
VITAE

BENDER, Morris A.

Date of Birth: December 7, 1952
Place of Birth: Youngstown, Ohio
Marital Status: Married

EDUCATION:

1974 B.S. in Mathematics, Ohio State University
1976 M.S. in Meteorology, Pennsylvania State University

EMPLOYMENT:

1974-1976 Research Assistant, Pennsylvania State University
1976- Meteorologist, Geophysical Fluid Dynamics Laboratory,
National Oceanic and Atmospheric Administration, Princeton, NJ

MEMBERSHIPS IN PROFESSIONAL AND LEARNED SOCIETIES:

American Meteorological Society

AWARDS, HONORS, CONSULTANTSHIPS:

NOAA Distinguished Authorship Award,	1992
OAR Employee of the Year Award,	1993
Department of Commerce Gold Medal,	1996
Banner-Miller Award	1997
Distinguished Authorship Award	2001
DOC Bronze Medal	2005
Department of Commerce God Medal,	2006

AWARD CITATIONS:

NOAA Environmental Research Laboratories, **DISTINGUISHED AUTHORSHIP AWARD, 1992** jointly with (Y. Kurihara
Title of Paper: Prediction Experiments of Hurricane Gloria, 1985, Using a Multiply-Nested Movable Mesh M

OAR EMPLOYEE OF THE YEAR AWARD, 1993

"Outstanding contribution to the promotion of excellence in the programs and operations of OAR as demonstrated by initiative, commitment, effort, and competence."

Department of Commerce - GOLD MEDAL FOR DISTINGUISHED SERVICE, 1996
(with Robert Tuleya and Stephen Lord)

"for their initiative and effort to transform the GFDL hurricane model into the most advanced hurricane prediction system in the world and to implement the system as an official operational tool of the National Weather Service, resulting in substantial improvement in operational hurricane prediction, and for their continuing effort to support and further upgrade the system".

BANNER I. MILLER AWARD of the American Meteorological Society, 1997
(with R.J. Ross, R.E. Tuleya, and Y. Kurihara)

"for their paper "Improvements in Tropical Cyclone Track and Intensity Forecasts using the GFDL Initialization System", Monthly Weather Review, 121(7):2046-2061, 1993.

"The Banner I. Miller Award is presented to an individual(s) for the best recent contribution to the science of hurricane and tropical weather forecasting in a journal with international circulation".

OAR, DISTINGUISHED AUTHORSHIP AWARD, 2001 (jointly with Isaac Ginis)

Title of Paper: Real-case simulations of hurricane-ocean interaction using a high-resolution coupled model: Effects on hurricane intensity.

DOC Bronze Medal Award, 2005
(with Timothy Marchok)

"for remarkable improvements to operational hurricane track forecasts through improvements to the GFDL hurricane model and transition of these to NCEP/NWS and DOD."

Department of Commerce - GOLD MEDAL FOR DISTINGUISHED SERVICE, 2006
(with Timothy Marchok, Naomi Surge and David Michaud)

"for timely improvements to the GFDL hurricane model that lead to outstanding track and intensity forecasts for Katrina and Rita.

- (1) Kurihara, Y., G.J. Tripoli, and M.A. Bender, Design of a Movable Nested-Mesh Primitive Equation Model, Monthly Weather Review, 107(3):239-249, 1979.
- (2) Kurihara, Y., and M.A. Bender, Supplementary Note on a Scheme Equation Model, Monthly Weather Review, 107(9):1219-1221, 1979.
- (3) Kurihara, Y., and M.A. Bender, Use of a Movable Nested-Mesh Model for Tracking a Small Vortex, Monthly Weather Review, 108(11):1792-1809, 1980.
- (4) Kurihara, Y., and M.A. Bender, Structure and Analysis of the Eye of a Numerically Simulated Tropical Cyclone, Journal of the Meteorological Society of Japan, 60(1):381-

395, 1982.

- (5) Kurihara, Y., and M.A. Bender, A Numerical Scheme to Treat the Open Lateral Boundary of a Limited Area Model, Monthly Weather Review, 111(3):445-454, 1983.
- (6) Bender, M.A., and Y. Kurihara, The Energy Budgets for the Eye and Eye Wall of a Numerically Simulated Tropical Cyclone, Journal of the Meteorological Society of Japan, 61(2):239-243, 1983.
- (7) Tuleya, R.E., M.A. Bender, and Y. Kurihara, A Simulation Study of the Landfall of Tropical Cyclones using a Movable Nested Mesh Model, Monthly Weather Review, 112(1):124-136, 1984.
- (8) Bender, M.A., R. Tuleya, and Y. Kurihara, A Numerical Study of the Effect of a Mountain Range on a Landfalling Tropical Cyclone, Monthly Weather Review, 113(4):567-582, 1985.
- (9) Bender, M.A., R. Tuleya, and Y. Kurihara, A Numerical Study of the Effect of Island Terrain on Tropical Cyclones, Monthly Weather Review, 115(1):130-155, 1987.
- (10) Bender, M.A., and Y. Kurihara, A Numerical Study of the Effect of the Mountainous Terrain of Japan on Tropical Cyclones, Proceedings of Short- and Medium-Range Numerical Weather Prediction, WMO/IUGG NWP Symposium, Tokyo, Japan, 4-8 August, 1986, 651-663, 1987.
- (11) Kurihara, Y., and M.A. Bender, On the Structure of Moving Tropical Cyclones, Proceedings of the 18th Conference on Hurricanes and Tropical Meteorology, 16-19 May, 1989, San Diego, CA. American Meteorological Society, Boston, MA 188-189, 1989.
- (12) Kurihara, Y., C. Kerr, and M.A. Bender, An Improved Numerical Scheme to Treat the Open Lateral Boundary of a Regional Model, Monthly Weather Review, 117(12):2714-2722, 1989.
- (13) Tuleya, R.E., M.A. Bender, and Y. Kurihara, The Simulation of Mature Tropical Storms using a High Resolution Multiply-Nested Movable Mesh Model, Proceedings of the 18th Conference on Hurricanes and Tropical Meteorology, 16-19 May, 1989, Dan Diego, CA, AMS, Boston, MA 188-189, 1989.
- (14) Kurihara, Y., M.A. Bender, R.E. Tuleya, and R.J. Ross, Prediction Experiments of Hurricane Gloria (1985) Using a Multiply Nested Movable Mesh Model, Monthly Weather Review, 118(10):2187-2198, 1990.
- (15) Kurihara, Y., R.J. Ross, and M.A. Bender, Toward Improvement of the Dynamical Prediction of Tropical Cyclones: A Hurricane Model Initialization Scheme, American Meteorological Society, Extended Abstract, February 1991.

- (16) Bender, M.A., R.J. Ross, Y. Kurihara, and R.E. Tuleya, Improvements in Tropical Cyclone Track and Intensity Forecasts using a Bogus Vortex, Proceedings of the Conference on Hurricanes and Tropical Meteorology, May 6-10, 1991, Miami, FL. Published AMS, Boston, MA June 1991.
- (17) Kurihara, Y., M.A. Bender, R.E. Tuleya, R.J. Ross, Hurricane Forecasting with the GFDL Automated Prediction System. Proceedings of the 20th Conference on Hurricanes and Tropical Meteorology, sponsored by the American Meteorological Society, San Antonio, TX, May 1993.
- (18) Kurihara, Y., M.A. Bender, and R.J. Ross, An Initialization Scheme of Hurricane Models by Vortex Specification, Monthly Weather Review, 124(7):2030-2045, 1993.
- (19) Bender, M.A., R.J. Ross, R.E. Tuleya, and Y. Kurihara, Improvements in Tropical Cyclone Track and Intensity Forecasts using a the GFDL Initialization System, Monthly Weather Review, 121(7):2046-2061, 1993.
- (20) Kurihara, Y., R.E. Tuleya, M.A. Bender, and R.J. Ross, Advanced Modeling of Tropical Cyclones, Proceedings of ICSU/WMO International Symposium on Tropical Cyclone Disasters, October 12-16, 1992, Beijing, China, 1993.
- (21) Bender, M., I. Ginis, and Y. Kurihara, Numerical Simulations of the Tropical Cyclone-Ocean Interaction with a High Resolution Coupled Model, Journal of Geophysical Research, 98(12):23,245-23,263, 1993.
- (22) Kurihara, Y., M.A. Bender, and R.E. Tuleya, Performance Evaluation of the GFDL Hurricane Prediction System in the 1994 Hurricane Season, Proceedings of the 21st Conference on Hurricanes and Tropical Meteorology, April 24-28, 1995, Miami, FL by the American Meteorological Society, Boston, MA.
- (23) Bender, M.A., Numerical Study of the Asymmetric Structure in the Interior of Tropical Cyclones, Proceedings of the 21st Conference on Hurricanes and Tropical Meteorology, April 24-28, 1995, Miami, FL by the American Meteorological Society, Boston, MA
- (24) Kurihara, Y., M.A. Bender, R.E. Tuleya, and R.J. Ross, Improvements in the GFDL Hurricane Prediction System, Monthly Weather Review, 123(9):2791-2801, 1995.
- (25) Bender, M.A., The Effect of Relative Flow on the Asymmetric Structure in the Interior of Hurricanes, Journal of the Atmospheric Sciences, 54(6):703-724, 1997
- (26) Kurihara, Y., M.A. Bender, and R.E. Tuleya, For Hurricane Intensity Forecast: Formulation of a New Initialization Method for the GFDL Hurricane Prediction Model, Reprinted from the preprint volume of the 22nd Conference on Hurricanes and Tropical Meteorology, 19-23 May 1997, Ft. Collins, CO by the AMS, Boston, MA
- (27) Bender, M.A., C.-C Wu, M.A. Rennick, and Y. Kurihara, Comparison of the GFDL Hurricane Model Prediction in the Western Pacific using the Nogaps and AVN Global

Analysis, Reprinted from the preprint volume of the 22nd Conference on Hurricanes and Tropical Meteorology, 19-23 May 1997, Ft. Collins, CO by the AMS, Boston, MA

- (28) Kurihara, Y., R.E. Tuleya, and M.A. Bender, The GFDL Hurricane Prediction System and its Performance in the 1995 Hurricane Season, Monthly Weather Review, 126(5):1306-1322, 1998..
- (29) Kurihara, Y., R.E. Tuleya, and M.A. Bender, The GFDL Hurricane Prediction System and its Performance in the 1995 Hurricane Season, Monthly Weather Review, 126(5):1306-1322, 1998..
- (30) Bender, M.A., and I. Ginis, Real Case Simulations of Hurricane-Ocean Interaction using a High Resolution Coupled Model: Effects on Hurricane Intensity, Monthly Weather Review, 128(4):917-946, 2000.
- (31) Wu, C-C, M.A. Bender, Y. Kurihara, Typhoon Forecast with the GFDL Hurricane Model: Forecast Skill and Comparison of Predictions using AVN and NOGAPS Global Analyses, Journal of the Meteorological Society of Japan, 78(6): 777-788, 2000.

- (32) Bender, Morris, I. Ginis, R. E. Tuleya, B. Thomas, and T. Marchok, The Operational GFDL Coupled Hurricane-Ocean Prediction System and Summary of its Performance, Monthly Weather Review, 132(12), 3965-3989, 2007.

MANUSCRIPTS SUBMITTED FOR PUBLICATION:

- (ca) Bender, Morris, Thomas R. Knutson, et al., Modeled Impact of Anthropogenic Warming on the Frequency of Intense Atlantic Hurricanes, Science, 2009.