

Alan Robock

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EDUCATION:

B.A. in Meteorology, 1970

University of Wisconsin, Madison

Honors: Phi Eta Sigma, Phi Kappa Phi, Honors Program, Graduated with Distinction

S.M. in Meteorology, 1974

Massachusetts Institute of Technology

Thesis: "Spin-down of a Stratified, Rotating Fluid"

Advisor: Norman A. Phillips

Ph.D. in Meteorology, 1977

Massachusetts Institute of Technology

Dissertation: "Climate Predictability and Simulation with a Global Climate Model"

Advisor: Edward N. Lorenz

Honors: NSF Graduate Fellow, Sigma Xi

EXPERIENCE:

Distinguished Professor, Department of Environmental Sciences, Rutgers University, July, 2003 – present. (Professor, January, 1998 – June, 2003)

Director, Meteorology Undergraduate Program, Rutgers University, July, 2006 – June, 2015.

Professor, Dept. of Meteorology, Univ. of Maryland, July, 1996 – December, 1997. (Assistant Professor, August, 1977 – June, 1982; Associate Professor, July, 1982 – June, 1996)

Maryland State Climatologist, January, 1991 – December, 1997.

Editor, *Reviews of Geophysics*, July, 2010 – December, 2018. (Associate Editor, Sept., 1994 – Dec., 2000, February, 2006 – June, 2010, January, 2019 - present).

Editor, *Journal of Geophysical Research-Atmospheres*, April, 2000 – March, 2005.

(Associate Editor, November, 1998 – April, 2000, February, 2013 – December, 2015)

Editor, *Journal of Climate and Applied Meteorology*, January, 1985 – December, 1987.

AAAS Congressional Science Fellow (Legislative Assistant, Congressman Bill Green (NY); and Research Fellow, Environmental and Energy Study Conf.), September, 1986 – August, 1987.

Research Scientist, Atm. Sci. Group, Lawrence Livermore Lab., California, Summer, 1973.

Peace Corps Volunteer, Philippines, 1970 – 1972. (Developed curricula and trained teachers of meteorology in the fishery vocational colleges.)

HONORS:

Elected Fellow, American Meteorological Society, 1998.

Antarctic Service Medal of the United States of America, March 1, 2006.

American Meteorological Society/Sigma Xi Distinguished Lecturer, 2008-2009.

Elected Fellow, American Association for the Advancement of Science, 2008.

Elected Fellow, American Geophysical Union, 2011.

American Meteorological Society Jule G. Charney Medal, January 7, 2015, "For fundamental contributions toward understanding the climatic effects of stratospheric aerosols from volcanoes and other potential sources, and the role of soil moisture in climate."

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Association for the Advancement of Science, 1975 – present.

American Meteorological Society, 1976 – present.

American Geophysical Union, 1978 – present.

International Association of Volcanism and Chemistry of the Earth's Interior, 2000 – present.

NARRATIVE OF RESEARCH EXPERIENCE:

Prof. Robock has been a researcher in the area of climate change for 46 years. He is a leading expert on the effects of volcanic eruptions on climate, using climate models and observations, and also studies the related areas of remote sensing of stratospheric aerosols and producing time series of past forcing from volcanic eruptions.

Prof. Robock worked on soil moisture observations and maintained the Global Soil Moisture Data Bank for many years, which has been used by researchers around the world as a source of data for use in

climate model development and evaluation, remote sensing, and studying climate change. It is now housed at the [International Soil Moisture Network](#). In addition, Prof. Robock has worked in the area of global warming for his entire career. He published the first transient climate model simulation of the effects of increasing carbon dioxide, and continues to work on using observations and climate models to quantify the effects of human activities on past and future climate change.

He currently works on the benefits and risks of geoengineering, and along with Ben Kravitz leads the [Geoengineering Model Intercomparison Project \(GeoMIP\)](#). GeoMIP is an officially endorsed model intercomparison project in the Coupled Model Intercomparison Project Phase 6, and has so far produced more than 90 peer-reviewed publications.

Prof. Robock has studied the climatic, agricultural, and economic consequences of regional and superpower nuclear conflicts since the 1980's. He currently leads a large research project to study this topic. He participated in meetings and briefings on the humanitarian impacts of nuclear war leading to the Treaty to Prohibit Nuclear Weapons, which was passed by the United Nations in July, 2017, led by the International Campaign to Abolish Nuclear Weapons (ICAN). ICAN won the Nobel Peace Prize in 2017, "for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its ground-breaking efforts to achieve a treaty-based prohibition on such weapons."

Prof. Robock was a Lead Author for the Working Group 1 Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). He was also a Contributing Author of 11 different chapters over the history of the IPCC. The IPCC won the Nobel Peace Prize in 2007.

263 Refereed Articles (Google Scholar h-index = 90), 1 Edited Book, and 201 Other Articles. Click [here for copies of papers](#) and [here for complete CV \(140 pp.\)](#) Some Key Publications:

- Robock, Alan, 1978: Internally and externally caused climate change. *J. Atmos. Sci.*, **35**, 1111-1122.
- Robock, Alan, 1984: Snow and ice feedbacks prolong effects of nuclear winter. *Nature*, **310**, 667-670.
- Vinnikov, Konstantin Y., Alan Robock, Ronald J. Stouffer, John E. Walsh, Claire L. Parkinson, Donald J. Cavalieri, John F. B. Mitchell, Donald Garrett, and Victor F. Zakharov, 1999: Global warming and Northern Hemisphere sea ice extent. *Science*, **286**, 1934-1937.
- Robock, Alan, 2000: Volcanic eruptions and climate. *Rev. Geophys.*, **38**, 191-219.
- Robock, Alan, Konstantin Y. Vinnikov, et al., 2000: The Global Soil Moisture Data Bank. *Bull. Amer. Meteorol. Soc.*, **81**, 1281-1299.
- Robock, Alan, Luke Oman, Georgiy L. Stenchikov, Owen B. Toon, Charles Bardeen, and Richard P. Turco, 2007: Climatic consequences of regional nuclear conflicts. *Atm. Chem. Phys.*, **7**, 2003-2012.
- Robock, Alan, Luke Oman, and Georgiy L. Stenchikov, 2007: Nuclear winter revisited with a modern climate model and current nuclear arsenals: Still catastrophic consequences. *J. Geophys. Res.*, **112**, D13107.
- Robock, Alan, 2008: 20 reasons why geoengineering may be a bad idea. *Bull. Atomic Scientists*, **64**, No. 2, 14-18, 59.
- Robock, Alan, Allison B. Marquardt, Ben Kravitz, and Georgiy Stenchikov, 2009: The benefits, risks, and costs of stratospheric geoengineering. *Geophys. Res. Lett.*, **36**, L19703.
- Robock, Alan, Martin Bunzl, Ben Kravitz, and Georgiy Stenchikov, 2010: A test for geoengineering? *Science*, **327**, 530-531.
- Robock, Alan, 2011: Nuclear winter is a real and present danger. *Nature*, **473**, 275-276.
- Kravitz, Ben, Alan Robock, et al., 2011: The Geoengineering Model Intercomparison Project (GeoMIP). *Atmospheric Science Letters*, **12**, 162-167.
- Coupe, Joshua, Charles G. Bardeen, Alan Robock, and Owen B. Toon, 2019: Nuclear winter responses to global nuclear war in the Whole Atmosphere Community Climate Model Version 4 and the Goddard Institute for Space Studies ModelE. *J. Geophys. Res. Atmos.*, **124**, 8522-8543.
- Toon, Owen B., Charles G. Bardeen, Alan Robock, et al., 2019: Rapid expansion of nuclear arsenals by Pakistan and India portends regional and global catastrophe. *Science Advances*, **5**, eaay5478.
- Jägermeyr, Jonas, Alan Robock, et al., 2020: A regional nuclear conflict would compromise global food security. *Proc. Nat. Acad. Sci.*, **117**, 7071-7081.
- Robock, Alan, 2020: Benefits and risks of stratospheric solar radiation management for climate intervention (geoengineering). *The Bridge*, **50**, 59-67.