

SUSAN KATHRYN AVERY

Personal Information:

Date of Birth: January 5, 1950

Citizenship: U.S.A.

Education

B.S., Michigan State University, Physics, 1972

M.S., University of Illinois, Physics, 1974

Ph.D. University of Illinois, Atmospheric Science, 1978

Honors and Awards

National Academy of Sciences, Charter Member of the National Associates Program, Recognition of extraordinary contributions to the National Academies through pro bono service to the National Research Council.

University of Colorado Robert L. Stearns Award, Recognition for exceptional achievement and/or service, 1999.

Elizabeth Gee Memorial Lectureship Award, Recognition for scholarly contributions, distinguished teaching and advancing women in the academic community, University of Colorado, 1998.

Institute of Electrical and Electronics Engineers, Fellow, 1998

Margaret Willard Award, University Women's Club, Recognition of outstanding contributions to the University of Colorado at Boulder, 1995

American Meteorological Society, Fellow, 1994

Faculty Fellowship, University of Colorado, 1994

Sabbatical Study Leave, University of Colorado, 1993

NSF - Faculty Award for Women, 1991

NCAR Outstanding Publication Award, 1990

NSF Visiting Professorship for Women in Science and Engineering, 1982-83

CIRES Visiting Fellowship, 1982-83

Scholarship Interests

Science

- Wave dynamics of the atmosphere including the interactions between large-scale and small-scale motions.
- Precipitation studies using combined ground-based radars.
- Interdisciplinary integrated research on climate variability and water in the Interior West.

Engineering

- Development and testing of new ground-based Doppler radar techniques for observing the neutral atmosphere.
- Development and use of new signal processing algorithms for radar data analysis.
- Design of new experiments using atmosphere radars.

Communication

- Role of science in decision – making processes.
- Public communication of science and technology.

Professional Experience

3/96 – present	Center for Limb Atmospheric Sounding (CLAS), University of Colorado, Boulder, CO 80309-0216: Director
9/94 – present	CIRES, University of Colorado, Boulder, CO 80309-0216: Director
8/92 - present	Dept. of Electrical and Computer Engineering, University of Colorado, Boulder, CO 80309: Professor
9/83 - present	CIRES, University of Colorado, Boulder, CO 80309: Fellow
9/89 - 12/92	Associate Dean of Research and Graduate Education College of Engineering, University of Colorado, Boulder, CO 80309
9/85 - 8/92	Dept. of Electrical and Computer Engineering University of Colorado, Boulder, Colorado 80309: Associate Professor
9/82 - 9/83	CIRES, University of Colorado, Boulder, CO 80309: Visiting Fellow
8/78 - 6/82	Dept. of Electrical Engineering, Aeronomy Laboratory, University of Illinois, Urbana, IL 61801: Assistant Professor
6/78 - 8/78	University of Illinois, Aeronomy Laboratory, Urbana, IL: Research Associate

Courses Taught

Circuits and Electronics I
Linear System Theory
Upper Atmosphere Dynamics (course development)
Chemistry and Physics of the Middle Atmosphere
Introduction to Radar and Remote Sensing (course development)
Radar Science and Techniques (course development)
Geophysical Data Analysis (course development)
Policy Responses to Global Environmental Change

Professional Organizations

American Meteorological Society, Fellow
American Geophysical Union, Member
Institute of Electrical and Electronic Engineers, Fellow
Sigma Xi
USNC/URSI - Commissions F,G
American Society for Engineering Education
American Association for the Advancement of Science

Papers Published (Journals)

1. Schafer, Robert, S.K. Avery, P. May, D. Rajopadhyaya, C. Williams, 2001: Estimation of drop size distributions from dual frequency wind profiler spectra using deconvolution and a non-linear least squares fitting technique, accepted for publication in *J. of Atmos. Oceanic Tech.*
2. Cifelli, R., C.R. Williams, D.K. Rajopadhyaya, S.K. Avery, K.S. Gage, and P.T. May, 2000: Drop-size distribution characteristics in tropical mesoscale convective systems, *Journal of Applied Meteorology*, **39**, 760-777.
3. Ware, R.H., D.W. Fulker, S.A. Stein, D.N. Anderson, S.K. Avery, R.D. Clark, K.K. Droegemeier, J.P. Kuettner, J.B. Minster, and S. Sarooshian, Suominet, 2000: A real-time national GPS network for atmospheric research and education, *Bulletin of the American Meteorological Society*, **81**, 677-694.
4. Rajopadhyaya, D., S.K. Avery, P. May, R. Cifelli, 1999: Comparison of precipitation estimation using single and dual frequency wind profilers: Simulations and experimental results, *J. of Atmos. And Oceanic Tech.*, **16**, 165-173.
5. Chang, J.L., S.K. Avery, R.A. Vincent, 1999: New narrow-beam meteor radar results at Christmas Island: Implications for diurnal wind estimation, *Radio Science*, **34**, 179-197.
6. McKague, D., K. Franklin Evans, and S.K. Avery, 1998: Assessment of the effects of drop size distribution variations retrieved from UHF radar on passive microwave remote sensing of precipitation, *J. Appl. Met*, **37**, 155-165.
7. Rajopadhyaya, D., P. May, R. Cifelli, S.K. Avery, C. Williams, W. Ecklund, 1998: The effect of vertical air motions on rain rates and median volume diameter determined from combined UHF and VHF wind profiler measurements and comparisons with rain gauge measurements, *J. of Atmos. and Oceanic Tech.*, **15**, 1306-1319.
8. Hagan, M.E., J.L. Chang, and S.K. Avery, 1997: Global scale wave model estimates of non migrating tidal effects, *J. Geophys. Res.*, **102**, 16439-16452.
9. Valentic, T.A., S.K. Avery, J.P. Avery, R.A. Vincent, M.A. Cervera, I.M. Reid, W.G. Elford, 1997: A comparison of winds measured by meteor radar systems and an MF radar at Buckland Park, *Radio Science*, **32**, 867-874.
10. Valentic, T.A., J.P. Avery, S.K. Avery, R.C. Livingston, 1997: Self-survey calibration of meteor radar antenna arrays, *IEEE Trans. Geosc. Remote Sensing*, **35**, 524-531
11. Chang, J.L., S.K. Avery, A.C. Riddle, S.E. Palo, K.S. Gage, 1997: First results of tropospheric gravity wave momentum flux measurement over Christmas Island, *Radio Science*, **32**, 727-748.

12. Chang, J.L. and S.K. Avery, 1997: Observations of the diurnal tide in the mesosphere and lower thermosphere over Christmas Island, *J. Geophys. Res.*, **102**, 1895-1907.
13. Valentich, T.A., J.P. Avery, S.K. Avery, M.A. Cervera, R.A. Vincent, I.M. Reid, W.G. Elford, 1996: A comparison of meteor radar systems at Buckland Park, *Radio Sci.*, **31**, 1313-1329.
14. Palo, S.E. and S.K. Avery, 1996: Observations of the quasi two-day wave in the middle and lower thermosphere over Christmas Island, *J. Geophys. Res.*, **101**, 12833-12846.
15. Williams, C.R. and S.K. Avery, 1996: Diurnal winds observed in the tropical troposphere using 50 MHz wind profilers, *J. Geophys. Res.*, **101**, 15051-15060.
16. Williams, Christopher R., and S.K. Avery, 1996: Diurnal nonmigrating tidal oscillations forced by deep convective clouds, *J. Geophys. Res.*, **101**, 4079-4091.
17. Connor, L.N., and S.K. Avery, 1996: A three-year gravity wave climatology of the mesosphere and lower thermosphere over Kauai, *J. Geophys. Res.*, **101**, 4065-4077.
18. Valentich, T. A., J. P. Avery, S.K. Avery, 1996: MEDAC/SC: A third generation Meteor Echo Detection and Collection system, *IEEE Transactions on Geoscience and Remote Sensing*, **34**, 15-21.
19. Hedin, A.E., E.L. Fleming, A.H. Manson, F.J. Schmidlin, S.K. Avery, R.R. Clark, S.J. Franke, G.J. Fraser, T. Tsuda, F. Vial, and R.A. Vincent, 1996: Empirical wind model for the upper, middle and lower atmosphere, *J. Atmos. Terr. Phys.*, **58**, 1421-1447.
20. Berg, W. and S.K. Avery, 1995: Evaluation of monthly rainfall estimates derived from the special sensor microwave/imager (SSM/I) over the tropical Pacific, *J. Geophys. Res.*, **100**, 1295-1315.
21. Palo, S.E. and S.K. Avery, 1995: Observations of the meridional quasi 2-day wave in the mesosphere and lower thermosphere at Christmas Island, *AGU Geophysics Monograph Series*, **87**, 101-110.
22. Wilheit, T., R. Adler, S. Avery, E. Barrett, P. Bauer, W. Berg, A. Chang, J. Ferriday, N. Grody, S. Goodman, C. Kidd, D. Kniveton, C. Kummerow, A. Mugnai, W. Olson, G. Petty, A. Shibata, E. Smith, 1994: Algorithms for the retrieval of rainfall from passive microwave measurements, *Remote Sensing Reviews*, **11**, 163-194.
23. Ferriday, J.G. and S.K. Avery, 1994: Passive microwave remote sensing of rainfall with SSM/I: Algorithm development and implementation, *J. Appl. Meteor.*, **33**, 1587-159
24. Maguire, W.B. and S.K. Avery, 1994: Retrieval of raindrop size distributions using two Doppler wind profilers: Model sensitivity testing, *J. Appl. Meteor.*, **33**, 1623-1635
25. Berg, W. and S.K. Avery, 1994: Rainfall variability over the tropical Pacific from July, 1987 through December, 1991 as inferred via monthly estimates from SSM/I, *J. Appl. Meteor.*, **33**, 1468-1485.
26. Salah, J.E., R.R. Clark, J.M. Forbes, A.H. Manson, S.K. Avery, and R. Schindler, 1994: Radar observations of the semi-diurnal tide in the mesosphere and lower thermosphere at midlatitudes, *J. Atmos. Terr. Phys.*, **56**, 1251-1262.

27. Forbes, J.M., A.H. Manson, R.A. Vincent, G.J. Fraser, F. Vial, R. Wand, S.K. Avery, R.R. Clark, R. Johnson, R. Roper, T. Schminder, T Tsuda, and E.S. Kazimirovsky, 1994: Semidiurnal tide in the 80-150 km region: An assimilative data analysis, *J. Atmos. Terr. Phys.*, **56**, 1237-1250.
28. Angevine, W.M., A.B. White, S.K. Avery, 1994: Boundary layer top and entrainment zone characterization with a boundary layer profiler, *Boundary Layer Meteorology*, **68**, 375-385.
29. Clark, R.R., A.C. Current, A.H. Manson, C.E. Meek, S.K. Avery, S.E. Palo and T. Aso, 1994: Hemispheric properties of the 2-d wave from the mesosphere-lower thermosphere radar observations, *J. Atmos. Terr. Phys.*, **56**, 1279-1288.
30. Angevine, W.M., S.K. Avery and G.L. Kok, 1993: Virtual heat flux measurement from a boundary layer profiler/RASS compared to aircraft measurements, *J. Appl. Met.*, **32**, 1901-1907.
31. Palo, S.E. and S.K. Avery, 1993: Mean winds and the semiannual oscillation in the mesosphere and lower thermosphere at Christmas Island, *J. Geophys. Res.*, **98**, 20385-20400.
32. Portnyagin, Y.I., J.M. Forbes, G.J. Fraser, R.A. Vincent, S.K. Avery, I.A. Lysenko and N.A. Makarov, 1993: Dynamics of the Antarctic and Arctic mesosphere and lower thermosphere regions - I. The prevailing wind, *J. Atmos. Terr. Phys.*, **55**, 827-841.
33. Portnyagin, Y.I., J.M. Forbes, G.J. Fraser, R.A. Vincent, S.K. Avery, I.A. Lysenko and N.A. Makarov, 1993: Dynamics of the Antarctic and Arctic mesosphere and lower thermosphere regions - II. The semidiurnal tide., *J. Atmos. Terr. Phys.*, **55**, 843-855.
34. Angevine, W.M., S.K. Avery, W.L. Ecklund and D.A. Carter, 1993: Fluxes of heat and momentum measured with a boundary layer wind profiler radar-Radio acoustic sounding system, *J. Appl. Meteor.*, **32**, 73-80.
35. Manson, A.H., C.E. Meek, S.K. Avery, R.R. Clark, R. Schminder, D. Kurschner, and R.A. Vincent, 1992: Radars of the mesosphere, lower thermosphere network: their capability to measure winds and waves and their role in STEP, *Adv. Sp. Res.*, **12**, 277-287.
36. Williams, C.R. and S.K. Avery, 1992: Analysis of long period waves using the MST radar at Poker Flat, Alaska, *J. Geophys. Res.*, **97**, 20,855-20,861.
37. Williams, C.R., S.K. Avery, J.R. McAfee and K.S. Gage, 1992: Comparison of observed diurnal and semidiurnal tropospheric winds at Christmas Island with tidal theory, *Geophys. Res. Lett.*, **19**, 1471-1474.
38. Currier, P.E., S.K. Avery, B.B. Balsley, K.S. Gage and W.L. Ecklund, 1992: Combined use of 50 MHz and 915 MHz wind profilers in the estimation of raindrop size distributions, *Geophys. Res. Lett.*, **19**, 1017-1020.
39. Manson, A.H., C.E. Meek, S.K. Avery, G.J. Fraser, R.A. Vincent, A. Phillips, R.R. Clark, R. Schminder, D. Kurschner, and E.S. Kazimirovsky, 1991: Tidal winds from the mesosphere, lower thermosphere global radar network during the second LTCS campaign: December 1988, *J. Geophys. Res.*, **96**, 1117-1127.
40. Van Baelen, J.S., A.D. Richmond, T. Tsuda, S.K. Avery, S. Kato, S. Fukao, and M. Yamamoto, 1991: Radar interferometry technique and anisotropy of the echo-power distribution: First results, *Radio Sci.*, **26**, 1315-1326.

41. Avery, S.K. and S.E. Palo, 1991: Mean winds and waves in the troposphere during Aloha-90, *Geophys. Res. Lett.*, **18**, 1317-1320.
42. Manson, A.H., C.E. Meek, R.A. Vincent, A. Phillips, S.K. Avery, G.J. Fraser, M.J. Smith, J.L. Fellous, M. Massebeuf, E. Fleming, and S. Chandra, 1991: Comparisons between satellite-derived gradient winds and radar-derived winds from the CIRA-86, *J. Atmos. Sci.*, **48**, 411-428.
43. Stening, R.J., S.K. Avery, and D. Tetenbaum, 1990: Observations of lunar tides in the upper atmosphere winds at Poker Flat, Alaska, *J. Atmos. Terr. Phys.*, **52**, 715-721.
44. Kwon, K.H., C.S. Gardner, S.K. Avery and J.P. Avery, 1990: Correlative radar and airborne sodium lidar observations of the vertical and horizontal structure of gravity waves and tides near the mesopause, *J. Geophys. Res.*, **95**, 13,737-13,748.
45. Gage, K.S., B.B. Balsley, W.L. Ecklund, R.F. Woodman, and S.K. Avery, 1990: A trans-Pacific network of wind profiling Doppler radars for tropical atmospheric research, *EOS*, **71**, 1851-1854.
46. Avery, S.K., J.P. Avery, T.A. Valentis, S.E. Palo, M.J. Leary, R.L. Obert, 1990: A new MEDAC system: Christmas Island mesospheric wind measurements, *Radio Sci.*, **25**, 657-669.
47. Van Baelen, J.S., T. Tsuda, A.D. Richmond, S.K. Avery and S. Kato, 1990: Comparison of VHF Doppler beam swinging and spaced antenna drift observations with the MV radar: First results, *Radio Sci.*, **25**, 629-640.
48. Avery, S.K., 1990: The meteor radar as a tool for upper atmosphere research, *Adv. Space Res.*, **10**, 193-200.
49. Avery, S.K., R.A. Vincent, A. Phillips, A.H. Manson and G.J. Fraser, 1989: High latitude tidal behavior in the mesosphere and lower thermosphere, *J. Atmos. Terr. Phys.*, **51**, 595-608
50. Dowski, E.R., C.A. Whitmore and S.K. Avery, 1988: Estimation of randomly sampled sinusoids in additive noise, *IEEE Trans. Acoust., Speech, Signal Processing*, **36**, 1906-1908.
51. Wang, S.T., D. Tetenbaum, D.B. Balsley, S.K. Avery, and J.P. Avery, 1988: A meteor echo detection and collection system for use on VHF radars, *Radio Sci.*, **23**, 46-54.
52. Manson, A.H., C.E. Meek, S.K. Avery and D. Tetenbaum, 1988: Comparison of mean winds and tidal fields at Saskatoon and Poker Flat during 1983/1984, *Physica Scripta*, **37**, 169-177.
53. Manson, A.H., C.E. Meek, M. Massebeuf, J.L. Fellows, W.G. Elford, R.A. Vincent, R.L. Craig, R.G. Roper, S. Avery, B.B. Balsley, G. J. Fraser, M.J. Smith, R.R. Clark, S. Kato, T. Tsuda, 1987: Mean winds of the upper atmosphere (70-100km) from the global radar network: Comparisons with CIRA 72, and new rocket and satellite data, *Adv. Space Res.*, **7**, 143-153.
54. Smith, A.K. and S.K. Avery, 1987: A resonant wave in a numerical model of the 1979 sudden stratospheric warming, *J. Atmos. Sci.*, **44**, 3150-3161.
55. Forbes, J.M., R. Vincent, G. Fraser, S. Avery, S. Bowhill, R. Clark, K. Greisiger, A. Manson, R. Roper, and T. Tsuda, 1987: On the specification of TGCM tidal lower boundary conditions from radar wind measurements during the June 1984 GTMS period, *Adv. Space Res.*, **7**, 295-298.
56. Garcia, R.R., S. Solomon, S.K. Avery, G.C. Reid, 1987: Transport of nitric oxide and the D-region winter anomaly, *J. Geophys. Res.*, **92**, 977-994.

57. Tetenbaum, D., S.K. Avery and A.C. Riddle, 1986: Observations of mean winds and tides in the upper mesosphere during 1980-1984 using the Poker Flat, Alaska MST radar as a meteor radar, *J. Geophys. Res.*, **91**, 14,539-14,555.
58. Tetenbaum, D., S.K. Avery, and S.A. Bowhill, 1986: Simulation studies of tidal analysis using meteor echo returns, *Radio Sci.*, **21**, 955-963.
59. Manson, A.H., C.E. Meek, M. Massebeuf, J.L. Fellous, W.G. Elford, R.A. Vincent, R.L. Craig, R.G. Roper, S.K. Avery, B.B. Balsley, G. J. Fraser, M.J. Smith, R.R. Clark, S. Kato, T. Tsuda, and A. Ebel, 1985: Mean winds of the upper middle atmosphere: A global distribution from radar systems, *Adv. Space Res.*, **5**, 135-144.
60. Jones, G. and S.K. Avery, 1984: The transport of nitric oxide by the mean circulation and planetary waves, *J. Atmos. Sci.*, **41**, 2756-2773.
61. Alpert, J.C., M.A. Geller, and S.K. Avery, 1983: The response of stationary planetary waves to tropospheric forcing, *J. Atmos. Sci.*, **40**, 2467-2483.
62. Avery, S.K. and D. Tetenbaum, 1983: Simultaneous studies of sodium and winds using the Urbana meteor radar and lidar systems, *J. Atmos. Terr. Phys.*, **45**, 753-764.
63. Avery, S.K., A.C. Riddle, and B.B. Balsley, 1983: The Poker Flat, Alaska MST radar as a meteor radar, *Radio Sci.*, **18**, 1021-1027.
64. Avery, S.K. and I.D. Countryman, 1980: Coherent-scatter measurements of middle-atmosphere tides and winds., *J. Meteor. Soc. Japan*, **58**, 318-320.
65. Schoeberl, M.R., M.A. Geller, and S.K. Avery, 1979: The structure of stationary planetary waves in winter: a correction, *J. Atmos. Sci.*, **36**, 365-369.
66. Geller, M.A., and S.K. Avery, 1978: Northern Hemisphere distributions of diabatic heating in the troposphere derived from general circulation data, *Mon. Wea. Rev.*, **106**, 629-636.

Other Reviewed Publications

1. A Climate Services Vision: First Steps Toward the Future, 2001: National Research Council, National Academy Press, Washington, D.C.
2. Review of NASA's Earth Science Enterprise Research Strategy for 2000-2010, Committee to Review NASA's ESE Science Plan, Space Studies Board, Board on Atmospheric Sciences and Climate, Board on Earth Sciences and Resources, Ocean Studies Board, Policy Division, National Research Council, National Academy of Sciences, Washington, DC.
3. From Research to Operations in Weather Satellites and Numerical Weather Prediction: Crossing the Valley of Death, 2000: Board on Atmospheric Sciences and Climate, Commission on Geosciences, Environment, and Resources, National Research Council, National Academy Press, Washington, DC.
4. Future Directions for the National Science Foundation's Arctic Natural Sciences Program, 1998: National Research Council, Polar Research Board, Commission on Geosciences, Environment and Resources, and National Research Council, National Academy Press, Washington, DC.

Other Published Material

1. Avery, S.K., R.M. Dole, 2001: Climate variability and water in the Interior West, Proceedings of the 12th Symposium on Global Change Studies and Climate Variations, 81st AMS Annual Meeting, Albuquerque, New Mexico, p. 120-123.
2. Schafer, R., S. K. Avery, 2000: Analysis of tropospheric waves with periods of 1 to 30 days using the tropical pacific profiler network, *Proceedings of the 24th Conference on Hurricanes and Tropical Meteorology*, American Meteorological Society, Ft. Lauderdale, FL, p. 43-44.
3. Avery, S.K., Robert Schafer, Peter May, Deepak Rajopadhyaya, Christopher Williams, 2000: A comparison of two techniques for the retrieval of rainfall distributions from dual frequency wind profiler observations, *Proceedings of the 5th Tropospheric Profiler Symposium*, Adelaide, Australia, p. 311-313.
4. Schafer, Robert, S.K. Avery, 2000: A comparison of wind profiler measurements and the NCEP/NCAR re-analysis over the equatorial Pacific, *Proceedings of the 5th Tropospheric Profiler Symposium*, Adelaide, Australia, p. 149-151.
5. Schafer, Robert, Susan Avery, Katherine Harris, and George Kiladis, 2000: Observation of mixed Rossby gravity Waves over the central equatorial Pacific, using wind profilers and the NCEP/NCAR re-analysis, *Proceedings of the 5th Tropospheric Profiler Symposium*, Adelaide, Australia, p. 153-155.
6. Avery, S.K., D. Rajopadhyaya, J. Vivekanandan, P. May, R. Cifelli, 1998: Use of wind profilers in the estimation of precipitation characteristics in the ice phase region of clouds, *Proceedings of the Fourth International Symposium on Tropospheric Profiling: Needs and Technologies*, Snowmass, CO, September 1998, 22-24. Please note: Within the conference abstract booklet, this article is incorrectly titled "Comparison of profiler and polarimetric precipitation estimation".
7. Vivekanandan, J., D. Rajopadhyaya, and S.K. Avery, 1998: Comparison of profiler and polarimetric precipitation estimation, *Proceedings of the Fourth International Symposium on Tropospheric Profiling: Needs and Technologies*, Snowmass, CO, 317-319.
8. Rajopadhyaya, D., S.K. Avery, R. Cifelli, P. May, 1998: Contamination of hydrometeor echo in the estimation of profiler vertical velocity, *Proceedings of the Fourth International Symposium on Tropospheric Profiling: Needs and Technologies*, Snowmass, CO, 252-254.
9. Cifelli, R., D. Rajopadhyaya, S. Avery, C. Williams, K. Gage, 1997: Wind profiler retrieved hydrometeor size distributions in the mixed phase region of precipitating clouds: Initial approach and comparison of dual-polarimetric radar measurements, *Proceedings from AMS 28th Conference on Radar Meteorology*, Austin, TX, 330-331.
10. Rajopadhyaya, D., R. Cifelli, S. Avery, P. May, C. Williams, W. Ecklund, 1997: Comparison of profiler retrieval techniques to determine rainrates, *Proceedings from AMS 28th Conference on Radar Meteorology*, Austin, TX, 135-136.
11. Avery, S., D. Rajopadhyaya, R. Cifelli, P. May, C. Williams, W. Ecklund, 1997: Multiple wavelength wind profiler precipitation estimation: A quantitative study of advantages and

- disadvantages, *Proceedings from AMS 28th Conference on Radar Meteorology*, Austin, TX, 75-76.
12. Cifelli, R., D. Rajopadhyaya, S. Avery, C. Williams, P. May, 1997: Wind profiler retrievals of drop-size distribution characteristics in a precipitating system near Darwin, N.T., Australia, *Proceedings from AMS 22nd Conference on Hurricanes*, Fort Collins, CO, 382-383.
 13. Johnston, P.E., S.K. Avery, B.B. Balsley, D.A. Carter and K.S. Gage, 1997: A trans-Pacific profiler network for tropical dynamics and climate research, *Proceedings from AMS 22nd Conference on Hurricanes*, Fort Collins, CO, 503-504.
 14. Cifelli, R., D. Rajopadhyaya, S. Avery, C. Williams, W. Ecklund, P. Johnston, K. Gage, S. Rutledge, L. Carey, J. Wilson, 1997: The retrieval of hydrometeor size distributions using wind profiler and polarimetric radar measurements: Initial results from NE Colorado, *Proceedings from AMS 13th Conference on Hydrology*, Long Beach, CA, 129-132.
 15. Rajopadhyaya, D., R. Cifelli, S.K. Avery, C. Williams, W. Ecklund, K. Gage, P. May, 1997: Rain rates determined from combined UHF and VHF wind profiler measurements, *Proceedings from AMS 13th Conference on Hydrology*, Long Beach, CA, 125-128.
 16. Avery, S.K., W.B. Maguire II, 1997: Rain characteristics in the tropical Pacific determined from the combined use of VHF and UHF wind profilers, *Proceedings from AMS 13th Conference on Hydrology*, Long Beach, CA, 299-301.
 17. Valentic, T.A., S.K. Avery, J.P. Avery, R.A. Vincent, M.A. Cervera, I.M. Reid, W.G. Elford, 1996: A comparison of winds measured by meteor radar systems and an MF radar at Buckland Park, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 154-157.
 18. Avery, S.K., P.D. Try, R.A. Anthes, R.E. Hallgren, F. Seitz, B.D. Santer, B. Bolin, J. Houghton, and L.G.M. Filho, Open Letter to Ben Santer, *Bulletin of the American Meteorological Society*, **77**, 1961-1966, 1996.
 19. Avery, S.K., 1996: Combined MST/ST Radar and Other Ground-Based, In Situ or Space-Borne Measurements, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program.
 20. Palo, Scott, J.L. Chang, S.K. Avery, A.C. Riddle, K.S. Gage, 1996: Detection of Outliers in Stratospheric/Tropospheric Wind Velocity Estimates, *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 237-240.
 21. Gage, K.S., D.A. Carter, J.R. McAfee, B.B. Balsley, W.L. Ecklund, C.R. Williams, A.C. Riddle, R.E. Johnston, S.K. Avery, R.F. Woodman, 1996: Status of the NOAA/CU Trans-Pacific Profiler Network, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 331-334.
 22. Valentic, T.A., S.K. Avery, J.P. Avery, 1996: Meteor Radar Interferometry and Array Calibration, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 399-402.

23. Chang, J.L., S.K. Avery, A.C. Riddle, S.E. Palo, J.R. McAfee, K.S. Gage, 1996: Preliminary Observations of Tropospheric Gravity Wave Momentum Fluxes Measured With the Christmas Island ST Radar, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 50-53.
24. Gage, K.S., D.A. Carter, J.R. McAfee, B.B. Balsley, W.L. Ecklund, C.R. Williams, A.C. Riddle, R.E. Johnston, S.K. Avery, and R.F. Woodman, 1996: Status of the NOAA/CU Trans-Pacific profiler network, in *Proceedings of the seventh workshop on technical and scientific aspects of MST radar*, Hilton Head Island, South Carolina. Solar-Terrestrial Energy Program, 331-334.
25. McKague, D., K. Franklin, S. Avery, 1995: Raindrop size distributions retrieved from UHF and VHF radars: Implications for passive microwave remote sensing of precipitation, *Proceedings of Radar Meteorology Conference*.
26. Maguire, W.B. II, and S.K. Avery, 1995: An analysis of tropical precipitation utilizing two Doppler wind profilers, *Proceedings of Third International Symposium on Tropospheric Profiling: Needs and Technologies*, 195-197.
27. Avery, S.K., 1995 (invited): Ground based radar measurements of tides and planetary waves in the mesosphere and lower thermosphere, AGU Meeting, San Francisco.
28. Chang, J.L., and S.K. Avery, 1994: Tropospheric observations of internal gravity waves in the tropical Pacific, *Proceedings of Third International Symposium on Tropospheric Profiling: Needs and Technologies*, 195-197.
29. Christensen, A.B., R.L. Walterscheid, M.N. Ross, C.I. Meng, L.J. Paxton, D.E. Anderson, G. Crawley, S. Avery, J.D. Craven, R.R. Meier, D.J. Strickland, 1994: The global ultraviolet imager (GUVI) for the NASA TIMED mission, *SPIE Proc.*, 2266, 451-466.
30. Hedin, A.E., E.L. Fleming, A.H. Monson, F.J. Schmidlin, S.K. Avery and S.J. Franke, 1993: Empirical wind model for the middle and lower atmosphere - Part 1: Local time average, NASA Technical Memorandum 104581, 85 pp.
31. Hedin, A.E., E.L. Fleming, A.H. Manson, F.J. Schmidlin, S.K. Avery, R.R. Clark, S.J. Franke, G.J. Fraser, T. Tsuda, F. Vial, R.A. Vincent, 1993: Empirical wind model for the middle and lower atmosphere - Part 2: Local time variations, NASA Technical Memorandum 104592, 98 pp.
32. Maguire, W.B. II, and S.K. Avery, 1993: Retrieval of raindrop size distributions using two doppler wind profilers: Model results, National Radio Science Meeting, Boulder, CO.
33. Palo, S.E., and S.K. Avery, 1993: A statistical technique for the detection of outliers in MST radar wind velocity estimates, National Radio Science Meeting, Boulder, CO.
34. Avery, J.P., T.A. Valentic, S.K. Avery, M.A. Cervera, R.A. Vincent, and I.M. Reid, 1993: A comparison of meteor radar detection systems, National Radio Science Meeting.
35. Connor, L.N., and S.K. Avery, 1993: A three year gravity wave climatology of the mesosphere and lower thermosphere over Kauai, National Radio Science Meeting, Boulder, CO.
36. Palo, S.E., S.K. Avery, M.E. Hagan, W.J. Randel, 1993: Initial model results relating to the sensitivity of the quasi-two day wave to changes in the equatorial zonal mean wind field, National Radio Science Meeting.

37. Van Baelen, J.S., T. Tsuda, A.D. Richmond, S.K. Avery, S. Kato, S. Fukao, and M. Yamamoto, 1992: Comparison of simultaneous VHF SA and RI wind measurements with DBS results in the troposphere and lower thermosphere using the MU radar: *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 307-310.
38. Van Baelen, J.S., T. Tsuda, A.D. Richmond, S.K. Avery, S. Kato, S. Fukao, and M. Yamamoto, 1992: VHF radar interferometry and anisotropy of the echo power distribution, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 99-103.
39. Connor, L.N. and S.K. Avery, 1992: First wind measurements from the 1.98 MHz partial reflection radar at Barking Sands, Kauai, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 122-127.
40. Palo, S.E. and S.K. Avery, 1992: Analysis of nonstationary time series using the Wigner-Ville distribution, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of the MST Radar*, 464-469.
41. Gage, K.S., W.L. Ecklund, D.A. Carter, A.C. Riddle, P.E. Johnston, S.K. Avery and B.B. Balsley, 1992: The status of the Christmas Island radar, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 474-475.
42. Larsen, M.F., S.K. Avery, R. Tsunoda, 1992: The proposed Greenland partial reflections drifts radar, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 499-500.
43. Valentic, T.A., S.K. Avery and J.P. Avery, 1992: Detection of meteor arrival angles using MEDAC and interferometry, *Proceedings of the 5th Workshop on Technical and Scientific Aspects of MST Radar*, 512-518.
44. Williams, C.R., S.K. Avery, J.R. McAfee and K.S. Gage, 1991: A first look at annual and interannual variability of tropospheric diurnal and semidiurnal oscillations using the Christmas Island Wind Profiler, *Proceedings of the Sixteenth Annual Climate Diagnostics Workshop*, 69-74.
45. Currier, P.E., S.K. Avery, B.B. Balsley, K.S. Gage, and W. L. Ecklund, 1991: Use of two wind profilers for precipitation studies, *Proceedings of AMS Radar Meteorology Conference*, Paris, June 1991, 261-264.
46. Van Baelen, J.S., A.D. Richmond, S.K. Avery, T. Tsuda, S. Kato, S. Fukao, and M. Yamamoto, 1991: Three-dimensional VHF radar interferometry for wind profiling in the troposphere and the lower stratosphere: Theory and first results, *Proceedings of 7th Symposium on Meteorological Observations and Instrumentation*, 370-400.
47. Van Baelen, J.S., T. Tsuda, A.D. Richmond, S.K. Avery, S. Kato, S. Fukao, and M. Yamamoto, 1991: A comparison of atmospheric radar techniques with the MU radar: Doppler beam swinging vs. spaced antenna and interferometry, *Proceedings of the 7th Symposium on Observations and Instrumentation*, J62-J63.
48. Gage, K.S., B.B. Balsley, W.L. Ecklund, R.F. Woodman and S.K. Avery, 1989: A trans-Pacific network of wind profiling Doppler radars for tropical atmospheric research, *Middle Atmosphere Program Handbook*, 28, 44-55.
49. Balsley, B.B., W.L. Ecklund, D.A. Carter, K.S. Gage, R. Mugica, A. Mabres, R. Rodriguez, S.K. Avery, E.J. Violette and R.F. Woodman, 1989: The ST radar under construction at Piura, Peru (5° S, 81° W), *Middle Atmosphere Program Handbook*, 28, 510.

50. Gage, K.S., B.B. Balsley, D.A. Carter, W.L. Ecklund, J.R. McAfee and S.K. Avery, 1989: The Christmas Island ST radar (2° N, 157° W), *Middle Atmosphere Program Handbook*, 28, 498-499.
51. Van Baelen, J.S., A.D. Richmond, S.K. Avery, T. Tsuda, S. Kato and S. Fukao, 1989: SAD and interferometric analysis with the MU radar: Simulations and preliminary results, *Middle Atmosphere Program Handbook*, 28, 416-423.
52. Currier, P.E. and S.K. Avery, 1989: Use of two wind profilers for precipitation studies, *Middle Atmosphere Program Handbook*, 28, 182-184.
53. Avery, S.K., R.L. Obert and J.P. Avery, 1989: Observations of equatorial mesospheric mean winds and tides, *Middle Atmosphere Program Handbook*, 28, 64-67.
54. Avery, S.K., 1989: The meteor radar as a tool for upper atmosphere research, *Middle Atmosphere Program Handbook*, 27, 160-172.
55. Avery, S.K., 1987: Meteor detection on ST(MST) radars, *Middle Atmosphere Program Handbook*, 25, 361-375.
56. Avery, S.K. and B.B. Balsley, 1984: Data base management - MSTRAC, *Middle Atmosphere Program Handbook*, 14, 300-301.
57. Tetenbaum, D. and S.K. Avery, 1984: Interpolation problems in meteor radar analysis, *Middle Atmosphere Program Handbook*, 14, 294-296.
58. Avery, S.K. and B.B. Balsley, 1984: Opportunities for modest observational studies of tropical atmospheric dynamics, *Conference Digest for 7th International Symposium on Equatorial Aeronomy*, March 22-29, Paper #8-4.
59. Avery, S.K. and D.A. Carter, 1983: Techniques for studying gravity waves and turbulence: Horizontal, vertical, and temporal resolution needed, *Middle Atmosphere Program Handbook*, 9, 247-249.
60. Avery, S.K., 1983: Meteorological and dynamical requirements for MST radar networks: Waves, *Middle Atmosphere Program Handbook*, 9, 30-33.
61. Peterson, M.J. and S.K. Avery, 1982: Microcomputer data collection for the meteor radar system, *Aeronomy Report 104*, University of Illinois.
62. Jones, G.A. and S.K. Avery, 1982: The transport of nitric oxide in the upper atmosphere by planetary waves and the zonal mean circulation, *Aeronomy Report 103*, University of Illinois.
63. Tetenbaum, D. and S.K. Avery, 1981: Correlative studies of the mesospheric sodium layer at Urbana, *Aeronomy Report 98*, University of Illinois.
64. Enge, P.K. and S.K. Avery, 1979: Day-to-day variations of atmospheric tides as observed by meteor radar, *Aeronomy Report 87*, University of Illinois.

Papers in Preparation

1. Connor, L.N. and S.K. Avery: A study of gravity wave polarization in the upper atmosphere over Kauai: Directional modulation through critical layer filtering, *J. Geophys. Res.*, in preparation.

2. Palo, S.E. and S.K. Avery: Development of an outlier detection routine for wind profiler radar data, *J. Atmos. Ocean Tech.*, in preparation
3. Vivekanandan, J., D. Rajopadhyaya, S.K. Avery: Effect of raindrop shape on multi-parameter radar observations: Indirect inference of raindrop shape using the S-band polarimetric radar observations, in preparation.

Editorships

Editor, Handbook for MAP, Vol. 2, Extended abstracts from International Symposium on Middle Atmosphere Dynamics and Transport, July 28 - August 1, 1990, Urbana, IL.

Editor (with B.A. Tinsley), Proceedings from Workshop on Mechanisms for Tropospheric Effects of Solar Variability and the Quasi-Biennial Oscillation, June 20-21, 1989, Boulder, CO.

Research Support

NSF grant, ATM-7909982, High resolution meteor winds radar observations at Urbana, IL, October 1, 1979 - September 30, 1981, \$98,763.

NOAA grant, NA80-RAD00016, Comparative study of tides and mean winds between 80-100km, May 21, 1980 - August 20, 1982, \$44,152.

NSF grant, PRM-8212029, Visiting Professorship for Women in Science and Engineering, September 1, 1982 - August 31, 1983, \$61,265.

NSF grant, ATM-8317977, A study of the momentum flux in the troposphere, lower stratosphere and upper mesosphere, using the Poker Flat, AK, MST radar, October 15, 1984 - September 30, 1986, \$142,500.

NSF grant, AED-8406202, Dynamical studies of mesospheric winds using meteor echo returns from the MST radar at Poker Flat, Alaska, July 1, 1984 - June 30, 1986, \$166,000.
Harris Corporation grant, Harris H800 computer system, 1985, \$400,000.

NSF grant, ATM-8610357, Equatorial mesospheric studies using a meteor echo detection and collection system, August 1, 1986 - January 31, 1989, \$210,400.

NSF grant, ATM-8720812, Tropical convection and wave studies using trans Pacific network wind profilers, June 1, 1988 - May 31, 1992, \$852,097. (Ben Balsley, PI).

NSF grant, ATM-8910942, Workshop on mechanisms for tropospheric effects of solar variability and the quasi-biennial oscillation, May 1, 1989 - April 30, 1990, \$15,000.

NSF grant, ATM-8918669, Continuation of equatorial mesospheric studies using a meteor echo detection and collection system, June 1, 1990 - 1993, \$323,432.

NASA, subcontract for antenna construction of MF radar (Hawaii), January 1, 1990 - December 31, 1990, \$10,000.

NASA, A focused research program in oceanic mass flux, WETNET programs, June 1, 1991 - January 1, 1992, \$100,000 (with W.J. Emery)

NSF grant, ATM-9023623, Faculty Award for Women, November 1, 1991 - April 30, 1997, \$250,000.

NOAA grant, NA26GPO256-01, An analysis of tropical precipitation utilizing two Doppler radar systems, July 1, 1992 - June 30, 1995, \$136,105.

NSF grant, ATM-9202371, Radar investigation of mesospheric and lower thermospheric dynamics at Sondre Stromfjord, Greenland, September 1, 1992 - December 31, 1997, \$270,500.

NSF grant, ATM-9208279, An observational study of mesoscale variability in the mesosphere over Hawaii, September 1, 1992 - February 28, 1995, \$95,485.

NSF grant, ATM-9214657, Continuing research using the NOAA/CU tropical Pacific profiler network, September 15, 1992 - February 28, 1995, \$668,420 (Ben Balsley, PI).

NASA grant, NAGW-4146, Estimation and analysis of precipitation over the tropical Pacific, July 1, 1994 - June 30, 1997, \$355,881.

NSF grant, ATM-9415452, Meteor radar studies of the mesosphere-lower thermosphere using MEDAC, April 1, 1995 - March 31, 1997, \$300,000.

NSF grant, ATM-9614610, The Pacific profiler network: Tropical dynamics research, July 1, 1997 – June 30, 2000, \$634,082.

NSF grant, ATM-9724570, Development of the Platteville Atmospheric Observatory, October 1, 1997 – September 30, 2001, \$610,000.

Aerospace Corporation grant, Global Ultraviolet Imager (GUVI), January 1, 1998 – April 1, 2002, \$26,633.

NSF grant, ATM 0000957, Dynamics of the Antarctic MLT Region Using Ground-Based Radar and TIMED Instruments, February 1, 2000 – January 31, 2002, \$224,804.

NOAA grant, NA67RJ0153, Regional Assessment of Water, Climate and Society in the Interior West, January 1, 1998 – June 30, 2002, \$1,453,349.00.

NSF grant, ATM 0116178, Trans Pacific Profiler Network: Investigating Tropical Processes, August 1, 2001 – July 31, 2004, \$750,000.

NSF grant, ATM 0102508, Equatorial Studies of the Mesopause Region Using Meteor Radars, September 1, 2001 – August 31, 2004, \$453,425.

NOAA Agreement, NA67RJ0153, Cooperative Institute for Research in Environmental Sciences - awarded, \$12,500,000, 7/1/96-6/30/02.

NOAA Agreement, NA17RJ1229, Cooperative Institute for Research in Environmental Sciences - awarded, \$2,700,000, 7/1/01-6/30/06.

Ph.D. Theses Directed

Jones, Gary: Ph.D., 1982: The transport of nitric oxide by the mean circulation and planetary waves.

Tetenbaum, David: Ph.D., 1986: An investigation of the variability of tides in the upper atmosphere.

Judasz, Thierry: Ph.D., 1987: The coaxial colinear antenna: Theoretical and experimental models.

Van Baelen, Joel: Ph.D., 1990: Comparison of clear air atmospheric radar techniques for the study of atmospheric dynamics in the troposphere and the stratosphere.

Currier, Phillip: Ph.D., 1991: Precipitation measurement using a dual frequency Doppler system.

Berg, Wesley: Ph.D., 1993: Estimation and analysis of climate scale rainfall over the tropical Pacific.

Angevine, Wayne: Ph.D., 1993: Heat and momentum flux measurements in the planetary boundary layer with a wind profiling radar/radio acoustic sounding system.

Palo, Scott: Ph.D., 1994: Analysis of the equatorial semiannual oscillation and quasi two-day wave in the mesosphere using a spectral model and data collected with the Christmas Island radar systems.

Williams, Christopher: Ph.D., 1994: Analysis of deep convective clouds and their association with non-migrating atmospheric diurnal tides in the tropical troposphere.

Ferriday, James: Ph.D., 1994: Satellite remote sensing of global rainfall using passive microwave radiometry.

Maguire, Bruce: Ph.D., 1994: An analysis of tropical precipitation using two Doppler wind profilers.

Connor, Lawrence: Ph.D., 1995: Troposphere/mesosphere coupling by convective generation of gravity waves: Results from the Kauai radar and wave propagation modeling.

Valentic, Todd: Ph.D., 1996: New approaches to meteor radar data processing.

Chang, Julie: Ph.D., 1997: Diurnal oscillations in the mesosphere and lower thermosphere as detected by the equatorial meteor radar system.

Lau, Elias: Ph.D. (expected 2003): Meteor radar at Piura, Peru.

M.S. Theses Directed

Enge, Per: M.S., 1979: Day-to-day variations of atmospheric tides as observed by meteor radar.

Wang, Sally: M.S., 1985: The design of a microprocessor system for meteor echo detection and collection on a MST radar.

Dowski, Edward: M.S., 1986: Spectral estimation of randomly sampled signals with an application to atmospheric tidal determination.

Stricklen, John: M.S., 1987: A feasibility study on a 2MHz windprofiling radar system.

Patterson, Edwin: M.S., 1987: Design of a meteor detection and collection system.

Obert, Russell: M.S., 1988: A new meteor echo detection and collection radar processing system.

Whitmore, Clifford: M.S., 1988: An accurate and robust technique for atmospheric tidal estimation.

Longo, Alan: M.S., 1988: General principles of pulse coding in meteorological radars and techniques in decoding for use by MEDAC.

Mullen, Robert: M.S., 1990: Non-meteoritic echoes at Christmas Island.

Guillemot, Chris: M.S., 1990: Intraseasonal oscillations in NMC wind analysis over the Pacific.

Professional Service

I. Boards and Committees

*** Elected Positions**

A. International

1. International Commission on Meteorology of the Upper Atmosphere, Working Group on Tides in the Mesosphere and Lower Thermosphere, 1981 - 1986
2. Middle Atmosphere Program - Atmospheric Tides Middle Atmosphere Program, 1982 - 1989.
3. URSI/SCOSTEP Middle Atmosphere Program - MST Radar Coordination group, co-chair, 1983 - 1984
4. International STEP Program - Mesosphere-Lower Thermosphere Network Steering Committee, 1989 - 1997.
5. International STEP Program - Equatorial Middle Atmosphere Dynamics Steering Committee, 1990 - 1997.
6. SCOSTEP - Scientific Discipline Representative, 1995 - 2000.
7. IUGG, Commission on the Middle Atmosphere, Member, 1995 - 2001.
8. International URSI Representative to SCOSTEP, 2000 - present.

B. National:

National Science Foundation (NSF)

1. NSF, Advisory Panel, Atmospheric Sciences Program, 1985 - 1988.
2. NSF, Steering Committee, CEDAR Program, 1986 - 1987.
3. NSF, Radar Subcommittee, CEDAR Program, Chairman, 1986.
4. NSF, Advisory Committee for Electrical and Communications Systems Division, Chair: 1991 - 1993.

5. NSF, Advisory Committee for Engineering Directorate: 1991-1995; Vice Chair: 1993-1994; Chair: 1994-1995.
6. NSF, Advisory Committee for Geosciences Directorate, 1996 – 2000, Chair, 1998 – 2000.
7. NSF, Committee of Visitors (COV), Upper Atmosphere Section, Chair, 1999.

National Research Council (NRC)

1. NRC, Committee on Solar-Terrestrial Research, 1987 - 1990.
2. NRC, Polar Sciences Board, Study of NSF Arctic Natural Sciences program, 1997-1998.
3. NRC, Board on Atmospheric Science and Climate, 1997 – 2001.
4. NRC, Committee for Review of the Science Implementation Plan of the NASA Office of Earth Science, 2000.
5. NRC, Committee for the NOAA/NESDIS Transition from Research to Operations (CONNTRO), 2002 - 2003.

University Corporation for Atmospheric Research/ National Center for Atmospheric Research (UCAR/NCAR)

1. NCAR, Search Committee for Director, 1988 - 1989.
2. UCAR, Scientific Programs Evaluation Committee, 1989-1990; 1990-1991.
3. *UCAR, Member, Board of Trustees, 1991-1997; Vice Chairwoman, 1993-1994; Chairwoman, 1995-1996.
4. UCAR, Scientific Programs Evaluation Committee (SPEC), 2000 - 2001.
5. Digital Library for Earth System Education (DLESE), Steering Committee, 2001 – present.

National Aeronautics and Space Administration (NASA)

1. NASA, Ionosphere, Thermosphere, Mesosphere Working Group, 1991 - 1994.

National Oceanic and Atmospheric Administration (NOAA)

1. NOAA, Senior Research Council, 1999-2000.
2. NOAA, Joint Institute Executive Committee, 1999 – 2002.

National Association of State Universities and Land-Grant Colleges (NASULGC)

1. Commission on Food, Environment and Renewable Resources (CFERR) Voting Delegate, 1996 - present.
2. NASULGC, Board on Oceans and Atmosphere, Executive Committee: 1994-1997; Chair: 1995 – 1996; Member: 2001 – present.

II Professional Society Activities

American Meteorological Society (AMS)

1. AMS, Committee on the Upper Atmosphere, 1979 - 1983
2. AMS, Committee on Middle Atmosphere, 1990 - 1993.
3. *AMS, Councillor: 1996 – 1999; Executive Committee: 1996 - 1999.
4. *AMS, Commissioner, Education and Human Resources, 1999 – 2005.

American Geophysical Union (AGU)

1. AGU, Committee on Education and Human Resources, 1988 - 1992.
2. AGU, Awards Committee, 1994 – 1998.
3. AGU, Heads and Chairs of Earth and Space Sciences Departments, Facilitator, November 1997.
4. AGU, Committee on Education and Human Resources, 2000 - present.

Institute of Electrical and Electronics Engineers (IEEE)

1. IEEE - Central Illinois Section, Member at large 1981 – 1982.

United States National Committee/Radio Science Union (URSI)

1. USNC/URSI, Member at Large, 1991 - 1993.
2. *USNC/URSI, Secretary, 1994-1996; Chair, 1997 – 1999; Past Chair 2000-2002.

III. Other University /Institute Boards and Committees

1. Purdue University, External Advisory Committee, 1996 - 1998.
2. Space Science Institute, Board of Directors, 1999 – present.
3. Science Policy Board, University of Arizona Science and Technology Center, Tucson, Arizona, 1999 – present.

IV. On-going Activities

- a) Reviewer – National Science Foundation, Air Force, NASA, NOAA, *J. Geophys. Res.*, *J. Atmos. Sci.*, *Radio Sci.*, *J. Atmos. Terr. Phys.*, *Geophys. Res. Lett.*, *J. Climate*, COSPAR, New Zealand Antarctic Science Panel.
- b) Session chair, workshop leader, conference organizer or presenter for conferences sponsored by the American Meteorological Society, Middle Atmosphere Program, American Geophysical Union, International Association of Geomagnetism and Aeronomy, International Association of Meteorology and Atmospheric Physics, URSI, CEDAR, NASULGC, various workshops on radar and remote sensing.

V. University of Colorado Service

Electrical and Computer Engineering

1. Director, Graduate Program, Electrical and Computer Engineering Department, 1986 – 1989
2. Self-Study Team for Electrical and Computer Engineering Department Program Review, 1988 - 1989
3. Circuits/Electronics Curriculum Committee, Electrical and Computer Engineering, 1990
4. Search Committee - Faculty position, Electrical and Computer Engineering, 1991
5. Electrical and Computer Engineering Self Study, 1995 – 1996

CIRES

1. Visiting Fellows Program, Coordinator, CIRES, 1984 - 1986
2. CIRES Self Study Committee, 1983 - 1984
3. Search Committee for Director of The Center for Earth Observations and Remote Sensing, Univ. of Colorado, 1984 - 1985
4. Fact Finding Committee for Director of CIRES, 1987
5. Search Committee - Joint Geography/CIRES faculty position, 1989 - 1990
6. CIRES Self Study, 1991-1992
7. CIRES Director Evaluation Committee, 1992
8. CIRES Strategic Planning Committee, 1992
9. CIRES/PAOS Search Committee, 1995-1996

College

1. Society of Women Engineers - Faculty Advisor, 1982 - 1987
2. College search committee for Associate Dean, 1986
3. Executive Advisory Council of the Graduate School, member, 1987 - 1996
4. Geophysics Graduate Program Committee, 1988 - present
5. Search Committee for Associate Dean of Graduate School, 1988
6. Search Committee - Chair Aerospace Engineering Science, 1989 - 1990
7. College of Engineering and Applied Science Research Award Committee - 1989
8. Search Committee - Patten Chair, Chemical Engineering, 1989 - 1990
9. Search Committee - Faculty position, Chemical Engineering, 1989 - 1991
10. Minority Engineering Program, Industrial Advisory Board, 1990 - 1992

11. Optoelectronics Computer Systems Center, Policy Board, 1989 – 1992
12. Center for Space Construction, Academic Advisory Board, 1989 – 1992
13. College of Engineering Faculty Search Committee, Chair, 1992.
14. Quality Council, College of Engineering and Applied Science, Chair, 1993
15. Committee to Consider New Graduate Programs, 1995
16. Interdisciplinary Telecommunications Program (ITP) Self-Study, Chair, 1996.
17. Center for the American West Faculty Advisory Committee, 1997-present.
18. Ted Scripps Fellowship Advisory Committee, Environmental Journalism Program, 1997 - present.
19. Search Committee – Director for Women in Engineering Program, College of Engineering and Applied Science, 1997.
20. Aerospace Engineering Sciences Department: External Advisory Board, 1998 – present.
21. School of Journalism and Mass Communication Dean's Advisory Committee, Chair, 2000.

Campus

1. CSU Cyber 205 Allocation Committee, Univ. of Colorado, 1984 - 1985
2. CU Task Force on Space Science and Policy, Subcommittee on Remote Sensing and Global Habitability, Univ. of Colorado, 1984
3. Council on Teaching, Member 1986 - 1988
4. Committee on University Scholarly Publications, member, 1986 - 1989
5. Search Committee for Vice Chancellor for Budget and Planning, 1987
6. Coordinating Committee on Earth Systems Science, 1987
7. Co-Chair, University Committee on Ph.D. Program in Atmospheric Science, 1988 - 1989
8. Global Change and Environmental Quality Program, Steering Committee, Boulder Campus, 1990 – present (name change to Environmental Program, 1997)
9. Faculty Recruitment Strategy Committee, 1990.
10. Academic Quality and Productivity Committee, 1990-1991
11. Search Committee -Associate Vice President for Academic Affairs, University of Colorado, 1991
12. Vice Chancellor's Committee on Women's Issues, 1991-1994
13. Search Committee - Director of Admissions, 1992
14. Diversity Planning Retreat, 1993
15. Search Committee - Vice Chancellor for Academic Affairs, 1995

16. Program Review, Dept. of Astrophysical, Planetary, and Atmospheric Science, Internal Review Committee, Chair, 1994-1995
17. Boulder Campus Strategic Planning, Research Task Force, Chair, 1995 - 1996
18. Faculty Associate for Consultation to Teaching, FTET, 1995 - present.
19. Management Development Initiative, University of Colorado, 1998.
20. DA-ICR Task Force, Boulder Campus, 1997; 1998
21. North Central Accreditation Task Force, Boulder Campus, 1998 – 2000.
22. Academic Affairs Budget Advisory Committee, 2001-2004.
23. Research, Scholarly, and Creative Work Cabinet Advisory Committee, 2001.
24. Elizabeth Gee Award Committee, 2000 - 2002.
25. Alumni Association Awards Committee, 2002.
26. Institute of Behavioral Science Program Review Panel, 2002.

System

1. Federal Relations Advisory Committee, 2000 - 2002.
2. University Leadership Institute, 2000.

VI. Outreach:

1. Presentations at Student conferences and K-12 schools, 1990 – present.
2. CU Boulder Outreach: The Scholarship of Engagement, Panelist, 1997.
3. CU in Residence Frontiers in Science Program, Presenter, 2000.
4. Women in Mathematics and Science Conference, Presenter, 2000
5. Chancellor's Community Lecture Series – Women in the Field, 2000.
6. Scripps Howard Institute on the Environment, Keynote Speaker, 2000, 2001.
7. Conference on World Affairs, moderator for Panel on Climate of the 21st Century, 2000.
8. Boulder Rotary, 2002.
9. Center for Environmental Journalism and the Carbon, Climate and Society Initiative, Roundtable discussion on the Media's Coverage of Science, 2002.
10. Lowell Whiteman High School field trip to Platteville, CO.

March 2002

