

## William H. Hooke c.v. May 2016

### CONTACT DETAILS

William H. Hooke  
Associate Executive Director and Senior Policy Fellow  
American Meteorological Society  
1200 New York Avenue, NW  
Suite 500  
Washington, DC 20005

Office phone: 202-355-9817

Fax: 202-737-9050

Cell: 703-328-7852

[hooke@ametsoc.org](mailto:hooke@ametsoc.org)

### PROFESSIONAL HISTORY

*April 2013-present: Associate Executive Director, AMS; Senior Policy Fellow*

**accomplishment(s):** (1) Assist the Executive Director, AMS, in all aspects of the American Meteorological Society, including strategic planning and formulation of long- and short-range goals and objectives, (2) maintain and advance AMS collaboration with Washington-based federal agencies as well as private-sector and academic members of the Climate, Weather, and Water Enterprise; (3) contribute to the work of the AMS Policy Program, including continuing leadership of the AMS Summer Policy Colloquium.

*June 2000-April 2013; Senior Policy Fellow and Director, AMS Policy Program.*

**accomplishment(s):** initiated or helped launch (1) an annual Summer Policy Colloquium that has trained 500 leaders in our field over fifteen years; (2) a monthly environmental science seminar series on Capitol Hill now in its thirteenth year; (3) a number of policy studies bringing together scientists, service providers, users, and policy makers, to work on problems ranging from natural disaster reduction, to use of weather information to support surface transportation, to use of weather and climate information to support agribusiness, energy, and other economic sectors; (4) an annual AMS Symposium on Socio-Economic Impacts and Policy Research now in its thirteenth year, and(5) a new AMS journal, *Weather, Climate, and Society*, in late 2009.

*September 1993-May 2000; (SES-5) Director, US Weather Research Program (USWRP), and Chair, NSTC Subcommittee on Natural Disaster Reduction (SNDR).*

*September 1997- April 1999; (SES-5) Senior Scientist in the Office of the Secretary of Commerce*

**accomplishment(s):** Led formulation and development of a \$100M/year multi-agency federal program to reduce natural disasters (with DoC-wide participation at a level of \$50M/year). Toward this end, established a public-private partnership between government agencies and private-sector property and casualty insurers.

*November 1987-August 1993; (SES-5) Deputy Chief Scientist of NOAA*

**accomplishment(s):** helped a succession of NOAA Chief Scientists lead NOAA's \$300M/year research programs, coordinating this work with other agencies. Formulated and led a \$10M/yr Coastal Ocean Program initiative, helped develop an \$18M/yr ESDIM data management initiative, and a \$300M modernization of the NOAA fleet. Helped develop and establish interagency science initiatives in global change research, high-performance computing, and biotechnology. Helped formulate and write a matching pair of PCAST and FCCSET policy documents on governing federal partnerships with research universities.

*1985-1987; Director (GM-15), Environmental Sciences Group (today the Forecast Systems Laboratory).*

**accomplishment(s):** Led most of the systems development work for the NWS Modernization of that period, on schedule and within budget; developed 160-year ocean-climate data base; implemented the wind profiler program; 200 people/\$20M/year effort.

*1982-1984; Branch Chief (GM-15) Sea State Studies Program Area, Wave Propagation Laboratory, NOAA.*

*1980-1982; NOAA SES Candidate Development Program.*

*1973-1980; Branch Chief, Atmospheric Studies Program Area, Wave Propagation Laboratory, NOAA.*

*1970-1973; scientist, Wave Propagation Laboratory, NOAA.*

*1967-1970; scientist, Ionospheric Telecommunications Laboratory, ESSA (NOAA predecessor)*

## **EDUCATION:**

**Ph.D. (1967), S.M. (1966)** Geophysical Sciences, the University of Chicago.  
**B.S. Physics Honors (1964)**, Swarthmore College.

## **OTHER INFORMATION**

### **ICSU:**

Member, ICSU Planning Group on Natural and Human-induced Environmental Hazards and Disasters, 2006-2008

Member, ICSU/Integrated Research on Disaster Risk Scientific Steering Committee, 2008-2009

**Served on several boards and committees of the National Academy of Sciences/National Research Council:** providing advice on topics as diverse as natural disaster reduction, the Nation's upper atmospheric research agenda, decadal priorities for atmospheric science, coping with low-altitude wind shear at airports, natural disaster reduction, and science and systems development for flood forecasts. Recent appointments include:

Chair, Disasters Roundtable, 2003-2009

Member, Committee to Assess the National Weather Service Advanced Hydrologic Prediction Service Initiative, 2004-2006

Member, Committee on Water Resource Activities at the USGS, 2006-2009

Member, Hazards Panel of the Committee on Climate, Energy, and National Security, 2009-2010

Chair, Committee on Private-Public Collaboration to Build Community Disaster Resilience, 2009-2010.

Member, Board on International Scientific Organizations, 2012-2015

Co-Chair (with Ann Bostrom), NAS Committee on advancing social and behavioral science research and application within the weather enterprise, 2016-present.

### **NAS/NRC reports**

Public Health Risks of Disasters, William H. Hooke and Paul G. Rogers, Editors, *the National Academies Press*, 71 pp. (2004)

Building Community Disaster Resilience through Private-Public Collaboration, William H. Hooke, Chair, NAS/NRC, 116 pp, (2010)

### **Recognition**

AMS Fellow, 1982

AMS Special Award, 1994

Sigma Xi Research Lecturer, 2001-2002

Elected to membership in the American Philosophical Society, 2006

Named “National Associate” of the National Research Council of the National Academies 2008  
AMS Joanne Simpson Mentorship Award, 2014  
AAAS Fellow, 2016

## **Blog**

<http://livingontherealworld> (August 2010-)

## **Books**

*Waves in the Atmosphere: Gravity Waves and Infrasound*, Earl E. Gossard and William H. Hooke, 456 pp., Elsevier (North Holland), Amsterdam, The Netherlands (1975).

*Living on the Real World: How Thinking and Acting Like Meteorologists Will Help Save the Planet*, 280 pp, American Meteorological Society, Boston, Massachusetts (2014).

## **Publications**

Ionospheric irregularities produced by internal atmospheric gravity waves (1968), J. Atmos. Terr. Phys. **30**, 795-823.

The response of the F-region ionosphere to internal atmospheric gravity waves (1968), Proc. Acoustic-Gravity Waves in the Atmos. Symp., 367-372.

On possible methods of determining the origin of E-region wind shear (1968), Proc. Acoustic-Gravity Waves in the Atmos. Symp., 373-376.

Electron, ion, and neutral gas temperatures in temperate latitude sporadic E layers (1969), Planet. Space Sci. **17**, 737-748.

E-region ionospheric irregularities produced by internal atmospheric gravity waves (1969), Planet. Space Sci. **17**, 49-765.

Radar Thomson scatter observations of E-region temperatures interpreted as revealing reversible heating by atmospheric tides (1969), J. Geophys. Res. **74**, 1870-1872.

Discussion of ionization effects on the propagation of acoustic-gravity waves in the ionosphere (1970), J. Geophys. Res. **74**, 2563-2568, C. O. Hines and W. H. Hooke.

On the role of vertical neutral-gas motions in producing ion convergence at E-region heights (1970), ESSA Tech. Rept. ERL 175-ITS 112.

The ionospheric response to internal gravity waves: I. The F2 region response (1970), J. Geophys. Res. **75**, 5535-5544.

Wave-induced fluctuations in ionospheric electron content, a model indicating some observational biases (1970), J. Geophys. Res. **75**, 6295-6308. T. M. Georges and W. H. Hooke.

Studies in ionospheric dynamics: Final Rept. to the Nat'l. Aero. and Space Admin., Marshall Space Flgt. Ctr. (1970), ESSA Tech. Memo ERLTM-ITS 239. T. M. Georges and W. H. Hooke.

Ionospheric response to internal gravity waves: 2. Lower F-region response (1970), J. Geophys. Res. **75**, 7229-7238.

Ionospheric response to internal gravity waves: 3. Changes in the densities of the different species (1970), J. Geophys. Res. **75**, 7239-7243.

Ionospheric response to an isotropic spectrum of internal gravity waves (1970), Planet. Space Sci. **18**, No. 12, 1793-1799.

Quasi-stagnation levels in the ion motion induced by internal atmospheric gravity waves at ionospheric heights (1971), J. Geophys. Res. **76**, 248-250.

The divergence of ion velocity in the E-region due to vertical winds (1971), J. Geophys. Res. **76**, 2523-2525, J. D. Whitehead and W. H. Hooke.

Traveling ionospheric disturbances observed at the magnetic equator (1971), J. Geophys. Res. **76**, 3777-3782, D. L. Sterling, W. H. Hooke and R. Cohen.

Atmospheric waves observed in the planetary boundary layer using an acoustic sounder and microbarograph array (1972), Bound. Layer Meteor. **2**, 371-380, W. H. Hooke, J. M. Young, and D. W. Beran.

Atmospheric Dynamics, Chapter 3, Remote Sensing of the Troposphere, V. E. Derr, Ed., U.S. Gov't. Printing Office, Washington, D.C. (1972), 3-1/3-15.

Atmospheric Gravity Waves in the Planetary Boundary Layer, Chapter 7, Remote Sensing of the Troposphere, V. E. Derr, Ed., U.S. Gov't. Printing Office, Washington, D. C. (1972), 7-1/7-17.

Acoustic echo-sounding techniques and their application to gravity-wave, turbulence, and stability studies (1973), Bound. Layer Meteor. **4**, 133-153, D. W. Beran, W. H. Hooke, and S. F. Clifford.

Observed generation of an atmospheric gravity wave by shear instability in the mean flow of the planetary boundary layer (1973), *Bound. Layer Meteor.* **5**, 29-41, W. H. Hooke, F. F. Hall, Jr., and E. E. Gossard.

Comments on "Ionospheric irregularities produced by internal atmospheric gravity waves." AGU Volume entitled: "The Upper Atmosphere in Motion," 451-456, a selection of papers, with annotation, by C. O. Hines and Colleagues (1974).

Waves observed in the planetary boundary layer using an array of acoustic sounders (1974), *J. Atmos. Sci.* **31**, 2040-2045, A. G. Kjelaes, D. W. Beran, W. H. Hooke and B. R. Bean.

Further study of the atmospheric gravity waves over the eastern seaboard on March 18, 1969 (1975), *J. Appl. Meteor.* **14**, 31-38, W. H. Hooke and K. Hardy.

Sensitive microbarographs used to study atmospheric gravity waves (1975), Preprint Volume, 3rd Symposium on Meteorological Observations and Instrumentation, 175-178, American Meteorological Society, Boston, Mass.

Gravity-wave interactions with severe storms: workshop recommendations for Project SESAME (1975), Planning Documentation Volume, Project SESAME, D. K. Lilly, Ed., pp. 61-84, U.S. Dept. of Commerce, NOAA, Environmental Research Laboratories, F. Einaudi, R. S. Lindzen, W. R. Peltier, and W. H. Hooke.

Conference Summary, Conference on Atmospheric and Oceanic Waves and Stability of the AMS, March-April, 1976, Seattle Washington, *Bull. Amer. Meteor. Soc.* **57**, 1244-1249, W. H. Hooke, F. Einaudi and J. M. Wallace (1976).

Chapter 8, Rossby-planetary waves, tides and gravity waves in the upper atmosphere (1977). *The Upper Atmosphere and Magnetosphere*, pp. 130-140, Studies in Geophysics, Geophysics Research Board.

The Dulles airport pressure jump detector array for gust-front detection (1977), *Bull. Amer. Meteor. Soc.* **58**, 920-926, A. J. Bedard, Jr., W. H. Hooke and D. W. Beran.

Airport weather services: some future trends (1977), *Bull. Amer. Meteor. Soc.* **58**, 1182-1186, D. W. Beran, W. H. Hooke, C. G. Little and F. Coons.

The Boulder Atmospheric Observatory (1978), Proc. Third U.S. National Conference on Wind Engineering Research, University of Florida, Gainesville, Florida, February 26-March 1, pp. 81-88, National Science Foundation.

The Dulles airport pressure-sensor array for gust-front detection -- system design and preliminary results (1978), Preprint Volume, 4th Symposium on Meteorological Observations and Instrumentation, American Meteorological Society, 115-124, A. J. Bedard, Jr., and W. H. Hooke.

Neutral atmospheric motions manifested in radar-echo Doppler shifts from two-stream irregularities in the equatorial electrojet (1978), *J. Geophys. Res.* **83**, 4791-4797, R. Cohen and W. H. Hooke.

The implications of remote-sensing developments for air-pollution meteorology, Proc. WHO Symposium on Boundary Layer Physics Applied to Specific Problems of Air Pollution, Norrkoping, Sweden, 19-23 June (1978)

Second AMS conference on Atmospheric and Oceanic Waves and Stability, 23-26 October 1978, Boston, Mass., *Bull. Am. Meteorol. Soc.* **60**, 674-681 (1979), W. H. Hooke, E. Mollo-Christensen, and P. Rhines.

Scales of gravity waves generated by instability in tropospheric shear flows, *J. Geophys. Res.* **84**, 6362-6364 (1979), G. E. Greene and W. H. Hooke.

Project PHOENIX: The September 1978 Field Operation, BAO Report #1, 281 pp., National Oceanic and Atmospheric Administration (1979), W. H. Hooke, Ed.

Project PHOENIX: An overview, Preprints Nineteenth Conference on Radar Meteorology, April 15-18, 1980, Miami, Florida, pp. 629-632, American Meteorological Society, Boston, Mass (1980).

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Dissipative waves excited by gravity-wave encounters with the stably stratified planetary boundary layer (1986), *Journal of the Atmospheric Sciences* **43**, 2048-2060, W. H. Hooke and R. M. Jones.

The perturbed structure of the neutral atmospheric boundary layer over irregular terrain. I. Model formulation (1986), *Boundary-Layer Meteorol.* **36**, 395-416, R. M. Jones and W. H. Hooke.

The perturbed structure of the neutral atmospheric boundary layer over irregular terrain. II. Model calculations (1986), *Boundary-Layer Meteorol.* **37**, 107-127, R. M. Jones and W. H. Hooke.

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U.S. participation in International Decade for Natural Disaster Reduction (2000), pp. 2-9, *Natural Hazards Rev.*, **1**, February 2000, Amer. Soc Civil Eng.

Chapter 4, Short-term weather prediction: an orchestra in need of a conductor (2000), pp.61-83, *Prediction: Science, Decision-Making, and the Future of Nature*, Daniel Sarewitz, Roger A. Pielke, Jr., and Radford Byerly, Jr., Ed., Island Press, Washington D.C.

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Lessons from PPP2000: Living with Earth's Extremes; report from the PPP2000 Working Group to the Office of Science and Technology Policy Subcommittee on Natural Disaster Reduction, Timothy A. Cohn, Kathleen K. Gohn, and William H. Hooke, Ed., *Institute for Business and Home Safety*, 119 pp, 2001

The USWRP Workshop on the Weather Research Needs of the Private Sector, Pielke, R.A., Jr. *et al.*, *Bull. Am. Met. Soc.* **84**, pp 934-948 (2003)

Climate Science, Technology and Politics: A Tangled Web, Robert M. White and William Hooke, in *Technology in Society* **26** pp 375-384 (2004).

Avoiding a Catastrophe of Human Error, *Washington Post*, January 5, 2005; page A17.



The Outlook for U.S. Meteorological Research in a Commercializing World: Fair Early, but Clouds Moving In?, Rebecca E. Morss and William H. Hooke, *Bull. Am. Meteorol. Soc.* 86, pp 921-936 (2005)

*Clarifying the Attribution of Recent Disaster Losses: A Response to Epstein and McCarthy*, R.A. Pielke, Jr., S. Agrawala, L. M. Bouwer, I. Burton, S. Changnon, M.H. Glantz, W. H. Hooke, R. J. T. Klein, K. Kunkel, D. Mileti, D. Sarewitz, E. L. Thompkins, N. Stohr, and H. von Storch, *Bull. Am. Meteorol. Soc* **86**, 1481-1483 (2005).

*Public health risks of disasters: Communication, infrastructure, and preparedness: Workshop summary*, P.G. Rogers and W. H. Hooke, Editors, National Academies Press 88 pp. (2005).

Cleveland Abbe and American Meteorology, 1871-1901, Edmund P. Willis and William H. Hooke, *Bull. Am. Meteorol. Soc. Press*, **87**, pp. 315-326 (2006).

Coping with hurricanes: It's not just about the emergency response, G. Eosco and William H. Hooke, *Bulletin of the American Meteorological Society*, 87(6), 751-753 (2006).

*Toward a Resiliency and Vulnerability Observational Network: RAVON*, W. G. Peacock, H. Kunreuther, W. H. Hooke, S. L. Cutter, and S. E. Chang, Report to the National Science Foundation, 25 pp (2008).

New times, new challenges, and a new AMS journal, *Weather, Climate and Society*, 1, pp 87-88 (2009).

*Building Community Disaster Resilience Through Private-Public Collaboration*, Committee on Private-Public Sector Collaboration to Enhance Community Disaster Resilience, Geographical Science Committee, Board on Earth Sciences and Resources, Division on Earth and Life Studies, National Research Council, William H. Hooke, Chair