

CURRICULUM VITAE

JAMES W. HURRELL

Colorado State University
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Educational Information

- Ph.D. Atmospheric Science, 1986-1990
Purdue University, August 1990
Thesis: *Maintenance of short-term subtropical wind maxima in the Southern Hemisphere: Observational and modeling study*
- M.S. Atmospheric Science, 1984-1986
Purdue University, August 1986
Thesis: *Eddy energy budgets in the tropical Southern Hemisphere during FGGE*
- B.S. Mathematics and Earth/Space Science, 1980-1984
University of Indianapolis, May 1984

Employment History

Colorado State University (CSU):

Scott Presidential Chair of Environmental Science and Engineering (9/18-present)

- Presidential chairs are the most prestigious honors CSU awards to faculty members. The faculty named to presidential chairs are selected for their key roles in advancing CSU's research and educational programs.

Full Professor, Department of Atmospheric Science, College of Engineering

National Center for Atmospheric Research (NCAR):

Director: NCAR (9/13-8/18)

- Provided scientific leadership and vision for the success of NCAR
- Developed and implemented strategic direction for the institution
- Established sound management structures and practices in order to ensure NCAR met its mission and programs achieved effective performance
- Established and maintained an effective system of communication, consultation, and coordination with the National Science Foundation (NSF) on all operational matters related to NCAR scientific programs, facilities, budgets, and administration

- Served as the final spokesperson on all NCAR matters and as the primary NCAR liaison to the NSF and other federal agencies
- Fostered high-quality programs through consensus-building among NCAR staff, with inclusion of the university community as appropriate
- Worked effectively with the senior management of UCAR and the UCAR Board of Trustees in establishing and implementing strategic goals
- Keep abreast of national atmospheric science policy affairs and carried out activities to advocate for the atmospheric and related sciences
- Oversaw nearly 800 NCAR staff members and executed an annual budget of ~\$175M

Director: NCAR Earth System Laboratory (9/11-8/13)

- Developed and implemented strategic direction for NCAR scientific research in atmospheric chemistry, climate and global dynamics, microscale and mesoscale meteorology, and multidisciplinary activities related to these areas
- Responsible for the effective management and administration of the Laboratory
- Served as an NCAR Associate Director and a member of the NCAR Executive Committee and provided advice on scientific goals, priorities, budgets, policies programs, initiatives, and standards for NCAR
- Responsible for program advocacy in a number of forums including government agencies and the scientific community at large
- Oversaw nearly 300 NCAR staff members and executed an annual budget of ~\$45M

Chief Scientist: Community Earth System Model (6/09-8/11)

- Provided the scientific leadership and management of the CESM project
- Served as Chair of the Scientific Steering Committee and oversaw the activities of twelve CESM community working groups
- Responsible for the overall coordination of model development activities, open releases of the model, and the production of CESM simulations for community research and contributions to national and international assessments of climate variability and change
- Interacted extensively with the NSF and the broader community to ensure CESM goals and objectives best met the needs of university researchers

Director: Climate and Global Dynamics Division (6/04-11/07)

- Responsible for the overall scientific and strategic mission, productivity, and excellence of the Division
- Responsible for the effective management and administration of the Division
- Fostered interaction and collaboration with other NCAR programs
- Oversaw nearly 120 NCAR staff members and executed an annual budget of ~\$20M
- Served as Deputy Director of the Division (12/03-5/04)

NCAR Scientific Appointments:

NCAR Senior Scientist (7/03-8/18)

Scientist III (7/98-7/03)

Scientist II (5/94-7/98)

Scientist I (5/91-5/94)

Visiting Scientist (9/90-5/91)

Hadley Centre for Climate Prediction and Research:

Visiting Scientist (1/99-12/99)

Professional Honors and Awards

12. University of Indianapolis, Distinguished Alumni Award (2016)
11. Fridtjof Nansen Memorial Lecture (2011)
10. Fridtjof Nansen Medal, Norwegian Academy of Science and Letters (2011)
9. Fellow, American Geophysical Union (2010)
8. Fellow, American Meteorological Society (2006)
7. Purdue University, College of Science Distinguished Alumnus Award (2006)
6. Highly Cited Researchers, Thomson-ISI (first in 2004)
5. Purdue University, Outstanding Alumnus Award, Dept. Earth and Atmospheric Science (2004)
4. American Meteorological Society, Clarence Leroy Meisinger Award (2001)
3. University of Indianapolis, Distinguished Alumnus Award, School of Science (2001)
2. Fellow, Royal Meteorological Society (2000)
1. NCAR, Outstanding Publication Award (1997)

Publications (Google Scholar: 31,091 citations, H index of 58)
(Web of Science: 16,476 citations, H index of 41)

1 External Refereed Journal Articles

72. Hurrell, J. W., R. Thompson and U. Obolski, 2019: The Impact of Decadal Climate Variability on Infectious Disease Spread, *Nature*, in prep.
71. Hurrell, J. W., I. Simpson, C. Deser, and L. Sun, 2019: Response of Climate Modes to Stratospheric Aerosol Geoengineering, *Climate Dynamics*, in prep.
70. Barnes, E. A., I. Ebert-Uphoff, C. Anderson, and J. W. Hurrell, 2019: Using Artificial Intelligence to Identify the Human Influence on Climate, *Science*, in prep.
69. Deser, C., J. W. Hurrell and A. S. Phillips, 2017: The Role of the North Atlantic Oscillation in European Climate Projections. *Clim. Dyn.*, doi: 10.1007/s00382-016-3502-z
68. Gamelon, M., and co-authors, 2017: Interactions between demography and environmental effects are important determinants of population dynamics. *Sci. Adv.*, 3, e1602298.
67. Hurrell, J. W. and C. Deser, 2015: Northern hemisphere climate variability during winter: Looking back on the work of Felix Exner. *Meteorol. Zeitschrift*, **24**, No. 1, 113–118.
66. Rockström, J., and co-authors, 2014: Climate change: The necessary, the possible and the desirable Earth League climate statement on the implications for climate policy from the 5th IPCC Assessment. *Earth's Future*, **2**, 606–611, doi:10.1002/2014EF00028

65. Moss, R. H., and co-authors, 2013: Hell and High Water: Practice-Relevant Adaptation Science. *Science*, **342**, 696-698, doi:10.1126/science.1239569.
64. Hurrell, J. W., and co-authors, 2013: The Community Earth System Model. *Bull. Am. Met. Soc.*, 10.1175/BAMS-D-12-00121.1
63. Asrar, G., J. W. Hurrell, and A. Busalacchi, 2013: A Need for “Actionable” Climate Science and Information: Summary of WCRP Open Science Conference. *Bulletin of the American Meteorological Society*, doi:10.1175/BAMS-D-12-00011.1
62. Danabasoglu, G., S. G. Yeager, Y. -O. Kwon, J. J. Tribbia, A. S. Phillips, and J. W. Hurrell, 2012: Variability of the Atlantic Meridional Overturning Circulation in CCSM4. *J. Climate*, **25**, 5153-5172, doi:10.1175/JCLI-D-11-00463.1.
61. Goddard, L., J. W. Hurrell, B. P. Kirtman, J. Murphy, T. Stockdale, and C. Vera, 2012: Two timescales for the price of one (almost). *Bulletin of the American Meteorological Society*, **93**, 621–629, doi: <http://dx.doi.org/10.1175/BAMS-D-11-00220.1>
60. Hoerling, M. P., J. W. Hurrell, A. Kumar, L. Terray, J. Eischeid, P. Pegion, T. Zhang, X.W. Quan, and T. Xu, 2011: On North American Decadal Climate for 2011-2020. *J. Climate*, **24**, 4519–4528, doi:10.1175/2011JCLI4137.1
59. Hurrell, J. W., D. Bader, T. Delworth, G. A. Meehl, B. Kirtman and B. Wielicki, 2010: Reply to Pielke Comment on “A Unified Modeling Approach to Climate System Prediction”. *Bulletin of the American Meteorological Society*, doi: 10.1175/2010BAMS3118.1.
58. Overland, J., J. Alheit, A. Bakun, J. W. Hurrell, D. Mackas, and A. Miller, 2009: Climate controls on marine ecosystems and fish populations. *Journal of Marine Systems*, doi:10.1016/j.jmarsys.2008.12.009
57. Hurrell, J. W., and C. Deser, 2009: Atlantic climate variability. *Journal of Marine Systems*, doi:10.1016/j.jmarsys.2008.11.026
56. Hurrell, J. W., G. A. Meehl, D. Bader, T. Delworth, B. Kirtman, and B. Wielicki, 2009: A Unified Modeling Approach to Climate System Prediction. *Bulletin of the American Meteorological Society*, doi:10.1175/2009BAMS2752.1
55. Hurrell, J. W., 2008: Decadal climate prediction: opportunities and challenges. *J. Phys. Conf. Ser.*, **125**, doi:10.1088/1742-6596/125/1/012018
54. Folland, C., J. Knight, H. Linderholm, D. Fereday, S. Ineson, and J. W. Hurrell, 2008: The summer North Atlantic Oscillation: past, present and future. *Journal of Climate*, doi: 10.1175/2008JCLI2459.1
53. Hurrell, J. W., J. J. Hack, D. Shea, J. Caron, and J. Rosinski, 2008: A new sea surface temperature and sea ice boundary data set for the Community Atmospheric Model. *Journal of Climate*, doi:10.1175/2008JCLI2292.1
52. Hoerling, M. P., J. W. Hurrell, J. Eischeid, and A. Phillips, 2007: Detection and Attribution of 20th Century Northern and Southern African Rainfall Change. *Journal of Climate*, **19**, 3989-4008.
51. Anthes, R. A., R. W. Correll, G. Holland, J. W. Hurrell, M. MacCracken, and K. E. Trenberth, 2006: Hurricanes and Global Warming - An Alternative Point of View. *Bulletin of the American Meteorological Society*, **87**, 623-628.
50. Hurrell, J. W., J. J. Hack, A. Phillips, J. Caron, and J. Yin, 2006: The Dynamical Simulation of the Community Atmospheric Model Version 3. *Journal of Climate*, **19**, 2162-2183.

49. Hurrell, J. W., M. Visbeck and co-authors, 2006: Atlantic Climate Variability and Predictability: A CLIVAR perspective. *Journal of Climate*, **19**, 5100-5121.
48. Cassou, C., C. Deser, L. Terray, C. Deser, J. W. Hurrell, and M. Drévillon, 2004: Summer sea surface temperature conditions in the North Atlantic and their impact upon the atmospheric circulation in early winter. *Journal of Climate*, **17**, 3349-3363.
47. Rodwell, M.J., M. Drévillon, C. Frankignoul, J. W. Hurrell, H. Pohlman, M. Stendel, and R. T. Sutton, 2004: North Atlantic forcing of climate and its uncertainty from a multi-model experiment. *Q. J. R. Meteorological Society*, **130**, 2013-2032.
46. Hoerling, M. P., J. W. Hurrell, T. Xu, G. Bates, and A. Phillips, 2004: Twentieth Century North Atlantic climate change. Part II: Understanding the effects of Indian Ocean warming. *Climate Dynamics*, **23**, 391-405, doi:10.1007/s00382-004-0433-y.
45. Hurrell, J. W., M. P. Hoerling, A. Phillips, and T. Xu, 2004: Twentieth Century North Atlantic climate change. Part I: Assessing determinism, *Climate Dynamics*, **23**, 371-389, doi: 10.1007/s00382-004-0432-y.
44. Cassou, C., L. Terray, J. W. Hurrell, and C. Deser, 2004: North Atlantic winter climate regimes: spatial asymmetry, stationarity with time and oceanic forcing. *Journal of Climate*, **17**, 1055-1068.
43. Deser, C., A. Phillips, and J. W. Hurrell, 2004: Pacific inter-decadal climate variability: Linkages between the Tropics and North Pacific during boreal winter since 1900, *Journal of Climate*, **17**, 3109-3124.
42. Stenseth, N. C., A. Shabbar, K.-S. Chan, S. Boutin, E. K. Rueness, D. Ehrich, J. W. Hurrell, O. C. Lingjaerde, and K. S. Jakobsen, 2004: Snow conditions may create an invisible barrier for lynx. *Proceedings of the National Academy of Sciences*, **101**, 10632-10634.
41. Stenseth, N. C., G. Ottersen, J. W. Hurrell, A. Mysterud, M. Lima, K.-S. Chan, N. G. Yoccoz, and B. Adlandsvik, 2003: Studying climate effects on ecology through the use of climate indices: the North Atlantic Oscillation, El Niño Southern Oscillation and beyond. *Proceedings Royal Society: Biological Sciences*, **270**, 2087-2096.
40. Stenseth, N.C., A. Mysterud, G. Ottersen, J. W. Hurrell, K.-S. Chan, and M. Lima, 2002: Ecological effects of large-scale climate fluctuations. *Science*, **297**, 1292-1296.
39. Visbeck, M., J. W. Hurrell, L. Polvani, and H. M. Cullen, 2001: The North Atlantic Oscillation: Past, present and future. *Proceedings of the National Academy of Sciences*, **98**, 12876-12877.
38. Blackmon, M., J. W. Hurrell and co-authors, 2001: The Community Climate System Model. *Bulletin of the American Meteorological Society*, **82**, 2357-2376.
37. Hoerling, M. P., J. W. Hurrell, and T. Xu, 2001: Tropical origins for recent North Atlantic climate change. *Science*, **292**, 90-92.
36. Marshall, J., Y. Kushnir, D. Battisti, P. Chang, A. Czaja, R. Dickson, J. Hurrell, M. McCartney, R. Saravanan, and M. Visbeck, 2001. North Atlantic climate variability: phenomena, impacts and mechanisms. *International Journal of Climatology*, **21**, 1863-1898.
35. Hurrell, J. W., Y. Kushnir, and M. Visbeck, 2001: The North Atlantic Oscillation, *Science*, **291**, 603-605.
34. Trenberth, K. E., D. P. Stepaniak, J. W. Hurrell, and M. Fiorino, 2000: Quality of reanalyses in the tropics. *Journal of Climate*, **14**, 1499-1510.

33. Dickson, R. R., T. J. Osborn, J. W. Hurrell, J. Meincke, J. Blindheim, B. Adlandsvik, T. Vinje, G. Alekseev, and W. Maslowski, 2000: The Arctic Ocean response to the North Atlantic oscillation. *Journal of Climate*, **13**, 2671-2696.
32. Hurrell, J. W., S. J. Brown, K. E. Trenberth, and J. R. Christy, 2000: Comparison of tropospheric temperatures from radiosondes and satellites: 1979-1998. *Bulletin of the American Meteorological Society*, **81**, 2165-2177.
31. Trenberth, K. E., and J. W. Hurrell, 1999: Reply to Rajagopalan, Lall and Cane's comment about "The interpretation of short climate records with comments on the North Atlantic and Southern Oscillations". *Bulletin of the American Meteorological Society*, **80**, 2726-2728.
30. Trenberth, K. E., and J. W. Hurrell, 1999: Comment on: "The interpretation of short climate records with comments on the North Atlantic and Southern Oscillations". *Bulletin of the American Meteorological Society*, **80**, 2721-2722.
29. Hurrell, J. W., and K. E. Trenberth, 1999: Global sea surface temperature analyses: multiple problems and their implications for climate analysis, modeling, and reanalysis. *Bulletin of the American Meteorological Society*, **80**, 2661-2678.
28. Stenseth, N. C., J. W. Hurrell and co-authors, 1999: Common dynamic structure of Canadian Lynx populations within three geo-climatic zones. *Science*, 285, 1071-1073.
27. Meehl, G. A., J. W. Hurrell, and H. van Loon, 1998: A modulation of the mechanism of the semiannual oscillation in the Southern Hemisphere. *Tellus*, **50A**, 442-450.
26. Hurrell, J. W., 1998: Relationships among recent atmospheric circulation changes, global warming, and satellite temperatures. *Science Progress*, **81 (3)**, 205-224.
25. Hurrell, J. W., and K. E. Trenberth, 1998: Difficulties in obtaining reliable temperature trends: Reconciling the surface and satellite MSU records. *Journal of Climate*, **11**, 945-967.
24. Boville, B. A. and J. W. Hurrell, 1998: Atmospheric circulation in the CSM coupled simulation. *Journal of Climate*, **11**, 1327-1341.
23. Hurrell, J. W., J. J. Hack, B. A. Boville, D. L. Williamson, and J. T. Kiehl, 1998: The dynamical simulation of the NCAR CCM3. *Journal of Climate*, **11**, 1207-1236.
22. Kiehl, J. T., J. J. Hack, and J. W. Hurrell, 1998: The energy budget of the NCAR Community Climate Model (CCM3). *Journal of Climate*, **11**, 1151-1178.
21. Hack, J. J., J. T. Kiehl, and J. W. Hurrell, 1998: The hydrologic cycle and thermal structure of the NCAR CCM3. *Journal of Climate*, **11**, 1179-1206.
20. Trenberth, K. E., and J. W. Hurrell, 1997: How accurate are satellite 'thermometers'. *Nature*, **389**, 342-343.
19. Hurrell, J. W., and H. van Loon, 1997: Decadal variations in climate associated with the North Atlantic oscillation. *Climatic Change*, **36**, 301-326.
18. Hurrell, J. W., and K. E. Trenberth, 1997: Spurious trends in satellite MSU temperatures from merging different satellite records. *Nature*, **386**, 164-167.
17. Giorgi, F., J. W. Hurrell, M. R. Marinucci, and M. Beniston, 1997: Elevation dependency of the surface climate change signal: a model study. *Journal of Climate*, **10**, 288-296.
16. Hurrell, J. W., and K. E. Trenberth, 1996: Satellite versus surface estimates of air temperature since 1979. *Journal of Climate*, **9**, 2222-2232.

15. Hurrell, J. W., 1996: Influence of variations in extratropical wintertime teleconnections on Northern Hemisphere temperatures. *Geophysical Research Letters*, **23**, 665-668.
14. Hurrell, J. W., 1995: Decadal trends in the North Atlantic Oscillation: Regional temperatures and precipitation. *Science*, **269**, 676-679.
13. Hurrell, J. W., 1995: An evaluation of the transient eddy forced vorticity balance during northern winter. *Journal of the Atmospheric Sciences*, **52**, 2286-2301.
12. Shea, D. J., H. van Loon and J. W. Hurrell, 1995: The tropical-subtropical semi-annual oscillation in the upper troposphere. *International Journal of Climatology*, **15**, 975-983.
11. Trenberth, K. E., J. W. Hurrell and A. Solomon, 1995: Conservation of mass in three dimensions. *Journal of Climate*, **8**, 692-708.
10. Hurrell, J. W., 1995: Comparison of NCAR Community Climate Model (CCM) climates. *Climate Dynamics*, **11**, 25-50.
9. Trenberth, K. E., and J. W. Hurrell, 1995: Decadal coupled atmospheric-ocean variations in the North Pacific Ocean. In *Climate Change and Northern Fish Populations*. Canad. Spec. Publ. Fisheries Aquatic Sciences. R. J. Beamish, Ed., **121**, 15-24.
8. Hurrell, J. W., and H. van Loon, 1994: A modulation of the atmospheric annual cycle in the Southern Hemisphere. *Tellus*, **46A**, 325-338.
7. Trenberth, K. E., and J. W. Hurrell, 1994: Decadal atmosphere-ocean variations in the Pacific. *Climate Dynamics*, **9**, 303-319.
6. Hurrell, J. W., and K. E. Trenberth, 1992: An evaluation of monthly mean MSU and ECMWF global atmospheric temperatures for monitoring climate. *Journal of Climate*, **5**, 1424-1440.
5. Trenberth, K. E., J. R. Christy and J. W. Hurrell, 1992: Monitoring global monthly mean surface temperatures. *Journal of Climate*, **5**, 1405-1423.
4. Hurrell, J. W., and D. G. Vincent, 1992: A GCM case study on the maintenance of short-term subtropical wind maxima in the summer hemisphere during SOP-1, FGGE. *Quarterly Journal of the Royal Meteorological Society*, **118**, 51-70.
3. Hurrell, J. W., and D. G. Vincent, 1991: On the maintenance of short-term subtropical wind maxima in the Southern Hemisphere during SOP-1, FGGE. *Journal of Climate*, **4**, 1009-1022.
2. Hurrell, J. W., and D. G. Vincent, 1990: Relationship between tropical heating and subtropical westerly maxima in the Southern Hemisphere during SOP-1, FGGE. *Journal of Climate*, **3**, 751-768.
1. Hurrell, J. W., and D. G. Vincent, 1987: Significance of the South Pacific Convergence Zone (SPCZ) in the energy budget of the Southern Hemisphere tropics. *Monthly Weather Review*, **115**, 1797-1801.

2 Other External Refereed Publications

a. Primary author

28. Trenberth, K. E., and J. W. Hurrell, 2019: Climate Change. Effects of Climate Change on Birds (2nd Edition), P. O. Dunn and A. P. Møller, Eds. Oxford University Press, in press.
27. Hurrell, J. W., C. Deser, A.S. Phillips, 2018: The North Atlantic Oscillation (NAO). *Encyclopedia of Ocean Sciences*, 3rd Edition, <https://doi.org/10.1016/B978-0-12-409548-9.11621-5>.

26. Hurrell, J. W., 2015. Climate Variability: North Atlantic and Arctic Oscillation. *Encyclopedia of Atmospheric Sciences*, 2nd edition, G. R. North, J. Pyle and F. Zhang, Eds., 47-60. ISBN: 9780123822253.
25. Asrar, G. R., J. W. Hurrell, J. W., and A. J. Busalacchi, 2013: WCRP Strategy and Priorities: Next Decade, *Climate Science for Serving Society: Research, Modelling and Prediction Priorities*, Springer Press, DOI 10.1007/978-94-007-692-1, 1-12.
24. Hurrell, J. W., 2013: The North Atlantic Oscillation (NAO). *Encyclopedia of Ocean*, S. Elias, Editor, Elsevier.
23. Hurrell, J. W., and K. E. Trenberth, 2010: Climate Change. *Effects of Climate Change on Birds*. A. P. Møller, W. Fielder, P. Berthold, Eds. Oxford University Press, 9-29.
22. Cazenave, A., D. P. Chambers, P. Cipollini, L. L. Fu, J. W. Hurrell, M. Merrifield, R. S. Nerem, H. P. Plag, C. K. Shum, and J. Willis, 2010. Sea level rise: regional and global trends. In Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 1), Venice, Italy, 21-25 September 2009. Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306.
21. Latif, M., T. Delworth, D. Dommenges, H. Drange, W. Hazeleger, J. Hurrell, N. Keenlyside, J. Meehl and R. Sutton, 2010: Dynamics of decadal climate variability and implications for its prediction. In Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2), Venice, Italy, 21-25 September 2009. Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306.
20. Hurrell, J. W., and co-authors, 2010: Decadal Climate Variability, Predictability and Prediction. In Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 1), Venice, Italy, 21-25 September 2009. Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306.
19. Hurrell, J. W., and co-authors, 2010: Decadal Climate Prediction: Opportunities and Challenges. In Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2), Venice, Italy, 21-25 September 2009. Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306.
18. Ito, S.-I., K. A. Rose, A. J. Miller, K. Drinkwater, K. M. Brander, J. E. Overland, S. Sundby, E. Curchitser, J. W. Hurrell, and Y. Yamanaka, 2010: Ocean ecosystem responses to future global change scenarios: A way forward. In: *Marine Ecosystems and Global Change*, Barange, M., J. G. Field, R. P. Harris, E. E. Hofmann, R. I. Perry, and F. Werner, Eds., Oxford University Press, 287-322.
17. Csirke, J., M. Glantz, and J. W. Hurrell, 2009: Forward. In: *Climate Change and Small Pelagic Fish*, Checkley Jr., D. M., J. Alheit, Y. Oozeki, and C. Roy, Eds., 1030 pp.
16. Linderholm, H.W., C.K. Folland, and J. W. Hurrell, 2008: Reconstructing Summer North Atlantic Oscillation (SNAO) variability over the last five centuries. In: *Tree rings in archaeology, climatology and ecology*, Elferts D et al. (Eds.), *TRACE*, **6**, 8-16.
15. Ramaswamy, V., J.W. Hurrell, G.A. Meehl, 2006: Why do temperatures vary vertically (from the surface to the stratosphere) and what do we understand about why they might vary and change over time? in *Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences*. T. R. Karl, S. J. Hassol, C. D. Miller, and W. L. Murray, editors. A Report by the Climate Change Science Program and the Subcommittee on Global Change Research, Washington, DC.

14. Trenberth, K. E., J. W. Hurrell, D. P. Stepaniak, 2005: The Asian monsoon: Global perspectives. *Asian Monsoon*, B. Wang, Ed., Praxis Publishing Ltd., 67-87 (and color section 9-19).
13. Hurrell, J. W., 2005: The North Atlantic Oscillation. *Encyclopedia of World Climatology*. J. E. Oliver, Ed., *Encyclopedia of World Climatology*, Springer, 536-539
12. Ottersen, G., N. C. Stenseth, and J. W. Hurrell, 2004: Climatic fluctuations and marine systems: a general introduction to the ecological effects. *Marine Ecosystems and Climate Variation: The North Atlantic*. N. C. Stenseth, G. Ottersen, J. W. Hurrell, and A. Belgrano, Eds., Oxford University Press, 3-14.
11. Hurrell, J. W., and R. R. Dickson, 2004: Climate variability over the North Atlantic. *Marine Ecosystems and Climate Variation: The North Atlantic*. N. C. Stenseth, G. Ottersen, J. W. Hurrell, and A. Belgrano, Eds., Oxford University Press, 15-31.
10. Hurrell, J. W., Y. Kushnir, M. Visbeck, and G. Ottersen, 2003: An overview of the North Atlantic Oscillation. *The North Atlantic Oscillation: Climatic Significance and Environmental Impact*. J. W. Hurrell, Y. Kushnir, G. Ottersen, and M. Visbeck, Eds. *Geophysical Monograph*, **134**, 1-35.
9. Hurrell, J. W., 2003: Climate Variability: North Atlantic and Arctic Oscillation. *Encyclopedia of Atmospheric Sciences*, J. Holton, J. Pyle, and J. Curry, Eds., 439-445.
8. Hurrell, J. W., 2002: Recent atmospheric circulation changes and their role in global warming. *FSWX Outlook*, **3**, 1-10.
7. Dickson, R. R., J. W. Hurrell, N. L. Bindoff, A. Wong, B. Arbic, B. Owens, S. Imawaki, and I. Yashayaev, 2001: The world during WOCE. Chapter 7.3 in *Ocean Circulation and Climate. Observing and Modeling the Global Oceans*. G. Siedler, J. Gould and J. Church, Eds. WOCE IPO, Vol. 77, International Geophysics Series, Academic Press, 557-583.
6. Hurrell, J. W., M. P. Hoerling, and C. K. Folland, 2001: Climatic variability over the North Atlantic. *Meteorology at the Millennium*. R. Pearce, Ed., Academic Press, London, 143-151.
5. Hurrell, J. W., 2001: The North Atlantic Oscillation. *Encyclopedia of Ocean Sciences*. J. Steele, S. A. Thorpe, and K. K. Turekian, Eds. Academic Press, London, United Kingdom, Vol. 4, 1904-1911.
4. Folland, C. K., T. R. Karl, and co-authors, 2001: Observed Climate Variability and Change. Chapter 2 in *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. J. T. Houghton, Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, and C. A. Johnson, Eds. Cambridge University Press, Cambridge, United Kingdom and New York, 99-181.
3. Hurrell, J. W., H. van Loon, and D. Shea, 1998: The mean state of the troposphere. *Meteorology of the Southern Hemisphere*. D. J. Karoly and D. G. Vincent, Eds., Meteorological Monographs, **49**, American Meteorological Society, Boston, MA, 1-46.
2. Dickson, R. R., J. W. Hurrell, and M. McCartney, H. L. Bryden, R. Williams, and J. Marshall, 1998: The North Atlantic Oscillation. *CLIVAR: A research program for climate variability and prediction for the 21st century*, WCRP No. 103, WMO/TD No. 869, ICPO No. 14, 163-192.
1. Trenberth, K. E., and J. W. Hurrell, 1995: Decadal climate variations in the Pacific. National Research Council, *Natural Climate Variability on Decade-to-Century Time Scales*. D. G.

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b. Contributing author

6. Bretherton, C., and co-authors, 2012: A National Strategy for Advancing Climate Modeling. National Research Council, National Academies Press, Washington, D.C., 300 pp.
5. Ramanathan, V., and co-authors, 2009: Restructuring Federal Climate Research to Meet the Challenges of Climate Change. National Research Council, National Academies Press, Washington, D.C., 172 pp.
4. Ramanathan, V., and co-authors, 2007: Evaluating Progress of the U.S. Climate Change Science Program: Methods and Preliminary Results. National Research Council, National Academies Press, Washington, D.C., 178 pp.
3. Trenberth, K. E., P. D. Jones, P. Ambenje, R. Bojariu, D. Easterling, A. Klein Tank, D. Parker, F. Rahimzadeh, J. A. Renwick, M. Rusticucci, B. Soden, P. Zhai 2007: *Observations: Surface and Atmospheric Climate Change*. In: *Climate Change 2007. The Physical Science Basis*. Contribution of WG I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [S. Solomon, D. Qin, M. Manning, Z. Chen, M. C. Marquis, K. B. Averyt, M. Tignor and H. L. Miller (Eds.) Cambridge University Press. Cambridge, U. K., and New York, NY, USA, 235-336, plus annex online.
2. Robinson, D., and co-authors, 2004: Climate Data Records from Environmental Satellites. National Research Council, National Academies Press, Washington, D.C., 136 pp.
1. Stocker, T., and co-authors, 2001: Physical Climate Processes and Feedbacks. Chapter 7 in *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. J. T. Houghton, Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell, and C. A. Johnson, Eds. Cambridge University Press, Cambridge, United Kingdom and New York, 417-470.

3 Editorials

7. Hurrell, J. W., 2011: Putting this winter in context: how severe was it? *Washington Post, Capital Weather Gang*, http://www.washingtonpost.com/blogs/capital-weather-gang/post/putting-this-winter-in-context-how-severe-was-it/2011/04/13/AFbIEBWD_blog.html
6. McCarthy, J., L. Graumlich, J. Hurrell, and C. Field, 2010: Climate science to support smart decisions, *Politico*, <http://www.politico.com/news/stories/0710/39664.html>
5. Hurrell, J. W., 2008: A changing context for life on Earth. *J. Allergy Clin. Immunol.*, **122(3)**, 473-474.
4. Stenseth, N. C., and J. W. Hurrell, 2006: Focusing on multidisciplinary climate-effect studies. *Climate Research*, **32**, 159.
3. Stenseth, N. C., and J. W. Hurrell, 2005: Climate Research – further developing a multidisciplinary Journal for the 21st Century. *Climate Research*, **29**, 1.

2. Stenseth, N. C., and J. W. Hurrell, 2005: Global Climate Change: Building Links between the Climate and Ecosystem Impact Research Communities. *Climate Research*, **29**, 181-182.

1. Hurrell, J. W., 2003: EOS Bookshelf: The North Atlantic Oscillation. *Eos*, **84**, 73.

4 NCAR Technical Notes

4. *Harry van Loon symposium. Studies in climate Part II*, 1997. R. A. Madden, E. C. Stephens, J.W. Hurrell, G. N. Kiladis, G. A. Meehl, and D. J. Shea, Eds. NCAR Technical Note NCAR/TN-433+PROC, National Center for Atmospheric Research, Boulder, CO, 290 pages.

3. Hurrell, J. W., J. J. Hack, and D. P. Baumhefner, 1993: *Comparison of NCAR Community Climate Model (CCM) climates*. NCAR Technical Note NCAR/TN-395+STR, National Center for Atmospheric Research, Boulder, CO, 335 pages.

2. Hoerling, M. P., L. S. DeHaan, and J. W. Hurrell, 1993: *Diagnosis and sensitivity of the wintertime 200 hPa circulation in NCAR Community Climate Models*. NCAR Technical Note NCAR/TN-394+STR, National Center for Atmospheric Research, Boulder, CO, 68 pages.

1. Hurrell, J. W. and G. G. Campbell, 1992: *Monthly mean global satellite data sets available in CCM history tape format*. NCAR Technical Note NCAR/TN-371+STR, National Center for Atmospheric Research, Boulder, CO, 94 pages.

Research Grants

16. Suryanarayanan, S., J. W. Hurrell, M. Gonzalez, and K. Chandrin, 2019: NSF Engineering Research Center for Climate-Smart Approaches for Urban Energy (CSAUE), Gen-4 Engineering Research Center Pre-proposal, NSF, submitted.

15. Hurrell, J. W., Arun Kumar, Martin P. Hoerling: A Methodology for North American Decadal Prediction, NOAA MAPP, \$475,000, August 2012-July 2015.

14. Hurrell, J. W., Jesse V. Johnson, Mariana Vertenstein, William H. Lipscomb: Implementation of Advanced Land-Ice Models in the Community Earth System Model, NSF, \$304,090, May 2011-April 2014.

13. Deser, C., J. W. Hurrell, K. E. Trenberth, A. Dai, J. Fasullo, and D. Shea: An Informed Guide to Climate Data Sets with Relevance to Earth System Model Evaluation, NSF, \$899,973, March 2011-February 2014.

12. Tribbia, J., G. Danabasoglu, J. Hurrell, P. Lauritzen, M. Zhang and M. Taylor: Regional Projections of Climate at Decadal Time Scales: High Resolution Global Predictions and Regionally Resolved Source-Response Studies. DOE, \$676,743, September 2010-September 2013.

11. Curchister, E. N., K. S. Hedstrom, W. G. Large, J. W. Hurrell, F. Chai, C. Edwards, J. Fiechter, and N. Goebel: Multi-Scale Modeling: Assessing the Role of Eastern Boundary Upwelling Regions and Their Ecosystems on Climate Variability Using a Fully Coupled Model. NSF OCE, \$800,249, June 2010-May 2015.

10. Hurrell, J. W., M. P. Hoerling, A. Kumar, and X.-W. Quan: Toward a North American Decadal Climate Prediction for the 2011-2020. NOAA CVP, \$598,134, September 2009-August 2012.

9. Hurrell, J. W., M. P. Hoerling, and J. Eischeid: A Multi-model Approach Toward the Attribution of U.S. Climate Variation and Change. NOAA CVP, \$369,000, August 2007-July 2010.
8. Hurrell, J. W., D. Schimel, Z. Powell, K. Miller, L. Mearns, and M. Hagan: Toward Integrative Science at NCAR: Building Links Between the Climate and Ecosystem Impact Research Communities. 2006 NCAR Opportunity Fund, \$160,000, September 2005-August 2007.
7. Deser, C., and J. W. Hurrell: Pacific inter-decadal climate variability: Modeling and further observational studies. NOAA CLIVAR-Pacific, \$289,000, April 2004-March 2006.
6. Hurrell, J. W., M. P. Hoerling, and C. Deser: Diagnosing Oceanic Origins of Future Regional Climate Change. NOAA CLIVAR-Pacific, \$210,000, April 2004-March 2006.
5. Hurrell, J. W., and M. P. Hoerling: Understanding origins for recent North Atlantic climate change. NOAA CLIVAR-Atlantic, \$390,000, March 2003-February 2005.
4. Stenseth, N. C., T. Anker-Nilssen, J. W. Hurrell, and K.-S. Chan: The ecological effects of climate fluctuations and change: A multi-disciplinary and intergrated approach. Norwegian Science Council, \$135,000, August 2001-July 2003.
3. Hoerling, M. P., and J. W. Hurrell: Understanding decadal variations in the North Atlantic Oscillation. NOAA CLIVAR-Atlantic, \$174,000, July 2000-June 2002.
2. Deser, C., and J. W. Hurrell: Indo-Pacific variability at interdecadal time scales. NOAA CLIVAR-Pacific, \$260,300, September 2000-August 2003.
1. Hurrell, J. W., and C. Deser: The annual cycle of climate change over the tropical and north Atlantic. NOAA CLIVAR-Atlantic, \$276,200, August 2000-July 2003.

Invited and Keynote Scientific Talks

- 167 invited talks, including national academies, Congressional testimonies and briefings, national/international laboratories and centers, university seminars, national/international conferences and workshops, colloquia and summer schools, and corporate and public meetings.

Professional Service

Elected Roles

- President-Elect, AGU Atmospheric Sciences Section, 2016-present.
- Councilor, American Meteorological Society, 2008-2010.

External Committees

30. Chair, Advisory Panel, Department of Earth, Atmospheric and Planetary Sciences, College of Science, Purdue University, 2019-present.
29. Member, Joint Scientific Committee, World Climate Research Programme, 2018-present.
28. Member, NOAA Climate Program Office Earth System Science and Modeling (ESSM) Division Advisory Panel, 2017-present.
27. Member, AMS Forecast Improvement Group, 2015-2017.
26. Member, AGU Revelle Medal Selection Committee, 2015-2016.

25. Member, International Scientific Organizing Committee: *WMO/WWRP/THORPEX Open Science Conference: Seamless Prediction of the Earth System*, Montreal, Canada, 2013-2014.
24. Member, Climate Working Group, NOAA Science Advisory Board, 2013-2016.
23. Member, Advisory Board of the Center for Climate Sciences, NASA JPL, 2012-present.
22. Chair, Scientific Organizing Committee: *WCRP Open Science Conference: Climate Research in Service to Society*, Denver, CO, 2010-2011.
21. Member, Local Organizing Committee: *WCRP Open Science Conference: Climate Research in Service to Society*, Denver, CO, October, 2010- 2011.
20. Member, NRC Committee on a National Strategy for Advancing Climate Modeling, 2011-2013.
19. Chair, Center for Ocean-Land-Atmosphere (COLA) Studies Scientific Advisory Board, 2010-2015.
18. Member, Nordic Center of Excellence: NorMER – Nordic Centre for the Research on Marine Ecosystems and Resources under Climate Change, 2010-2016.
17. Member, NOAA GFDL Review Board, 2009.
16. Member, Willis Reinsurance/UKMO/NCAS/NCAR Climate Liaison Committee, 2009-2015.
15. Co-chair, International Climate Variability and Predictability (CLIVAR) Scientific Steering Group, 2007-2012.
14. Member, NRC Committee on U.S. Climate Change Science Program, 2006-2009.
13. Member, International GLOBEC Scientific Steering Committee, 2005-2010.
12. Lead Author, U.S. CCSP Synthesis and Assessment Team: Product 1.1. Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences, 2004-2006.
11. Member, International CLIVAR/PAGES Intersection Working Group, 2004-2008.
10. Member, NRC Committee on Climate Data Records from Operational Satellites: Development of a NOAA Satellite Data Utilization Plan, 2003-2005.
9. Member, International CLIVAR Atlantic Implementation Panel, 1999-2006.
8. Co-chair, U.S. CLIVAR Atlantic Implementation Panel, 1999-2003.
7. Co-chair , U.S. Climate Variability and Predictability (CLIVAR) Scientific Steering Committee, 2003-2005; member 1998-2005.
6. Member, Atlantic Climate Variability Experiment (ACVE) Scientific Steering Committee, 1998-1999.
5. Member, National Research Council (NRC) Panel on the Global Energy and Water Cycle Experiment (GEWEX), 1997-2000.
4. Member, National Oceanic and Atmospheric Administration (NOAA) Atlantic Climate Change Scientific Advisory Committee, 1997-1998.
3. Member, American Meteorological Society (AMS) Committee on Meteorology and Oceanography of the Southern Hemisphere, 1995-1998.
2. Member, National Centers for Environmental Prediction/National Center for Atmospheric Research (NCEP/NCAR) Climate Data Assimilation System (CDAS) Reanalysis Advisory Panel, 1994-1998.

1. Member, Great Plains Regional Center of the National Institute for Global Environmental Change (GPRC-NIGEC) Proposal Review Board, 1994-2004.

Editorships

5. Volume editor, 2011-2013: *Climate Science for Serving Society: Research, Modeling and Prediction Priorities*. Springer Press, 2013, DOI 10.1007/978-94-007-692-1, 484 pp.
4. Review Editor, 2010-2013: IPCC 2013, *Observations: Atmosphere and Surface*, Chapter 2 of *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Stocker, T.F. et al. Eds. Cambridge University Press, 1535 pp.
3. Associate Editor-in-Chief, 2005-2008: *Climate Research: Interactions of Climate with Organisms, Ecosystems and Human Societies*. **Inter-Research**, Oldendorf/Luhe, Germany.
2. Co-editor: *Marine Ecosystems and Climate Variation: The North Atlantic*. Oxford University Press, 2004, 227 pp.
1. Volume editor: *The North Atlantic Oscillation: Climatic Significance and Environmental Impact*. American Geophysical Union, *Geophysical Monograph*, 2003, **134**, 279 pp.

Professional Reviews

- Including 17 professional society journals, and NASA, NOAA, DOE, NSF and NERC (UK) grant proposals

Professional Memberships

- American Meteorological Society (1985-present)
- American Geophysical Union (1996-present)
- Royal Meteorological Society (2000-present)

Professional Meetings

- Convener or co-covener of 26 professional workshops, symposia and/or colloquia
- Chair or co-chaired of 18 sessions at professional meetings

Courses, Students and Post-doctoral Scientists

- Developed CSU ATS 580A4: Geoengineering the Climate
- Thesis committee member for four Ph. D. candidates and one M.S. candidate
- Research mentor for six SOARS (Significant Opportunities in Atmospheric Research and Science) proteges
- Supervisor for seven post-doctoral NCAR Fellows