Eric M. Wilcox

Research Professor of Atmospheric Science
Director, Nevada NASA Space Grant and EPSCoR Programs

Desert Research Institute
Division of Atmospheric Sciences
2215 Raggio Parkway
Reno NV 89512

phone: (775) 673-7686
Eric.Wilcox@dri.edu
www.dri.edu/eric-wilcox

Research Interests

Dr. Wilcox's research addresses the interactions among aerosols, clouds, and precipitation towards a goal of improved understanding of precipitation, cloud variability and radiative forcing of climate at regional scales. This work relies on satellite and in-situ observations, as well as simulations with numerical models of the atmosphere and climate.

Dr. Wilcox manages DRI's atmospheric modeling group, which implements a wide range of numerical models, including fine-resolution atmospheric models for regional climate studies and applied research in water resources and renewable energy projects, air quality and chemistry models, and global coupled ocean/atmosphere climate models. Dr. Wilcox also leads the Airborne Systems Testing and Environmental Research (ASTER) Laboratory to facilitate the use of uncrewed aircraft for environmental research and serves as atmospheric research lead for DRI's Naval Earth Sciences and Engineering Program applying a range of measurements and models to the needs of the Navy, including targeted operational weather forecasting, weather observation optimization, particle dispersion modeling and applied atmospheric optics modeling. Dr. Wilcox teaches atmospheric physics and atmospheric modeling at the University of Nevada, Reno.

Professional Positions Held

2022 – present	Director, Nevada NASA Space Grant Consortium and Nevada NASA EPSCoR Programs.
2022 – present	Director, Airborne Systems Testing and Environmental Research (ASTER) Laboratory, DRI.
2019 – present	Research professor, Desert Research Institute, Reno, NV.
2011 – present	Graduate faculty, Interdisciplinary Atmospheric Science Program, Department of Physics, University of Nevada, Reno, NV.
2013 – 2019	Associate research professor, Desert Research Institute, Reno, NV.
2010 – 2013	Assistant research professor, Desert Research Institute, Reno, NV.
2005 – 2010	Physical scientist, National Aeronautics and Space Administration (NASA) Goddard Space Flight Center, Greenbelt, MD.
2003 – 2005	Visiting fellow of the NOAA Postdoctoral Program in Climate and Global Change, Princeton University Dept. of Geosciences Program in Atmospheric and Oceanic Sciences, and NOAA Geophysical Fluid Dynamics Laboratory, Princeton, NJ.
2002 – 2003	Postgraduate research atmospheric physicist, Center for Atmospheric Sciences, Scripps Institution of Oceanography, University of California, San Diego.
1996 – 2002	Graduate student researcher, Center for Atmospheric Sciences, Scripps Institution of Oceanography, University of California, San Diego.

Education

2002	Ph.D. Oceanography, Scripps Institution of Oceanography, University of California, San Diego.
1995	B.S. Physics, University of California, San Diego.

Teaching

Fall 2015, 2017, 2019, 2021	ATMS 746: Atmospheric modeling, University of Nevada, Reno, Dept. of Physics.
Fall 2011 - 2014, 2016	ATMS 411/611: Atmospheric physics, University of Nevada, Reno, Dept. of Physics.
Spring 2005	PHMS 210: Introduction to Marine Science, Montclair State University Dept. of Earth and Environmental Studies, Montclair, NJ.

Advising

Cheng-Hsiang Chang (Ph.D, current, co-advising); Stormi Noll (Ph.D., current); Marco Giordano (Ph.D., 2019); Lan Gao (Ph.D., 2018); Yunpeng Shan (Ph.D., 2018); Farnaz Hosseinpour (Ph.D., 2017); Yazeed Alsubhi (M.S., 2016); Kimberly Tran (high school intern, 2017-2018); James Condie (undergrad intern, 2016); Brandon Cottom (undergrad intern, 2009); Ryan Smith (high school intern, 2007-2008); Cody Fritz (undergrad intern, 2007). Serving or have served on 12 additional Ph.D. committees and 1 additional M.S. committee.

Field Campaigns

Winter, 2012	Co-P.I. CARDEX, Maldives Climate Observatory, Hanimaadhoo Island, Republic of the Maldives. Uninhabited aerial vehicle and surface observations of aerosol-cloud interactions in trade wind cumulus clouds.
Fall, 2008	VOCALS-Rex, Chile. Airborne remote sensing measurements of cloud microphysics.
Summer 2008	NASA ARCTAS joint deployment with Calif. Air Resources Board, California. Airborne remote sensing measurements of aerosols and the ocean surface reflectance.
Spring, 2004	Cloud Indirect Forcing Experiment (CIFEX), Northeast Pacific Ocean. Co-directed an airborne research experiment investigating aerosol-cloud interactions in mid-latitude oceanic low cloud systems. Principal flight scientist for six research flights in U. Wyoming King Air aircraft.
Winter, 1999	Indian Ocean Experiment (INDOEX), Kaashidhoo Climate Observatory, Republic of Maldives. Conducted radiosonde and surface radiative flux measurements.

Awards

2019 NASA Group Achievement Award for Observations of Aerosols Above Clouds and Their Interactions (ORACLES)

2016 Graduate Advisor of the Year, Desert Research Institute

2007 NASA GSFC Laboratory for Atmospheres scientific recognition peer award.

2003 - 2005 NOAA Climate and Global Change Postdoctoral Fellowship.

2001 Best Student Poster Award, 11th American Meteorological Society Conference on Satellite Meteorology and Oceanography.

1998 Universities Space Research Association/NASA Graduate Student Summer Program Fellowship, Goddard Space Flight Center, Maryland.

1994 University of California President's Undergraduate Research Fellowship.

Peer-Reviewed Publications

Yuan, T., H. Song, R. Wood, C. Wang, L. Oreopoulos, S. Platnick, S. von Hippel, K. Meyer, S. Light, **E. M. Wilcox**, Global Reduction in Ship-tracks from Sulfur Regulations for Shipping Fuel, *Science Advances,* vol. 8, iss.29, doi:10.1126/sciadv.abn7988, 2022.

Lu, Z., J. Wang, X. Xu, X. Chen, S. Kondragunta, O. Torres, **E. M. Wilcox**, Hourly mapping of the layer height of thick smoke plumes over the Western U.S. in 2020 severe fire season. *Frontiers in Remote Sensing*, 2:766628, doi:10.3389/frsen.2021.766628, 2021.

Shan, Y., **E. M. Wilcox,** L. Gao, L. Lin, D. L. Mitchell, Y. Yin, T. Zhao, L. Zhang, H. Shi and M. Gao, Evaluating Errors in Gamma-Function Representations of the Raindrop Size Distribution: A Method for Determining the Optimal Parameter Set for Use in Bulk Microphysics Schemes. *J. Atmos. Sci.*, 77, 513–529, https://doi.org/10.1175/JAS-D-18-0259.1, 2020.

Nelson, K. N., J. M. Boehmler, A. Y. Klystov, H. Moosmüller, V. Samburova, **E. M. Wilcox**, A. C. Watts, A smoke emissions sensing and sampling instrument package for small unmanned aircraft systems: development and testing, *Fire*, 2, doi:10.3390/fire2020032, 2019.

Spencer, R. S., R. C. Levy, L. A. Remer, S. Mattoo, D. L. Hlavka, G. T. Arnold, S. E. Platnick, A. Marchak, and **E. M. Wilcox**, Exploring aerosols near clouds with high-spatial-resolution aircraft remote sensing during SEAC^{4}RS, *J. Geophys. Res.*, 124, doi:10.1029/2018JD028989, 2019.

Xu, X., J. Wang, J. Zeng, W. Hou, K. G. Meyer, S. E. Platnick, and **E. M. Wilcox**, A pilot study of shortwave spectral fingerprints of smoke aerosols above liquid clouds, *J. Quant. Spectroscopy and Radiative Transfer*, 221, 38-50, doi:10.1016/j.jqsrt.2018.09.024, 2018.

Mejia, J. F., D. Koračin, and **E. M. Wilcox**, Effect of Coupled GCM SST Biases on Simulated Climate of the Western U.S., *Intl. J. Climatol.*, 1-19, doi:10.1002/joc.5817, 2018.

Mejia, J. F., M. Giordano, and **E. M. Wilcox**, Conditional Summertime Day-Ahead Solar Irradiance Forecast, *Solar Energy*, 163, 610-622, doi:10.1016/j.solener.2018.01.094, 2018.

Wilcox, E. M., Multi-spectral remote sensing of sea fog with simultaneous passive infrared and microwave sensors, in *Marine Fog: Challenges and Advancements in Observations, Modeling, and Forecasting*, D. Koračin and C. Dorman, eds., Springer Intl., 511-526, doi:10.1007/978-3-319-45229-6_11, 2017.

Wilcox, E. M., R. M. Thomas, P. S. Praveen, K. Pistone, F. A.-M. Bender, and V. Ramanathan, Black carbon solar absorption suppresses turbulence in the atmospheric boundary layer, *Proc. Nat. Acad. Sci.*, 113, 11794-11799, doi:10.1073/pnas.1525746113, 2016.

Ichoku, C., L. T. Ellison, K. E. Willmot, T. Matsui, A. K. Dezfuli, C. K. Gatebe, J. Wang, **E. M. Wilcox**, J. Lee, J. Adegoke, C. Okonkwo, J. Bolton, F. S. Policelli, and S. Habib, Biomass burning, land-cover change, and the hydrological cycle in Northern sub-Saharan Africa, *Environ. Res. Lett.*, 11, doi:10.1088/1748-9326/11/9/095005, 2016.

Thompson, D. R., I. B. McCubbin, B. Gao, R. O. Green, A. A. Matthews, F. Mei, K. G. Meyer, S. Platnick, B. Schmid, J. Tomlinson and **E. M. Wilcox**, Characterization of liquid and ice clouds with shortwave infrared imaging spectroscopy, *J. Geophys. Res*, 121, 9174–9190, doi:10.1002/2016JD024999, 2016.

C.E. Chung, A. Lewinschal, A. and **E. M. Wilcox**, Relationship between low-cloud presence and the amount of overlying aerosols, *Atmos. Chem. Phys.,* 16, 5781-5792, doi:10.5194/acp-16-5781-2016, 2016.

Pistone, K., P. Praveen, R. Thomas, V. Ramanathan, **E. M. Wilcox** and F. Bender, Observed correlations between aerosol and cloud properties in an Indian Ocean trade cumulus regime, *Atmos. Chem. and Phys.,* 16, 5203-5227, doi:10.5194/acp-16-5203-2016, 2016.

Hosseinpour, F. and **E. M. Wilcox**, Aerosol interactions with African/Atlantic climate dynamics. *Environ. Res. Lett.*, 9, doi:10.1088/1748-9326/9/7/075004, 2014.

Gatebe, C. K., C. Ichoku, R. Poudyal, M. Roman, and **E. M. Wilcox**, Surface albedo darkening from wildfires in Northern Sub-Saharan Africa. *Environ. Res. Lett.*, 9, doi:10.1088/1748-9326/9/6/065003, 2014.

Koračin D., C. Dorman, J. Lewis, J. Hudson, **E. M. Wilcox**, and A. Torregrosa, Marine Fog: A Review. *Atmos. Res.*, 143, 142-175, doi:10.1016/j.atmosres.2013.12.012, 2014.

Chakrabarty, R., M. Garro, **E. M. Wilcox**, and H. Moosmüller, Strong Radiative Heating due to Wintertime Black Carbon Aerosols in the Brahmaputra River Valley. *Geophys. Res. Lett.*, 39, L09804, doi:10.1029/2012GL051148, 2012.

Wilcox, E. M., Direct and semi-direct radiative forcing of smoke aerosols over clouds. *Atmos. Chem. Phys.*, 12, 139-149, doi:10.5194/acp-12-139-2012, 2012.

Gatebe, C. K., **E. M. Wilcox**, R. Poudyal, and J. Wang, Effects of ship wakes on ocean brightness and radiative forcing over ocean. *Geophys. Res. Lett.*, 38, L17702, doi:10.1029/2011GL048819, 2011.

Wilcox, E. M., Stratocumulus cloud thickening beneath layers of absorbing smoke aerosol. *Atmos. Chem. Phys.*, 10, 11769-11777, doi:10.5194/acp-10-11769-2010, 2010.

Wilcox, E. M., K. M. Lau, and K.-M. Kim, A Northward Shift of the North Atlantic Ocean Intertropical Convergence Zone in Response to Summertime Saharan Dust Outbreaks. *Geophys. Res. Lett.*, 37, L04804, doi:10.1029/2009GL041774, 2010.

Y. C. Sud, **E. M. Wilcox**, K. M. Lau, G. K. Walker X.-H. Liu, A. Nenes, D. Lee, K.-M. Kim, Y. Zhou, and P. S. Bhattacharjee, Sensitivity of Boreal-Summer Circulation and Precipitation to Atmospheric Aerosols in Selected Regions, Part I: Africa and India. *Annales Geophysicae.* **27**, 3989-4007, doi:10.5194/angeo-27-3989-2009, 2009.

Wilcox, E. M., Y. C. Sud, and G. Walker, Sensitivity of Boreal-Summer Circulation and Precipitation to Atmospheric Aerosols in Selected Regions, Part II: The Americas. *Annales Geophysicae*. **27**, 4009-4021, doi: 10.5194/angeo-27-4009-2009, 2009.

Wilcox, E. M., Harshvardhan, and S. Platnick, Estimate of the Impact of Absorbing Aerosol over Cloud on the MODIS Retrievals of Cloud Optical Thickness and Effective Radius Using Two Independent Retrievals of Liquid Water Path, *J. Geophys. Res.*, **114**, D05210, doi:10.1029/2008JD010589, 2009.

Wilcox, E. M. and L. J. Donner, The Frequency of Extreme Rain Events in Satellite Observations and an Atmospheric General Circulation Model. *J. Climate*, **20**, 53-69, doi:10.1175/JCLI3987.1, 2007.

Wilcox, E. M., G. Roberts, and V. Ramanathan, Influence of aerosols on the shortwave cloud radiative forcing from north Pacific Oceanic Clouds: Results from the Cloud Indirect Forcing Experiment (CIFEX). *Geophys. Res. Lett.,* **33**, L21804, doi:10.1029/2006GL027150, 2006.

Wilcox, E. M. and V. Ramanathan, The Impact of Observed Precipitation upon the Transport of Aerosols from South Asia. *Tellus* **56B**, 435-450, doi:10.1111/j.1600-0889.2004.00121.x, 2004.

Wilcox, E. M., Spatial and Temporal Scales of Precipitating Tropical Cloud Systems in Satellite Imagery and the NCAR CCM3. *J. Climate*, **16**, pp. 3545-3559, 2003.

Wilcox, E. M. and V. Ramanathan, Scale Dependence of the Thermodynamic Forcing of Tropical Monsoon Clouds: Results from TRMM Observations. *J. Climate*, **14**, pp. 1511-1524, 2001.

Hellman, F., M. Q. Tran, A. E. Gebala, **E. M. Wilcox** and R. C. Dynes, Metal-Insulator Transition and Giant Negative Magnetoresistance in Amorphous Magnetic Rare Earth Silicon Alloys. *Phys. Rev. Lett.*, **77**, pp. 4652-4655, doi:10.1103/PhysRevLett.77.465, 1996.

Books

Wilcox, E. M. *Clouds*, Duncan Baird Publishers, London, U.K., 2008. A general interest descriptive book about clouds including a technical glossary.

Other publications

Aznavi, S., P. Fajri, E. M. Wilcox and M. B. Shadmand, Risk Assessment of Smart Buildings Equipped with Solar Generation Using Information Gap Decision Theory. In *2020 IEEE Energy Conversion Congress and Exposition (ECCE)* (pp. 2142-2147). IEEE, doi:10.1109/ECCE44975.2020.9235433, 2020.

Mejia, J. F., **E. M. Wilcox**, S. Rayne, and E. Mosadegh, *Vehicle Miles Traveled Review*, prepared for the Lake Tahoe Science Advisory Council Threshold Update and the Lake Tahoe Regional Planning Authority, July 2018.

Ramanathan, V., R. M. Thomas, H. V. Nguyen, **E. M. Wilcox**, F. Bender, and K. Pistone, *Cloud Aerosol Radiative Forcing Dynamics EXperiment. Field project overview document*. Available at: http://www-ramanathan.ucsd.edu/files/CARDEX_prop_rev_Jun_2011.pdf, 2011.

Koračin D., J. K, Koračin, A. Gertler, T. McCord, A. Jericevic, J. Mejia and **E. M. Wilcox**, Ozone modeling system and emission control strategies for the Lake Tahoe basin, prepared for the USDA Forest Service Pacific Southwest Research Station, 2014.

Wilcox, E. M., Spatial and Temporal Scales of Precipitating Tropical Cloud Systems. Ph.D. Dissertation, University of California, San Diego, 2002.

Research grants

"Quantifying variations in atmospheric temperature from light-absorbing aerosols", NASA Science of Terra, Aqua, Soumi NPP Program, 2021-2024 $273K/year 0.25 FTE as **P.I.**

"Impacts of atmospheric water vapor on radiative and dynamic aerosol effects in stratocumulus regimes", NASA Atmospheric Composition Campaign Data Analysis and Modeling Program, 2021-2024, $100K/year (PI: K. Pistone, BAERI and NASA Ames Research Center) 0.2 FTE as **Co.-I.**

"A Comprehensive Data Record of Marine Low-level and Deep Convective Cloud Systems Using an Object-Oriented Approach", NASA MEaSUREs Program, 2018-2023 $130K/year (PI: T. Yuan, U. Maryland Baltimore Co.) 0.2 FTE as **Co.-I.**

"A Study of Atmospheric Heating by Black Carbon Aerosols and its Impacts", NASA Science of Terra, Aqua and Suomi NPP Program, 2018-2020 $250K/year 0.25 FTE as **P.I.**

"Toward Rapid development of Novel Instrumentation for Aerosols and Clouds in the Sparsely Observed Basin and Range", DRI Foundation's Innovation Research Program, 2018-2019 $35K 0.05 FTE as **P.I.**

"Development of a Multi-Spectral Irradiance Monitor for Rapid Deployment Aerosol Measurement in Complex Terrains", NASA EPSCoR Research Infrastructure, 2016-2017 $100K 0.1 FTE as **P.I.**

"Studying aerosol/cloud fields using MAS data from SEAC4RS and previous field campaigns", NASA Atmospheric Composition Program, 2014-2017, Total award amount $142K/year (PI: R. Levy, NASA GSFC), 0.1 FTE as **Co.-I.**

"Amplified study of the interactions and feedbacks between biomass burning and water cycle dynamics across the northern sub-Saharan African region", NASA Interdisciplinary Sciences Program, 2014-2016. Total award amount $1.5M (PI: C. Ichoku, NASA GSFC), 0.2 FTE as **Co.-I.**

"Sierra Snow and Inter-Continental Dust Transport: A Test of the IBM PureData System for Large-Volume Satellite Data Analytics" Desert Research Institute internal project development fund, 2013, total award amount: $17K, 0.1 FTE as **P.I.**

"Characterization of North Africa Aerosols and Precipitation Patterns Influencing Egyptian Climatology" USAID US-Egypt Board on Scientific and Technological Cooperation grant administered by US Dept. of Agriculture, 2012-2014. Total award amount: $250K (PI: S. Habib, NASA GSFC) 0.1 FTE as **Co.-I**.

"Integrating NASA Earth Science Data into Secondary-level STEM Education" Nevada NASA Space Grant Consortium, 2011-2012. Total award amount: $12,500 (PI: T. Wall, Desert Research Institute) 0.05 FTE as **Co.-P.I.**

"A multi-spectral approach to evaluating the response of deep organized convection to aerosols". NASA Science of Terra and Aqua Program, 2011-2014. Total award amount: $170K/year, 0.5 FTE as **P.I.**

"Impacts of free-tropospheric smoke and humidity on the interactions between stratocumulus clouds and aerosols". NASA Radiation Sciences Program, 2010-2011. Total award amount: $62K. 0.4 FTE as **P.I.**

"Interactions and feedbacks between biomass burning and water cycle dynamics across the northern sub-Saharan African region". NASA Interdisciplinary Sciences Program, 2011-2014 (PI: C. Ichoku, NASA GSFC), 0.2 FTE as **Co.-I.**

"Multispectral Scanner for BRDF, Albedo, Clouds and Aerosols: MSBACA", NASA GSFC Internal Research and Development program, 2009-2010. Total award amount: $145K. 0.1 FTE as **P.I.**

"Microphysical and Radiative Parameterizations of Aerosol-Cloud Interactions for Assessing Aerosol-Climate Connections with NASA GEOS-5 GCM Simulations". NASA Modeling and Analysis Program, 2009-2012; (PI: L. Oriaopoulos, NASA GSFC). Total award amount: $250K/year, 0.2 FTE as **Co.-I.**

"Understanding Constraints on Aerosol-Cloud Interactions in A-Train Observations", NASA EOS Terra/Aqua/Acrimsat Research program, 2008-2010. Total award amount: $175K/year; 0.5 FTE as **P.I.**

"Aerosol-Monsoon Water Cycle Interactions", NASA Interdisciplinary research; 2007-2010; (PI. K. M. Lau, NASA GSFC). Total award amount: $600K/year; 0.2 FTE as **Co.-I.**

"Multiple factors affecting the Africa Easterly Jet and Cyclogenisis over the Tropical Atlantic". NASA AMMA program, 2006-2009 (PI: K. M. Lau, NASA GSFC). Total award amount: $250K/year, 0.2 FTE as **Co.-I**.

"The Cloud Indirect Forcing Experiment (CIFEX)", NSF deployment of U. Wyoming King Air, 2004 (PI: V. Ramanathan, UCSD), Total award amount: $165K. Role: **Co.-PI**.

Invited Lectures

"Batteries included", Science Distilled public lecture series, Reno, NV April 26, 2017.

"Semi-direct effects of black carbon aerosols on low clouds: Mechanisms for climate cooling", Aerosols and Clouds: Connections from the Laboratory to the Field to the Globe, Telluride Science Research Center Conference, Telluride, CO, June 30, 2016.

"Semi-direct Effects of Aerosols on Low Clouds: Mechanisms for Climate Cooling by Black Carbon Aerosols", Invited talk in the 8th Symposium on Aerosol–Cloud–Climate Interactions at the American Meteorological Society Annual Meeting, New Orleans, LA, January 12, 2016.

"Observations of aerosol semi-direct effects at multiple scales". Invited talk in session A06: Impact of Tropospheric Aerosol on Global and Regional Climate at 2013 American Geophysical Union Meeting of the Americas, Cancún, Mexico, May 17, 2013.

"Physical connections between atmospheric visibility and regional climate change", Plenary session Air and Waste Management Association Visibility and Air Pollution Meeting, Whitefish, MT September 25, 2012.

"Integrated observations from MODIS and the A-Train for understanding aerosol effects on the environment", Plenary session 2012 NASA MODIS Science Team Meeting, Silver Spring, MD May 8, 2012.

"Sooty action at a distance: Remote effects of soot and dust on clouds and climate", University of Nevada, Reno, Dept. of Physics Colloquium, Reno, NV, September 30, 2011.

"Aerosols near clouds: the response of clouds and convection to aerosol heating", 2011 Gordon Research Conference on Radiation and Climate, Colby College, Waterville, ME, July 12, 2011.

"Aerosol direct and indirect effects over the Southeast Atlantic Ocean", Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical Atlantic, sponsored by CLIVAR, University of Miami, March 23-25, 2011.

"The relative effects of greenhouse gas and aerosol forcing on mountain glacier melt in the Himalaya", NASA Goddard Space Flight Center, Greenbelt, MD, December 1, 2010.

"Climate model predictions of changes in extreme rain events and satellite observations of cumulus convection", Desert Research Institute, Reno, NV, November 8, 2009.

"Strategies for testing model parameterization of aerosol-cloud interactions for global models", 8th international Aerocom workshop, Princeton NJ, October 7, 2009.

"NASA Satellite Data for Disaster and Water Resources Management and Science", The Global Water Initiative workshop: Implications of regional climate variability on water resources in Africa. University of Cambridge, UK, September 21-23, 2009.

"Satellite observations of deep cumulus convection and GCM predictions of changes in extreme rain events", California Institute of Technology, NASA Jet Propulsion Laboratory, and UCLA Dept. of Atmospheric and Oceanic Science, October 7-10, 2008.

"NASA: Not Just Sending Astronauts into Space. Looking Back at the Home Planet", Squaw Valley Institute, Olympic Valley CA, July 10, 2007.

"Testing Climate Model Representations of Atmospheric Physics using Satellite and Aircraft Observations". University of Wyoming Dept. of Atmospheric Science, October 21, 2004.

"Rainfall, Convection and Aerosol Transport in Climate Models and Satellite Observations". NASA Goddard Space Flight Center, Greenbelt Maryland, August 31, 2004.

"How Well Do Global Climate Models Simulate Rain?" 2004 NOAA/UCAR Climate and Global Change Summer Institute, Steamboat Springs, Colorado, July 20, 2004.

"Spatial Scales of Tropical Cloud Systems and Their Impact on the Atmospheric Environment". Geophysical Fluid Dynamics Laboratory, Princeton University, January 23, 2003.

"Satellite Observations of the Spatio-Temporal Scales of Tropical Cloud Systems: Implications for the Parameterization of Aerosol Scavenging". Max Planck Institute for Chemistry, Mainz Germany, May 29, 2002.

Media Coverage

Nature Geoscience: http://www.nature.com/ngeo/journal/v3/n3/full/ngeo819.html
Time Magazine:
http://www.time.com/time/health/article/0,8599,1938379,00.html
http://www.time.com/time/specials/packages/article/0,28804,1929071_1929070_1945667,00.html
New Scientist Magazine:
http://www.newscientist.com/article/mg21128265.600-foamy-wakes-cool-the-world-ships-dont.html

Professional Activities

Chair, DRI Faculty Senate (2020 - 2021)
Vice-chair, DRI Faculty Senate (2019 - 2020)
DRI Faculty Senator (2018 - 2021)
Associate Director, Nevada NASA Space Grant Consortium (2015 - 2022)
Associate Editor, *Journal of the Atmospheric Sciences* (2013 - 2022)
Guest editor, Special issue: Multi-instrument Remote Sensing of Aerosol-Cloud Interactions, in the journal *Frontiers in Remote Sensing* (2022 - present)
Member representative for the Nevada System of Higher Education to the University Corporation for Atmospheric Research (2011 - present)
Member Nevada NASA Technical Advisory Committee (2016 - 2022)
Member of the NASA MODIS Science Team (2008 - 2014, 2018 - present)
Member of the Users Working Group for the NASA Level-1 Atmosphere Archive & Distribution System (2019 - present)
Convener of multiple sessions, American Geophysical Union Fall Meeting, December 2011, 2012 and 2013.
Reviewer of manuscripts for *Journal of Climate, Nature Geoscience, Quarterly Journal of the Royal Meteorological Society, Proceedings of the National Academy of Sciences, Atmospheric Chemistry and Physics, Geophysical Research Letters, Journal of Geophysical Research - Atmospheres, Atmospheric Research, Atmospheric Measurement Techniques, Remote Sensing of Environment, Applied Optics.*
Reviewer of proposals for NSF, NASA, DOE, and NOAA Office of Global Programs, Israel Science Foundation, Netherlands Organization for Scientific Research, and Chilean National Science and Technology Commission.

Scientific judge: National Ocean Sciences Bowl regional and national competition (2003)
Associate Editor, Journal of the Environment and Development (1998)
Scripps Inst. Oceanography Ad-hoc Student Committee for Faculty Evaluations (1996 - 1999)
Climate Sciences student representative: Scripps Inst. Oceanography Student Committee (1996 - 1999)
Member of the American Meteorological Society
Member of the American Geophysical Union

Extracurricular Activities

Chair, NV Commission for Persons Who are Deaf and Hard of Hearing (2021 - present)
Vice-chair, NV Commission for Persons Who are Deaf and Hard of Hearing (2019 - 2021)
Member, NV Commission for Persons Who are Deaf and Hard of Hearing (2018 - present)
President and chair of executive committee, Board of directors, Nevada Hands & Voices (2016 - 2021)
Director, Board of directors, Nevada Hands & Voices (2014 - 2016)
Advisory Board member, Hands & Voices Family Leadership in Language and Learning Center (2020 - present)
Four-time US National Champion crewman, Snipe yachting class, and four-time US national team member at the Snipe yachting class World Championship.