

Reviewers

Chair and Reviewer:

Mr. Mark Nilles

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Theme 2: Air Quality

Mark Nilles is the National Program Manager of the U. S. Geological Survey, National Park Service Water Quality Partnership Program, USGS Atmospheric Deposition Program and the USGS Hydrologic Benchmark Network. His research interests focus on national and regional trends in precipitation chemistry and status and trends in surface water quality in undeveloped watersheds. He has published in *Atmospheric Environment*, *Water Air and Soil Pollution* and numerous USGS reports on trends in atmospheric deposition and quality assurance of national environmental monitoring networks. He serves on the Executive Committee of the interagency National Atmospheric Deposition Program (NADP), was chairperson of the NADP Executive Committee in 2009-2010, and chaired the NADP Budget Committee from 1996-2008. He is a Department of Interior representative to the CENR-Air Quality Research Subcommittee and to the National Acid Precipitation Assessment Program. He has over 25 years experience as a hydrologist, beginning his career with the USDA Forest Service (1984-1986), followed by 5 years with NOAA, National Weather Service - Lower Mississippi River Forecast Center (1986-1990) and has been with the U.S. Geological Survey since 1991. He began national program management responsibilities in 1996 for the USGS with management of the Atmospheric Deposition Program. He added responsibilities for the Hydrologic Benchmark Network, a national network of pristine undeveloped reference watersheds in 2003 and took on management of the USGS-National Park Service Water Quality Partnership in 2007. The three programs entail managing over \$4 million dollars annually of scientific research and environmental monitoring activity. Over 350 scientific publications have been produced from these programs.

Mr. James F. Bowers

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Theme 1: Atmospheric Dispersion and Boundary Layer

Mr. James Bowers is a meteorologist with over 35 years of experience in the development, evaluation/validation, and application of atmospheric transport and dispersion models. He holds BS and MS degrees in physics from Tulane University and studied meteorology at Texas A&M University. He has worked professionally as an Air Force weather officer, a private consultant, and a civil servant. Mr. Bowers retired from Federal Service in 2007 and currently works as a part-time consultant.

As an Army civilian, Mr. Bowers was Chief of the Meteorology Division at Dugway Proving Ground for over 21 years. He was Program Manager for operational meteorological support to all Army research, development, test and evaluation for 7 years. He was Chair of a 5-nation working group on chemical, biological, and radiological (CBR) hazard assessment for 10 years. Additionally, Mr. Bowers was Program Manager for the Army Test and Evaluation Command's Four-Dimensional Weather System from the program's inception in 1995 until his retirement from Federal service in 2007. He was also Technical Manager for the Defense Threat Reduction Agency's Urban Dispersion Modeling Program throughout that program's existence. Mr. Bowers provided overall scientific oversight or was principal investigator for most of the Department of Defense (DoD) field dispersion experiments conducted over the last 20 years, including the Long-Range Overwater Dispersion Experiment, Dipole Pride 26, the Mock Urban Setting Test, and FUSION Field Trial 2007. He also was a DoD member of both the management and science teams for Joint Urban 2003, the largest urban dispersion experiment ever conducted. Mr. Bowers has had a role in the verification and validation of every current DoD CBR hazard prediction and assessment system and was the lead scientist for the independent verification and validation of the D2-Puff model, the only hazard prediction model accredited for use at US chemical munitions storage and demilitarization sites. He is the technical author of the original version of the US Environmental Protection Agency's Industrial Source Complex Dispersion Model, the most widely used air quality model in the US for over 25 years, and the Army's Open Burn/Open Detonation Dispersion Model, the only air quality model specifically designed for application to the open burning and detonation of obsolete and unsafe munitions and rocket propellants.

Dr. Brian Lamb

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Theme 1: Atmospheric Dispersion and Boundary Layer

Dr. Brian Lamb is a Regent's Professor in the Department of Civil and Environmental Engineering at Washington State University (WSU). Dr. Lamb has been involved in atmospheric pollutant transport and dispersion studies for more than twenty five years. His involvement includes a combination of atmospheric tracer field studies and the development, evaluation, and application of a variety of air quality models. He received his Ph.D. in Chemical Engineering from California Institute of Technology In 1978. Currently, Dr. Lamb is directing the development of a real-time, urban air quality forecast system for the Pacific Northwest, as well as a project to investigate the effects of global change on regional air quality. Dr. Lamb has also directed the development of a smoke dispersion forecast system for agricultural field burning and a regional windblown dust air quality model for the Columbia Plateau region of eastern Washington. In related work, he has developed atmospheric tracer instrumentation—portable syringe samplers and real-time continuous tracer analyzers—which have been widely used at WSU and by others to probe the nature of pollutant transport and dispersion over scales ranging from a few meters to hundreds of kilometers. His recent studies involve the application of eddy flux and disjunct eddy accumulation methods. Dr. Lamb also directed WSU's participation in a significant field program to investigate emissions and air quality in Mexico City. This work included the first direct VOC flux measurements reported for an urban landscape.

Dr. Gregory Carmichael

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Theme 2: Air Quality

Dr. Gregory Carmichael is the Karl Kammermeyer Professor of Chemical and Biochemical Engineering at the University of Iowa. Dr. Carmichael is a nationally and internationally

recognized expert in air quality and atmospheric chemistry modeling. He obtained a B. S. in Chemical Engineering from Iowa State University in 1974 and a M.S. degree (1975) and Ph.D. degree (1979) in Chemical Engineering from the University of Kentucky. Dr. Carmichael serves as an Associate Dean of Graduate Programs and Research at Iowa and is Co-Director of the Center for Global and Regional Environmental Research. He has authored or co-authored over 280 publications. His research has included studies of acid deposition, regional-scale photochemical oxidant exposure, air quality impacts of global change, data assimilation, sensitivity analysis and air pollution control policy.

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Theme 3: Climate

Dr. Belay Demoz is an Associate Professor in the Department of Physics and Astronomy at Howard University in Washington, DC. He received his PhD from the University of Nevada and Desert Research Institute in Atmospheric Physics in 1992. Dr. Demoz has broad scientific and teaching experience that encompasses years of observational work in lidar remote sensing, radars and microwave radiometry, cloud physics and atmospheric chemistry. His focus is in integrating multi-instrument packages in tropospheric profiling both for winter storms, summer convection and atmospheric chemistry. He has worked for the private industry, the federal government, and academia. Dr. Demoz has organized and participated in numerous field observations; for many of which he has received numerous NASA performance/achievement awards. He Chairs the American Meteorological Societies Committee on Laser Application Studies and has organized and chaired numerous local, national and international meetings. He serves as Co-Editor of the Journal of Geophysical Research – Atmospheres, and is Associate Editor of the web-magazine: Earthzine.org. He has over sixty peer-reviewed publications and numerous presentations and invited talks on the subject of tropospheric profiling.

Dr. Ken Kunkel

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Theme 3: Climate

Dr. Ken Kunkel is the Executive Director of the Division of Atmospheric Sciences at the Desert Research Institute (DRI) in Reno, Nevada. His recent research has focused on climate variability and change, particularly related to extreme events, such as heavy precipitation, heat waves, cold waves, and winter storms. A particular focus has been the historical variations in the frequency and intensity of such extreme events extending from the late 19th Century to present. Prior to his position at DRI, Dr. Kunkel held a variety of positions at the Illinois State Water Survey, including Interim Chief; Director of the Midwestern Regional Climate Center; and Director of the Office of Applied Climatology. Dr. Kunkel holds a B.S. degree in physics from Southern Illinois University-Edwardsville and M.S. and Ph.D. (1978) degrees in Meteorology from the University of Wisconsin-Madison. He has performed research on atmospheric optical phenomena as a research meteorologist at the Atmospheric Sciences Laboratory at White Sands Missile Range. He also served as the New Mexico State Climatologist. Dr. Kunkel has published numerous articles in peer-reviewed scientific journals and he has written three book chapters and published numerous articles in the proceedings of scientific conferences and symposia. Due to his expertise, he has been a lead author on two recent reports of the U.S. Climate Change Program: Weather and Climate Extremes in a Changing Climate and Climate Models: An Assessment of Strengths and Limitations.