David W. DuBois, Ph.D.
New Mexico State University
Department of Plant & Environmental Sciences
Las Cruces, NM

EDUCATION AND TRAINING

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

2016-present	State Climatologist, Associate College Professor, Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, NM
2010-2016	State Climatologist, Assistant College Professor, Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, NM
2009-2010	Associate Research Air Quality Scientist, Division of Atmospheric Sciences Desert Research Institute, Las Vegas, NV
2003-2009	Assistant Research Air Quality Scientist, Division of Atmospheric Sciences, Desert Research Institute, 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 and Emission Inventory Section, Air Quality Bureau, New Mexico Environment Department, Santa Fe, NM
1995-1999	Research Assistant, Desert Research Institute, Division of Atmospheric Sciences, Reno, NV
1991-1995	Associate Scientist, SciTec, Inc., Princeton, NJ

SYNERGISTIC ACTIVITIES

As the State Climatologist and Director of the New Mexico Climate Center, Dr. DuBois is the first contact person for climatic information in the state of New Mexico. Dr. DuBois oversees the collection, processing, and delivery of data from climate station databases in response to requests from users. He oversees and maintains a state-wide agricultural meteorological monitoring network as well as the former US Regional Climate Reference Network in New Mexico.

Dr. DuBois is involved in STEM outreach, citizen science, and climate literacy programs that includes being the New Mexico Community Collaborative Rain, Hail and Snow (CoCoRaHS) state coordinator. He is often called to give training workshops on climate and climate change to various groups at all age groups. He provides much of his outreach on social media to include Twitter (@nmclimate) and YouTube, https://youtube.com/nmclimate.

He currently a PI of a NM Department of Transportation project to monitor wind-blown dust hazards on a portion of I-10 in southwestern NM. The project involves monitoring dust and weather conditions across the Lordsburg playa and assess effectiveness of current and future dust mitigation work in that area. Includes work to build a dust storm early warning system.

He is a PI on the CLIMAS NOAA RISA program for Arizona and New Mexico addressing topics in drought, dust storm prediction, roadway dust hazards, and climatic impacts on human health and agriculture. Most recent project video, https://www.youtube.com/watch?v=ENylO-coRKg

Chairman of the New Mexico Drought Monitoring Workgroup. The workgroup meets monthly to discuss the status of the drought and identify any needs for action to the New Mexico State Engineer and Governor. Also contributes weekly to the US Drought Monitor in collaboration with the National Weather Service and other federal and state agencies.

TEACHING (last 5 years)
Introduction to Air Pollution, NMSU Environmental Sciences Program, ES 460 each year from 2011-present. This is an introductory course on air quality for both graduate and advanced undergraduate students and taught in a classroom setting.

Climate Change Strategies for a Changing World, NMSU Environmental Sciences Program, ES451/AGRO598/AGRO698. This course serves as an introduction for students to climate and climate change at the undergraduate and graduate level.

Two week summer courses taught at Universidad de La Salle, Bogotá, Colombia in 2016 and 2017. In 2016 I taught Water Security in a Changing Climate and in 2017 World Food Security: Elements of Climate and Climate Change. Both were for undergraduate students and taught in a classroom setting.

Remote Sensing for Environmental Monitoring, NMSU Environmental Sciences Program, AGRO 500 Special Topics. This is an introductory course covering the science of remote sensing and offers students practical experience in analyzing imagery.

STUDENT MENTORING (last 5 years)
Graduate Student Advising and Mentoring:
     NMSU, Environmental Science, 6 MS (5 graduated), 1 Ph.D. (graduated)
     NMSU, Computer Science, 1 Ph.D.
     Hong Kong Polytechnic University, 1 Ph.D. (graduated)
     Texas A&M Kingsville, 1 Ph.D.
     Universidad Autonoma de Ciudad Juarez, 1 MS, 1 Ph.D. (graduated)
Undergraduate Student Mentoring:
     NMSU, Environmental Science, 11 students

GRANTS AWARDED (last 5 years)
Co-PI Participatory Approaches to Agroecosystem Resillience in Times of Drought (ARID): An Example from the Southern Great Plains. USDA-NIFA, 2018-2021, $180K of $1.188M

PI   Understanding regional linkages between production agriculture, air quality and climate, US Department of Agriculture, Agricultural Research Services, 2018-2020, $43K

PI   Application of forensic hydrology to model weather conditions, New Mexico Department of Transportation, 2018-2019, $53K

PI   Along highway wind erosion mitigation for NMDOT District 1, New Mexico Department of Transportation, 2017-2020, $175K

PI   Upper basin weather station operation and maintenance, US Bureau of Reclamation, 2017-2020, $10K

PI   The 2017 El Paso Ozone Transport Field Study, El Paso Metropolitan Planning Organization, 2017-2018, $250K

PI   Operational data collection for the National Mesonet Program, Synoptic Data Corporation, Inc., 2015-2019, $40K/year

PI   Early Warning Sensor Network for Brown-out Conditions, Desert Research Institute, 2016-2018, $20K

PI   CLIMAS Air Quality and Climate Assessments for New Mexico, NOAA RISA Office, 2013-2020, $40K/year

Co-PI Ozone characterization and potential transport in the El Paso, Juarez, southern New Mexico airshed, El Paso MPO, 2015-2016, $65K

PI   Binational Border Region Air Quality Study, Office of Border Health, New Mexico Department of Health, 2014-2017, $431K, PI

PI   Windblown dust emission inventory for southwestern NM, US EPA through the New Mexico Environment Department, 2013-2014, $220K, PI

PUBLICATIONS (last 5 years)

Gonzalez-Delgado, A., Shukla, M. K., DuBois, D. W., Flores-Margez, J.P., Hernandez Escamilla, J.A., and Olivas, E. (2017). Microbial and size characterization of airborne particulate matter collected on sticky tapes along US-Mexico border. J. Environmental Science, 53: 207-216. http://dx.doi.org/10.1016/j.jes.2015.10.037

Kavouras, I.G., D.W. DuBois, G. Nikolich, A.Y. Corral Avittia, and V. Etyemezian. (2016). Particulate dust emission factors from unpaved roads in the U.S.-Mexico border semi-arid region. Journal of Arid Environments, 124: 189–192. http://dx.doi.org/10.1016/j.jaridenv.2015.07.015

Huang, H., R. Ye, M. Qi, X. Li, D.R. Miller, C.N. Stewart, D.W. DuBois and J. Wang. (2015). Wind-mediated horseweed (Conyza canadensis) gene flow: pollen emission, dispersion, and deposition. Ecology and Evolution, 5(13): 2646-2658. doi: 10.1002/ece3.1540

Kavouras, I.G., D.W. DuBois, G. Nikolich, and V. Etyemezian (2015). Monitoring, Source Identification and Health Risks of Air Toxics in Albuquerque, New Mexico, U.S.A. Aerosol and Air Quality Research, 15: 556–571, 2015. doi: 10.4209/aaqr.2014.04.0075

Vargas, V., M.-C. Chalbot, R. O'Brien, G. Nikolich, D.W. DuBois, V. Etyemezian, and I.G. Kavouras (2014). The effect of anthropogenic volatile organic compound sources on ozone in Boise, Idaho. Environmental Chemistry 11(4):445-458 doi: 10.1071/EN13150

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

Chalbot, M.-C., G. Nikolich, V. Etyemezian, D.W. DuBois, J. King, D. Shafer, G.G. da Costa, J.F. Hinton, and I.G. Kavouras (2013). Soil humic-like organic compounds in prescribed fire emissions using nuclear magnetic resonance spectroscopy. Environmental Pollution 181:167-171. doi: 10.1016/j.envpol.2013.06.008

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 technologia 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