

## APS Climate Change Statement Workshop Expert Bios



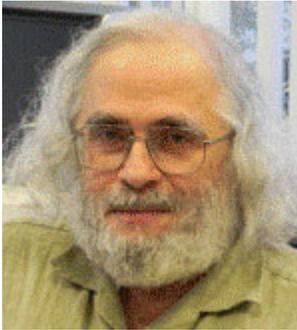
Dr. John R. Christy is Alabama's state climatologist and winner of NASA's Medal for Exceptional Scientific Achievement for the development of a global temperature data set from microwave data observed from satellites starting in 1979. He is also the director of the Earth System Science Center at The University of Alabama in Huntsville. Christy has served as a contributor and lead author for the U.N. reports by the Intergovernmental Panel on Climate Change. His research has been published in journals: *Science*, *Nature*, *Journal of Climate* and *Journal of Geophysical Research*. Additionally, Christy was featured in the February 2001 issue of *Discover* for his scientific accomplishments. He received his master's and doctoral degrees in atmospheric sciences from the University of Illinois in 1984 and 1987, respectively. He received his bachelor's degree in mathematics from California State University in Fresno in 1973. He taught physics and chemistry as a missionary teacher in Nyeri, Kenya, for two years. He earned a master of divinity degree from Golden Gate Baptist Seminary in 1978, after which he served four years as a mission-pastor in Vermillion, S.D., where he taught college math.



Dr. William Collins is an internationally recognized expert in climate modeling and climate change science. His personal research concerns the interactions among sunlight, heat, the coupled climate system, and global environmental change. He serves as a senior scientist, head of the Climate Sciences Department, and director of the Center at LBNL for Integrative Modeling of the Earth System (CLIMES) at the Lawrence Berkeley National Laboratory (LBNL); a Professor in Residence in the Department of Earth and Planetary Science at the University of California, Berkeley; and chief scientist for the Department of Energy's Enterprise in Climate and Earth System Modeling. Before joining Berkeley and Berkeley Lab, Dr. Collins was a senior scientist and Chair of the Scientific Steering Committee for the DOE/NSF Community Climate System Model project. He was a Lead Author on the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC), for which the IPCC was awarded the 2007 Nobel Peace Prize, and is also acting as a Lead Author on the forthcoming Fifth Assessment.



Dr. Judith Curry is Professor and Chair of the [School of Earth and Atmospheric Sciences](#) at the [Georgia Institute of Technology](#) and President (co-owner) of [Climate Forecast Applications Network \(CFAN\)](#). She received her Ph.D. in Geophysical Sciences from the University of Chicago in 1982. Prior to joining the faculty at Georgia Tech, she held faculty positions at the University of Colorado, Penn State University and Purdue University. She currently serves on the NASA Advisory Council Earth Science Subcommittee and the DOE Biological and Environmental Science Advisory Committee, and has recently served on the National Academies Climate Research Committee and the Space Studies Board, and the NOAA Climate Working Group. She is a Fellow of the American Meteorological Society, the American Association for the Advancement of Science, and the American Geophysical Union.



Isaac Held is head of the Weather and Atmospheric Dynamics Group at the Geophysical Fluid Dynamics Laboratory, Princeton University. The goal of his research is to gain a better understanding of such basic aspects of the atmospheric circulation as the pole-to-equator temperature gradient, the climatic distribution of surface easterlies and westerlies, and the location and strength of the jet stream. In this work he uses a hierarchy of models ranging from comprehensive and realistic numerical circulation models to very idealized dynamical systems that capture some aspects of the relevant physics. Examples of topics he has focused on include: how best to think of the atmosphere as a whole as a “heat engine” and how best to understand the relatively low efficiency with which the atmosphere generates kinetic energy; how changes in the water vapor distribution in the atmosphere as climate warms produce a positive feedback on this warming; factors that control how the poleward energy transport is partitioned between the atmosphere and the ocean; the way in which large-scale mountain ranges and land-sea heating contrasts create the stationary waves, or deviations from longitudinal symmetry, that we see in the planetary-scale tropospheric wind field, the response of tropical cyclone activity to warming, and the distinctions between transient and equilibrium responses to perturbations in the Earth's energy balance. Most recently, Dr. Held has begun working on idealized models of the organization of turbulent moist convection in the tropics with the aim of improving our understanding of the temperature, relative humidity, and cloud profiles in the tropics.



Dr. Richard Lindzen is a dynamical meteorologist with interests in the broad topics of climate, planetary waves, monsoon meteorology, planetary atmospheres, and hydrodynamic instability. His research involves studies of the role of the tropics in mid-latitude weather and global heat transport, the moisture budget and its role in global change, the origins of ice ages, seasonal effects in atmospheric transport, stratospheric waves, and the observational determination of climate sensitivity. He has made major contributions to the development of the current theory for the Hadley Circulation, which dominates the atmospheric transport of heat and momentum from the tropics to higher latitudes, and has advanced the understanding of the role of small scale gravity waves in producing the reversal of global temperature gradients at the mesopause, and provided accepted explanations for atmospheric tides and the quasi-biennial oscillation of the tropical stratosphere. He pioneered the study of how ozone photochemistry, radiative transfer and dynamics interact with each other. He is currently studying what determines the pole to equator temperature difference, the nonlinear equilibration of baroclinic instability and the contribution of such instabilities to global heat transport. He has also been developing a new approach to air-sea interaction in the tropics, and is actively involved in parameterizing the role of cumulus convection in heating and drying the atmosphere and in generating upper level cirrus clouds. He has developed models for the Earth's climate with specific concern for the stability of the ice caps, the sensitivity to increases in CO<sub>2</sub>, the origin of the 100,000 year cycle in glaciation, and the maintenance of regional variations in climate. Prof. Lindzen is a recipient of the AMS's Meisinger, and Charney Awards, the AGU's Macelwane Medal, and the Leo Huss Walin Prize. He is a member of the National Academy of Sciences, and the Norwegian Academy of Sciences and Letters, and a fellow of the American Academy of Arts and

**Dr. Richard Lindzen,  
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Sciences, the American Association for the Advancement of Sciences, the American Geophysical Union and the American Meteorological Society. He is a corresponding member of the NAS Committee on Human Rights, and has been a member of the NRC Board on Atmospheric Sciences and Climate and the Council of the AMS. He has also been a consultant to the Global Modeling and Simulation Group at NASA's Goddard Space Flight Center, and a Distinguished Visiting Scientist at California Institute of Technology's Jet Propulsion Laboratory. (Ph.D., '64, S.M., '61, A.B., '60, Harvard University).



Dr. Benjamin Santer is an atmospheric scientist at Lawrence Livermore National Laboratory. Ben's early research contributed to the historic "discernible human influence" conclusion of the 1995 Report by the Intergovernmental Panel on Climate Change. His recent work has attempted to identify human factors in a number of different climate variables. Ben holds a Ph.D. in Climatology from the University of East Anglia, England. He spent five years at the Max-Planck Institute for Meteorology in Germany, and worked on the development and application of climate fingerprinting methods. Ben served as convening lead author of the climate-change detection and attribution chapter of the 1995 IPCC report. He was the convening lead author of a key chapter of the U.S. Climate Change Science Program's report on "Temperature Trends in the Lower Atmosphere". His awards include the Norbert Gerbier–MUMM International Award, a MacArthur Fellowship, the U.S. Department of Energy's E.O. Lawrence Award, a Distinguished Scientist Fellowship from the U.S. Dept. of Energy, Office of Biological and Environmental Research, a Fellowship of the American Geophysical Union, and membership in the U.S. National Academy of Sciences.