

## James E. Hansen

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### **Education:**

BA with highest distinction (Physics and Mathematics), University of Iowa, 1963  
MS (Astronomy), University of Iowa, 1965  
Visiting student, Inst. of Astrophysics, University of Kyoto & Dept. of Astronomy, Tokyo University, Japan, 1965-1966  
Ph.D. (Physics), University of Iowa, 1967

### **Research Interests:**

Analysis of the causes and consequences of global climate change using the Earth's paleoclimate history, ongoing global observations, and interpretive tools including climate models. Connecting the dots all the way from climate observations to the policies that are needed to stabilize climate and preserve our planet for young people and other species.

### **Professional Employment:**

1967-1969	NAS-NRC Resident Research Associate: Goddard Institute for Space Studies (GISS), NY
1969	NSF Postdoctoral Fellow: Leiden Observatory, Netherlands
1969-1972	Research Associate: Columbia University, NY
1972-1981	Staff Member/Space Scientist: Goddard Institute for Space Studies (GISS), Manager of GISS Planetary and Climate Programs
1978-1985	Adjunct Associate Professor: Department of Geological Sciences, Columbia University
1981-2013	Director: NASA Goddard Institute for Space Studies
1985-present	Adjunct Professor: Earth and Environmental Sciences, Columbia University
2013-present	Director: Program on Climate Science, Awareness and Solutions, Columbia University

### **Project Experience:**

1971-1974	Co-Principal Investigator AEROPOL Project (airborne terrestrial infrared polarimeter)
1972-1985	Co-Investigator, Voyager Photopolarimeter Experiment
1974-1994	Principal Investigator (1974-8) and subsequently Co-Investigator, Pioneer Venus Orbiter Cloud-Photopolarimeter Experiment
1977-2000	Principal Investigator, Galileo (Jupiter Orbiter) Photopolarimeter Radiometer Experiment

### **Teaching Experience:**

*Atmospheric Radiation* (graduate level): New York Univ., Dept. of Meteorology & Oceanography  
*Intro. to Planetary Atmospheres & Climate Change*: Columbia Univ., Dept. of Geological Sciences

### **Awards:**

1977	Goddard Special Achievement Award (Pioneer Venus)
1978	NASA Group Achievement Award (Voyager, Photopolarimeter)
1984	NASA Exceptional Service Medal (Radiative Transfer)
1989	National Wildlife Federation Conservation Achievement Award
1990	NASA Presidential Rank Award of Meritorious Executive
1991	University of Iowa Alumni Achievement Award
1992	American Geophysical Union Fellow
1993	NASA Group Achievement Award (Galileo, Polarimeter/Radiometer)
1996	Elected to National Academy of Sciences
1996	GSFC William Nordberg Achievement Medal
1996	Editor' Citation for Excellence in Refereeing for Geophysical Research Letters
1997	NASA Presidential Rank Award of Meritorious Executive
2000	University of Iowa Alumni Fellow
2000	GISS Best Scientific Publication (peer vote): 'Global warming - alternative scenario'
2001	John Heinz Environment Award
2001	Roger Revelle Medal, American Geophysical Union
2004	GISS Best Scientific Publication (peer vote): 'Soot Climate Forcing'
2005	GISS Best Scientific Publication (peer vote): 'Earth's Energy Imbalance'
2006	Duke of Edinburgh Conservation Medal, World Wildlife Fund (WWF)
2006	GISS Best Scientific Publication (peer vote): 'Global Temperature Change'
2006	<i>Time Magazine</i> designation as one of World's 100 Most Influential People.

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2007	Laureate, Dan David Prize for Outstanding Achievements & Impacts in Quest for Energy
2007	Leo Szilard Award, American Physical Society for Outstanding Promotion & Use of Physics for the Benefit of Society
2007	Haagen-Smit Clean Air Award
2008	American Association for the Advancement of Science Award for Scientific Freedom and Responsibility
2008	Nevada Medal, Desert Research Institute
2008	Common Wealth Award for Distinguished Service in Science
2008	Bownocker Medal, Ohio State University
2008	Rachel Carson Award for Integrity in Science, Center for Science in the Public Interest
2009	Carl-Gustaf Rossby Research Medal, American Meteorological Society
2009	Peter Berle Environmental Integrity Award
2010	Sophie Prize for Environmental and Sustainable Development
2010	Blue Planet Prize, Asahi Glass Foundation
2011	American Association of Physics Teachers Klopsteg Memorial Award for communicating physics to the general public.
2011	Edinburgh Medal from City of Edinburgh, Edinburgh Science Festival
2012	Steve Schneider Climate Science Communications Award
2012	<i>Foreign Policy</i> designation as one of its Top 100 Global Thinkers
2013	Ridenhour Courage Prize

**Selected Publications:**

- Hansen, J., P. Kharecha, M. Sato, V. Masson-Delmotte, F. Ackerman, D. Beerling, P.J. Hearty, O. Hoegh-Guldberg, S.-L. Hsu, C. Parmesan, J. Rockstrom, E.J. Rohling, J. Sachs, P. Smith, K. Steffen, L. Van Susteren, K. von Schuckmann, and J.C. Zachos, 2013: [Assessing "dangerous climate change": Required reduction of carbon emissions to protect young people, future generations and nature](#). *PLOS ONE*, **8**, e81648.
- Hansen, J., M. Sato, G. Russell, and P. Kharecha, 2013: [Climate sensitivity, sea level, and atmospheric carbon dioxide](#), *Phil. Trans. Roy. Soc. A*, **371**, 20120284.
- Hansen, J., M. Sato, and R. Ruedy, 2012: [Perception of climate change](#). *Proc. Natl. Acad. Sci.*, **109**, 14726-14727, E2415- E2423, doi:10.1073/pnas.1205276109.
- Hansen, J.E., and M. Sato, 2012: [Paleoclimate implications for human-made climate change](#). In *Climate Change: Inferences from Paleoclimate and Regional Aspects*. A. Berger, F. Mesinger, and D. Šijački, Eds. Springer, pp. 21-48, doi:10.1007/978-3-7091-0973-1\_2.
- Hansen, J., M. Sato, P. Kharecha, and K. von Schuckmann, 2011: [Earth's energy imbalance and implications](#). *Atmos. Chem. Phys.*, **11**, 13421-13449, doi:10.5194/acp-11-13421-2011.
- Kharecha, P.A., C.F. Kutscher, J.E. Hansen, and E. Mazria, 2010: Options for near-term phaseout of CO<sub>2</sub> emissions from coal use in the United States. *Environ. Sci. Technol.*, **44**, 4050-4062, doi:10.1021/es903884a.
- Hansen, J., R. Ruedy, M. Sato, and K. Lo, 2010: Global surface temperature change. *Rev. Geophys.*, **48**, RG4004, doi:10.1029/2010RG000345.
- Rockström, J., W. Steffen, K. Noone, Å. Persson, F.S. Chapin, III, E. Lambin, T.M. Lenton, M. Scheffer, C. Folke, H. Schellnhuber, B. Nykvist, C.A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P.K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R.W. Corell, V.J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley, 2009: Planetary boundaries: Exploring the safe operating space for humanity. *Ecol. Soc.*, **14** (2), 32.
- Rockström, J., W. Steffen, K. Noone, Å. Persson, F.S. Chapin, III, E.F. Lambin, T.M. Lenton, M. Scheffer, C. Folke, H.J. Schellnhuber, B. Nykvist, C.A. de Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P.K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R.W. Corell, V.J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J.A. Foley, 2009: A safe operating space for humanity. *Nature*, **461**, 472-475, doi:10.1038/461472a.

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- Xu, B., J. Cao, J. Hansen, T. Yao, D.J. Joswia, N. Wang, G. Wu, M. Wang, H. Zhao, W. Yang, X. Liu, and J. He, 2009: Black soot and the survival of Tibetan glaciers. *Proc. Natl. Acad. Sci.*, **106**, 22114-22118, doi:10.1073/pnas.0910444106.
- Hansen, J., Mki. Sato, P. Kharecha, D. Beerling, R. Berner, V. Masson-Delmotte, M. Pagani, M. Raymo, D.L. Royer, and J.C. Zachos, 2008: Target atmospheric CO<sub>2</sub>: Where should humanity aim? *Open Atmos. Sci. J.*, **2**, 217-231, doi:10.2174/1874282300802010217.
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- Hansen, J., Mki. Sato, R. Ruedy, and 44 co-authors, 2007: Climate simulations for 1880-2003 with GISS modelE. *Clim. Dynam.*, **29**, 661-696, doi:10.1007/s00382-007-0255-8.
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- Hansen, J.E., 2007: Scientific reticence and sea level rise. *Environ. Res. Lett.*, **2**, 024002, doi:10.1088/1748-9326/2/2/024002. Nazarenko, L., N. Tausnev, and J. Hansen, 2007: The North Atlantic thermohaline circulation simulated by the GISS climate model during 1970-99. *Atmos.-Ocean*, **45**, 81-92, doi:10.3137/ao.450202.
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- Novakov, T., S. Menon, T.W. Kirchstetter, D. Koch, and J.E. Hansen, 2007: Reply to comment by R. L. Tanner and D. J. Eatough on "Aerosol organic carbon to black carbon ratios: Analysis of published data and implications for climate forcing". *J. Geophys. Res.*, **112**, D02203, doi:10.1029/2006JD007941.
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