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Education

Massachusetts Institute of Technology
Ph.D. in Meteorology awarded February 1998.
Thesis under Professor R.S. Lindzen on ``Implications of Potential Vorticity Homogenization for Climate and Climate Sensitivity." Developed an energy balance model of the earth's climate based on an assumption of partial homogenization of potential vorticity along isentropes in the earth's atmosphere. Analyzed tropical sounding data to investigate the magnitude of convective available convective energy variations on annual and interannual time scales. National Science Foundation Graduate Fellow, 1991-1993. MIT Charney Prize recipient, 1991.

Yale University
B.S. magna cum laude, with honors in Geology and Geophysics, June, 1990.
Senior thesis on calculation of air-sea energy fluxes using data from ERICA field experiment.

Employment

MDA Information Systems LLC
February 2010 — Present
Chief Scientist, Climate and Weather Services
Developed and brought to market wind power forecasting for all North American and several European ISO/RTO's and for individual wind farms world-wide. Supervised development of solar generation forecasts. Developed wind power climatology product. Monthly climate science/policy newsletter; provide climate science consulting services including presentations, phone consultation, written reports. Lead USTDA-funded feasibility study for modernizing the Uganda Department of Meteorology. Supervised senior scientist and subcontractor staff of four.

University of Maryland, College Park
Department of Meteorology
August, 2012-Present, Adj. Assoc. Professor,
February 2010 — 2012, Adj. Asst. Professor
January 2003—January, 2010, Assistant Professor
Developed and taught graduate course on Boundary Layer Meteorology, undergraduate courses Weather and Climate, and Meteorology for Scientists and Engineers. Research topics include wind power interactions with weather and climate, satellite climate monitoring from space, satellite diagnosis of climate dynamics, stratospheric water vapor, dynamics of Messinian and Eocene climate, and ozone-climate connections. Approximately $500,000 research funding raised.

Harvard University
September 2000---December 2002, Research Associate
September 1997 --- August 2000, Post-doctoral Fellow,
Division of Engineering and Applied Science. Modeling of stratospheric water vapor budget. Retrieval of HDO by solar absorption spectrometry. Paleocliamte modeling. Mission planning and meteorological support for the Clouds and Radiation Experiment at the Tropical Tropopause (CARETT), flown from Costa Rica in summer, 2001.

Selected Peer-reviewed publications

Zeng, N., A.W. King, B. Zaitchik, S.D. Wullschleger, J. Gregg, S. Wang, D. Kirk-Davidoff, 2012: Carbon sequestration via wood harvest and storage: an assessment of its harvest potential. *Climatic Change,* doi:10.1007/s10584-012-0624-0
Wielicki B.A., et al., 2013: Achieving Climate Change Absolute Accuracy in Orbit. *BAMS,*

doi:10.1175/BAMS-D-12-00149.1

Barrie, D., D.B. Kirk-Davidof, 2010: Weather response to a large wind turbine array. *Atmos. Chem. Phys.*, 10, 769-775.

Murphy, L.N., D.B. Kirk-Davidoff, N. Mahowald, B. Otto-Bliesner, 2009: Climate Implications of the Messinian Salinity Crisis using the NCAR Community Atmosphere Model (CAM3.1). *Palaeogeography, Palaeoclimatology, Palaeoecology.***279**:41-59.

Kirk-Davidoff, D.B., J.-F. Lamarque, 2008: Maintenance of polar stratospheric clouds in a moist stratosphere. *Climate of the Past*,**4**:69-78.

Kirk-Davidoff, D.B., and D.W. Keith, 2008: On the climate impact of surface roughness anomalies. *J. Atmos. Sci*., **65**:2215-2234

Kirk-Davidoff, D.B., R.M. Goody, and J.G. Anderson, 2004: Analysis of sampling errors for climate monitoring satellites. In press at *J. Climate.*

Anderson, J.G., R.M. Goody, J. Dykema, X.Huang, D.B. Kirk-Davidoff, 2004: Absolute spectrally resolved radiance: a benchmark for climate monitoring from space. *J.Q.S.R.T.,* **85:**367-383.

Kirk-Davidoff, D.B., D.P. Schrag, and J.G. Anderson, 2002: On the feedback of stratospheric clouds on polar climate. *Geophys. Res. Letts.,* **29** doi:10.1029/2002GL014659.

Kirk-Davidoff, D.B., and R.S. Lindzen, 2000: An Energy Balance Model of the Atmosphere Based on Potential Vorticity Homogenization. *Journal of Climate,* **13**:431-448.

Kirk-Davidoff, D.B., J.G. Anderson, E.J. Hintsa, and D.W. Keith, 1999:The effect of climate change on ozone depletion through stratospheric water vapor. *Nature,* **402**:399-402.

Non-peer-reviewed articles

Kirk-Davidoff, D.B., 2013: Alternative energy: Plenty of wind. *Nature Climate Change,* **3**:99-100.

Kirk-Davidoff, D.B., 2012: Wind Power Forecasting. *Wind Systems,* http://windsystemsmag.com/article/detail/355/wind-power-forecasting

Kirk-Davidoff, D.B.. 2006: The Science and Ethics of Global Warming. *The Faculty Voice.* **19**:(4)4 **.** College Park, MD.

Kirk-Davidoff, D.B., 2008: Review of Climate Change: A Multidisciplinary Approach, by W.J. Burroughs. Accepted for publication in *EOS.*

Battisti, D., W.E. Easterling, C. Field, I. Fung, J.E. Hansen, J. Harte, E. Kalnay, D. Kirk-Davidoff, P.A. Matson, J.C. McWilliams, M.J. Molina, J.T. Overpeck, F.S. Rowland, J. Russell, S.R. Saleska, E. Sarachick, J.M. Wallace, S.C. Wofsy, 2006: Brief of Amici Curiae Climate Scientists, No. 05-1120 in the Supreme Court of the United States, Commonwealth of Massachusetts et al. v. U.S. Environmental Protection Agency et al.

Media Interviews

Baltimore Sun, Feb 4, 2007, "Is this Baltimore's Future"

NPR interview with Elizabeth Shogren: "Has the Move to Make Greener Cars Stalled?" All Things Considered, November 29, 2006

NPR interview with Richard Harris: "Air over Antarctica is Warming, British Scientists Say." All Things Considered, March 30, 2006

Collaborators

Prof. James Anderson, Harvard University; Prof. David Keith, University of Calgary; Prof. Natalie Mahowald, Cornell University; Prof. Daniel Schrag, Harvard University; Prof. Costas Varotsos, University of Athens.; Dr. Jean-Francois Lamarque, National Center for Atmospheric Research; Dr. Daniel Barrie, NOAA Climate Program Office.

Service Activities

Editor, Earth System Dynamics

I am a frequent reviewer for the National Science Foundation, and for the Journal of Geophysical Research, Geophysical Research Letters, and Climatic Change.

Secretary of the Columbia Association Watershed Advisory Commission, Columbia, MD.

Member of the Center for Integrative Environmental Research and of the Maryland Energy Research Center at the University of Maryland. I was a founding member of the Commission on Energy Use and Climate Change of the City of Somerville, Massachusetts.

Honors and Awards

Dean's Award for Excellence in Teaching, University of Maryland, College Park, College of Computer, Mathematical and Physical Sciences. Awarded May, 2007.

Next Generation Fellow of the American Assembly.