Exhibit 1

James E. Hansen

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Education:

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

Research Interests:

Radiative transfer in planetary atmospheres and interpretation of remote sounding of atmospheres. Development of global climate models. Analysis of climate change, current climate trends, and projections of man's impact on climate.

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-present	Director: NASA Goddard Institute for Space Studies
1985-present	Adjunct Professor: Earth and Environmental Sciences, 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
1989-2000	Principal Investigator, Earth Observing System Interdisciplinary Investigation: Interannual Variability of Earth's Carbon, Energy and Water Cycles

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'

Awards (continued):

2001	John Heinz Environment Award
2002	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)
2007	Laureate, Dan David Prize
2007	Leo Szilard Lectureship Award, American Physical Society

Selected Publications:

Hansen, J., Mki. Sato, R. Ruedy, L. Nazarenko, A. Lacis, K. Lo, G.A. Schmidt, G. Russell, and 38 co-authors, 2007: Dangerous human-made interference with climate: A GISS modelE study. *Atmos. Chem. Phys., in press.*

Hansen, J., Mki. Sato, R. Ruedy, K. Lo, D.W. Lea and M. Medina-Elizade, 2006: Global Temperature Change. *Proc. Natl. Acad. Sci.* **103**, 14288-14293, doi:10.1073/pnas.0606291103.

Schmidt, G.A., R. Ruedy, J.E. Hansen, I. Aleinov, N. Bell, M. Bauer, S. Bauer, B. Cairns, and 28 co-authors, 2006: Present day atmospheric simulations using GISS ModelE: Comparison to in-situ, satellite and reanalysis data. *J. Climate* **19**, 153-192, doi:10.1175/JCLI3612.1.

Shindell, D., G. Faluvegi, A. Lacis, J. Hansen, R. Ruedy, and E. Aguilar, 2006: Role of tropospheric ozone increases in 20th century climate change. *J. Geophys. Res.* **111**, D08302, doi:10.1029/2005JD006348.

Hansen, J., L. Nazarenko, R. Ruedy, Mki. Sato, and 11 co-authors, 2005: Earth's energy imbalance: Confirmation and implications. *Science* **308**, 1431-1435, doi:10.1126/science.1110252.

Hansen, J., Mki. Sato, R. Ruedy, L. Nazarenko, A. Lacis, G.A. Schmidt, G. Russell, and 38 co-authors, 2005: Efficacy of climate forcings. *J. Geophys. Res.* **110**, D18104, doi:10.1029/2005JD005776.

Hansen, J.E., 2005. A slippery slope: How much global warming constitutes "dangerous anthropogenic interference"? An editorial essay. *Clim. Change* **68**, 269-279, doi:10.1007/s10584-005-4135-0.

Koch, D., and J. Hansen, 2005. Distant origins of Arctic black carbon: A Goddard Institute for Space Studies ModelE experiment. *J. Geophys. Res.* **110**, D04204, doi:10.1029/2004JD005296.

Novakov, T., S. Menon, T.W. Kirchstetter, D. Koch, and J.E. Hansen, 2005. Aerosol organic carbon to black carbon ratios: Analysis of published data and implications for climate forcing. *J. Geophys. Res.* **110**, D21205, doi:10.1029/2005JD005977.

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Hansen, J. and M. Sato, 2004: Greenhouse gas growth rates. *Proc. Natl. Acad. Sci.* **101** 16109-16114.

Hansen, J., 2004: Defusing the global warming time bomb. *Sci. Amer.* **290**, no. 3, 68-77.

Mishchenko, M.I., B. Cairns, J.E. Hansen, L.D. Travis, R. Burg, Y.J. Kaufman, J. Vanderaei Martins and E.P. Shettle, 2004: Monitoring of aerosol forcing of climate from space: analysis of measurement requirements, *J. Quant. Spectros. Rad. Trans.*, **88**, 149-161.

Novakov, T. and J.E. Hansen, 2004: Black carbon emissions in the United Kingdom during the past four decades: an empirical analysis, *Atmos. Environ.*, **38**, 4155-4163.

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Novakov, T., V. Ramanathan, J.E. Hansen, T.W. Kirchstetter, Mki. Sato, J.E. Sinton, and J.A. Satahye, 2003: Large historical changes of fossil-fuel black carbon aerosols. *Geophys. Res. Lett.* **30**, no. 6, 1324, doi:10.1029/2002GL016345.

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