

William Happer

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William Happer (born July 27, 1939^[1]) is an American physicist who has specialised in the study of atomic physics, optics and spectroscopy.^[2] He is the Cyrus Fogg Brackett^[3] Professor of Physics at Princeton University,^[2] and a long-term member of the JASON advisory group,^[1] where he pioneered the development of adaptive optics. From 1991-93, Happer served as director of the Department of Energy's Office of Science. Happer is a vocal skeptic of certain statements regarding global warming.

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Early life

Happer was born in Vellore, India, the son of two medical doctors. Happer spent the years of World War II with his mother in Oak Ridge, Tennessee. After the war, and a return to India, his family emigrated to North Carolina.^[4]

Education

William Happer	
Born	July 27, 1939 Vellore, India
Fields	Atomic physics
Institutions	Princeton University
Alma mater	Princeton University
Thesis	<i>Frequency shifts in atomic beams resonances</i> (http://www.worldcat.org/title/frequency-shifts-in-atomic-beams-resonances/oclc/632659656&referer=brief_results) (1964)
Doctoral students	John Farley
Known for	Optical pumping, atomic physics
Notable awards	Davisson-Germer Prize in Atomic or Surface Physics

He studied physics at the University of North Carolina, graduating in 1960, and then earned his doctorate at Princeton in 1964.^[2]

Career

His academic career started at Columbia University where he became a full professor and director of the Columbia Radiation Laboratory.^[2] In 1980, he left to go to Princeton, where he was later the Class of 1990 Professor of Physics.^[2] In 1991, he joined the United States Department of Energy, where he was the director of its research budget of \$3 billion.^[2] In 1993, he returned to his position at Princeton, where he became the chair of the University Research Board in 1995.^[2] Happer describes his laboratory's research interests in atomic physics: "we're interested in the mechanisms that limit the performance of optical pumping systems, such as atomic clocks, magnetometers, and laser guide-star adaptive optics systems."^[5]

Happer joined the JASON advisory group in 1976, and continues to be active there.^[1] Happer is credited with a key insight in 1982 that made adaptive optics possible: there is a layer of sodium in the mesosphere, at around 90 to 100 km. elevation, that could be lit by a laser beam to make an artificial guide star. His idea was tested successfully by DARPA, but classified for possible military applications. The military-designed technology was partially unclassified in 1991, after the same idea was independently proposed by two French astronomers. In 1994, Happer and coauthors published a declassified version of the JASON reports on adaptive optics.^{[6][7]} Happer was chairman of the steering committee for JASON, 1987–1990.^[1]

In addition to these positions, he has had numerous other assignments: trustee of the MITRE Corporation, the Richard Lounsbery Foundation and the Marshall Institute,^[2] of which he is also Chairman, since 2006.^[8] He co-founded Magnetic Imaging Technologies Inc. in 1994.^[2]

Views on global warming

In February 2009 Happer testified before the U.S. Congress, "I believe that the increase of CO₂ is not a cause for alarm and will be good for mankind", for among other reasons because of its beneficial effects on plant growth.^[9]

Happer was listed as a signer of the petition of the Oregon Institute of Science and Medicine, no later than 2000,^[10] and Cato Institute's 2009 letter.^[11] With Fred Singer, Harold Lewis, Robert Austin, Larry Gould, and Roger Cohen, Happer led^[12] the 2009 petition^[13] to the American Physical Society to change its position statement on climate change. The petition was signed by a few hundred of the 47,000 members and was rejected.^[14]

The Daily Princetonian quoted Happer:^[15]

"All the evidence I see is that the current warming of the climate is just like past warmings. In fact, it's not as much as past warmings yet, and it probably has little to do with carbon dioxide, just like past warmings had little to do with carbon dioxide," Happer explained.

In July 2011, Happer published an article in *First Things*, "The Truth About Greenhouse Gasses: The Dubious Science of Climate Crusaders," in which he discusses climate science's concern with increasing CO₂ as a "Moral Epidemic".^[16] Among other responses, climate scientist Michael MacCracken published a detailed critique.^{[17][18]}

In January 2012, Happer and 15 others published an op-ed in the *Wall Street Journal*, "No Need to Panic About Global Warming", in which they said that "The international warming establishment" has suppressed those who have doubts on the conclusion of climate science, "we have seen it before—for example, in the frightening period when Trofim Lysenko hijacked biology in the Soviet Union." In their view, it comes down to climate scientists living very well on the government trough, "Lysenko and his team lived very well, and they fiercely defended their dogma and the privileges it brought them."^[19] A discussion and exchange developed in the *New York Review of Books*^{[20][21]} along with another in *Physics Today*.^{[22][23]}

In March 2012, Happer published another op-ed in the *Wall Street Journal*, "Global Warming Models are Wrong Again", in which he focused on climate models, one of the lines of evidence for anthropogenic climate change and said that "The observed response of the climate to more CO₂ is not in good agreement with model predictions." He also said that global warming has stopped in the last 10 years.^[24]

In May 2013, Happer and Harrison Schmitt, two of the authors of the January 2012 op-ed, published another in the *Wall Street Journal*, "In Defense of Carbon Dioxide," in which they termed elevated atmospheric CO₂, "a boon to plant life".^{[25][26]}

In July 2014 Happer said, during a CNBC interview, that "The demonization of carbon dioxide is just like the demonization of the poor Jews under Hitler." ^[27]

Honors

He is a fellow of the American Physical Society and the American Association for the Advancement of Science, and a member of the National Academy of Sciences. He received an Alfred P. Sloan fellowship in 1966, an Alexander von Humboldt award in 1976, the Herbert P. Broida Prize in 1997, the Davisson-Germer prize and the Thomas Alva Edison patent award in 2000.^[2] In 2003 he was named the Cyrus Fogg Brackett Professor of Physics at Princeton University.^[28]

Selected publications

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- W. Happer, G. J. MacDonald, C. E. Max, and F. J. Dyson, "Atmospheric-turbulence compensation by resonant optical backscattering from the sodium layer in the upper atmosphere," *J. Opt. Soc. Am. A* 11, 263-276 (1994): abstract (<http://www.opticsinfobase.org/josaa/abstract.cfm?id=582>)
- William Happer, "Optical Pumping": *Review of Modern Physics*, vol. 44, Issue 2, pp. 169–249

(1972). DOI:10.1103/RevModPhys.44.169

See also

- List of scientists opposing the mainstream scientific assessment of global warming

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- [^] *A Gaggle Is Not a Consensus* (http://www.openletter-globalwarming.info/Site/Letter_to_Senate.html), 2009
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External links

- William Happer faculty page

External images



William Happer

(http://paw.princeton.edu/issues/2009/01/28/pages/2448/LIVE.Inno_Happer.jpg)

(http://www.princeton.edu/physics/people/display_person.xml?netid=happer&display=faculty) at Physics Dept., Princeton University

- Happer Lab (<http://happerlab.princeton.edu>) at Princeton

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