majda, A.M., M. P. Bleiweiss, D. DuBois, M. K Shukla. (2013). Estimation of the fractional canopy cover of pecan orchards using Landsat 5 satellite data, aerial imagery, and orchard floor photographs. *International Journal of Remote Sensing* vol. 34, no. 16, 5937-5952

Chalbot, M,-C., I.G. Kavouras, and D.W. DuBois. Assessment of the contribution of wildfires on ozone concentrations in the central US-Mexico border region. (2013). *Journal of Aerosol and Air Quality Research*, 13, 838-848. doi: 10.4209/aaqr.2012.08.0232

Kavouras, I.G., D.W. DuBois, V. Etyemezian, and G. Nikolich (2013). Spatiotemporal variability of ground-level ozone and influence of smoke in Treasure Valley, Idaho. *Atmospheric Research*, volume 124, pp. 44-52

Kavouras, I.G., G. Nikolich, V. Etyemezian, D.W. DuBois, J. King, and D. Shafer (2012). In situ observations of soil minerals and organic matter in the early phases of prescribed fires. *Journal of Geophysical Research*, Vol. 117, D12313, 9 PP., 2012 doi:10.1029/2011JD017420

- Chen, L.-W.A., J.G. Watson, J.C. Chow, D. DuBois, and L. Herschberger. (2011). PM2.5 Source Apportionment in Minnesota, USA: Reconciling Receptor Models for Urban and Rural Monitoring Networks. *Journal of the Air & Waste Management Association*, 61(11): 1204-1217
- Koracin, D., R. Vellore, D.H. Lowenthal, J.G. Watson, J. Koracin, T. McCord, D.W. DuBois, L.-W. Antony Chen, N. Kumar, E.M. Knipping, N.J.M. Wheeler, K. Craig, and S. Reid (2011). Regional source identification using Lagrangian stochastic particle dispersion and HYSPLIT backward-trajectory models. *Journal of the Air & Waste Management Association*, 61(6): 660-672
- Chen, L.-W.A., J.G. Watson, J.C. Chow, D.W. DuBois, L. Herschberger. (2010) Chemical mass balance source apportionment for combined PM2.5 measurements from U.S. non-urban and urban long-term networks. *Atmospheric Environment*, 44: 4908-4918
- Kavouras, I.G., Etyemezian, V., DuBois, D.W. (2009) A geospatial screening tool to identify the sources of windblown dust. *Environmental Modelling and Software*, 24, 1003-1011.
- Kavouras, I.G., Etyemezian, V., DuBois, D.W., Xu, J., and Pitchford. M. (2009). Source reconciliation of atmospheric dust causing visibility impairment in Class I areas of the western United States. *Journal of Geophysical Research*, 114, D02308, doi:10.1029/2008JD009923.
- Kavouras, I.G., V. Etyemezian, J. Xu, D.W. DuBois, M. Green, and M. Pitchford. (2007). Assessment of the local windblown component of dust in the western United States. *Journal of Geophysical Research*, 112, doi:10.1029/2006JD007832, 2007.

Synergistic Activities:

- 2010 – Present As part of my duties as the New Mexico State Climatologist, I manage the NM Climate Center. Surface meteorological data from throughout the state of NM are warehoused at the center and available through the website, <http://weather.nmsu.edu>. I also manage a network of weather stations throughout the state of New Mexico. As the State Climatologist, I also maintain a regular schedule of outreach events and talks throughout New Mexico to educate people on climate.
- 2010 – Present Chair of the Drought Monitoring Workgroup for the NM Governor's Drought Task Force. This group meets once a month to discuss current status of the drought and communicate this to the Governor's staff and to the public. In this workgroup I collaborate with the National Weather Service, NM State Engineer's Office along with several other state and federal agencies to produce a monthly drought briefing.
- 2010 – Present Principal investigator of an air quality and respiratory health program for the NM Department of Health, Office of Border Health. The project focuses on southwestern New Mexico, Northwestern Chihuahua, and West Texas. This multidisciplinary and multi-institutional project strives to find an association between respiratory illnesses and air quality. A major emphasis has been on quantifying wind-blown dust and its effects on human health.
- 2011- Present New Mexico coordinator for the Community Collaborative Rain, Hail and Snow (CoCoRaHS) volunteer network. Being the state coordinator allows me to regularly interact with many volunteers willing to provide citizen science data for the community. I have an audience of several hundred people throughout the state that are interested in science.
- 1997 - Present Collaborator in a multi-institutional air quality research group. The group has used a wind tunnels, radar wind profiler, SODARs, a tethered balloon system,

weather stations, aerial trams, laser ceilometer, gas chromatographs, aerosol samplers, and particle sizers to understand the causes, sources, and three dimensional nature of pollutants in the atmosphere. Our research topics include regional haze, air toxics, ozone, wind-blown dust, biomass burning aerosols, and long-range transport of aerosols.

Recent Projects

Binational Border Region Air Quality Study, Office of Border Health, New Mexico Department of Health, 2010-2014, PI

Windblown dust emission inventory for southwestern NM, US EPA Region 6 through the New Mexico Environment Department, 2013-2014, PI

CLIMAS Air Quality and Climate Assessments for New Mexico, NOAA RISA Office through CLIMAS program, 2012-2015, PI

Columbus/Palomus Aerosol Saturation Study, US EPA Border 2012 through the NM Water Resources Research Institute, PI

The NM State Climate Office and CARSAME Portal for Community Access to Meteorological, Satellite, and Model Archives, Unidata, 2011, PI

Station history summaries for Cooperative stations in EPZ WFO region New Mexico, American Association for State Climatologists, 2011, PI

Binational Border Region Air Quality Study in the State of Chihuahua. USEPA Border 2012, 2011-2013, PI

An Assessment of Climate Variability and Air Quality in New Mexico, NOAA RISA Office through CLIMAS program, 2010-2012, PI

A Study of Sunland Park Low-Wind PM_{2.5} Exceedances, New Mexico Environment Department, Air Quality Bureau, 2009-2010, PI

Fire-Induced Changes of Soil Structure: Implications for Soil Hydraulic Properties and Coupled Erosion by Water and Wind, NSF-RAPID, 2009-2010, co-PI

Wildfire Effects on PM emissions from Contaminated Soils Sites, DOE, National Nuclear Security Administration, 2007-2009, co-PI

Summer 2007 Treasure Valley Ozone Precursor Study, Idaho DEQ, 2007-2008, co-PI

Unpaved Road Characterization in the Paso del Norte Region, US EPA Border 2012, 2007-2008, co-PI

WRAP Causes of Haze, Western Regional Air Partnership, 2004-2007, co-PI

Community Air Toxics Assessment for City of Albuquerque, US EPA Region 6, 2005-2009, co-PI

PM₁₀ Emission Inventory for Bernalillo County in 2005, City of Albuquerque, PI

Current Teaching Activities

Introduction to Air Pollution, ES 460

Applications of Remote Sensing for Environmental Monitoring, AGRO 500

Introduction to Climate and Climate Change, AGRO 598

Graduate Student Committees

4 MS and 1 PhD at NMSU, 1 MS at UACJ