

SUSAN KATHRYN AVERY

Personal Information

Home Address: 475 Utica Ave, Boulder, CO 80304
Phone: 508-560-2459
Email: savery@whoi.edu
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

University of Massachusetts, Dartmouth, Honorary Degree, 2012
AAAS Fellow, 2011
Business and Professional Women/USA National Business Women's Week Woman of Achievement Award, October 2009
University of Illinois, College of Liberal Arts and Sciences, Alumni Achievement Award, 2005
University of Illinois, Department of Atmospheric Sciences, Distinguished Ogura Lectureship, 2005
Sabbatical Study Leave, University of Colorado, 2002-2003
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, 2001
University of Colorado Robert L. Stearns Award, Recognition for exceptional achievement and/or service, University of Colorado, 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

7/15 - Present President Emerita, Woods Hole Oceanographic Institution, Woods Hole
Senior Fellow, Consortium for Ocean Leadership, Washington DC
Distinguished Visiting Faculty, University of MA, Boston
Avery Consulting, LLC: Partner

2/08 – Present Professor Emeritus, University of Colorado, Boulder, CO 80309

2/08 – 7/15 President and Director, Woods Hole Oceanographic Institution, Woods
MA, 02543

7/06 - 7/07 Interim Vice Chancellor for Research and Dean of the Graduate School,
University of Colorado – Boulder, CO 80309.

4/05 - 7/06 Interim Provost and Executive Vice Chancellor for Academic Affairs,
University of Colorado – Boulder, CO 80309

- 8/04 - 10/05 Interim Vice Chancellor for Research and Dean of the Graduate School, University of Colorado – Boulder, CO 80309.
- 3/96 – 8/04 Director, Center for Limb Atmospheric Sounding (CLAS), University of Colorado, Boulder, CO 80309.
- 9/94 – 8/04 Director, CIRES, University of Colorado, Boulder, CO 80309.
- 8/92 - 1/08 Professor, Dept. of Electrical and Computer Engineering, University of Colorado, Boulder, CO 80309.
- 9/83 - 1/08 Fellow, CIRES, University of Colorado, Boulder, CO 80309.
- 9/89 – 9/92 Associate Dean of Research and Graduate Education, College of Engineering, University of Colorado, Boulder, CO 80309
- 9/85 – 8/92 Associate Professor, Dept. of Electrical and Computer Engineering University of Colorado, Boulder, Colorado 80309.
- 9/82 - 1983 Visiting Fellow, CIRES, University of Colorado, Boulder, CO 80309.
- 8/78 – 8/82 Assistant Professor, Dept. of Electrical Engineering, Aeronomy Laboratory, University of Illinois, Urbana, IL 61801.
- 6/78 – 8/78 Research Associate, University of Illinois, Aeronomy Laboratory, Urbana, IL 61801.

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 Association for the Advancement of Science, Fellow

Papers Published (Journals and Books)

1. Y. Tang, X. Dou, T. Li, T. Naukamura, X. Xue, C. Huang, A. Manson, C. Meek, D. Thorsen, S. Avery, 2014: Gravity wave characteristics in the mesopause region revealed from OH airglow imager observations over Northern Colorado, *J. Geophys. Res – Space Physics*, Vol. 119, pp 630-645, doi: 10.1002/2013JA018955.
2. Changing Climate, Changing World, Changing Planet: Susan Avery, Alexandre Magnan, Scott Doney, and Benjamin Garraud, *Oceans – The New Frontier*, pgs 225-236, 2011 (also in French)
3. Lau, E.M., H. Iimura, S.E. Palo, S.K. Avery, J.P. Avery, C. Kang, and N.A. Makarov, 2008: An intercomparison of meteor radar measurements at the South Pole using two different processing systems, *Adv. Space Res.*, 42(1), 155–163, doi:10.1016/j.asr.2007.03.019.
4. T. Chshyolkova, A.H. Manson, C.E. Meek, T. Aso, S.K. Avery, C.M. Hall, W. Hocking, K. Igarashi, C. Jacobi, N. Makarov, N. Mitchell, Y. Murayama, W. Singer, D. Thorsen, and M. Tsutsumi, 2007: Polar vortex evolution during Northern Hemispheric winter 2004/05m, *Annales Geophysicae*, Vol. 25, pp 1279-1296.
5. Schafer, R., S. K. Avery, K. S. Gage, G. N. Kiladis, 2007: Wind profiler observations over the central equatorial Pacific: Optimizing processing to improve quality and height coverage. *J. Atmos. Oceanic Tech*, 24, 1710-1725, doi:10.1175/JTECH2072.1
6. A.H. Manson, C. Meek, T.Chshyolkova, C. McLandress, S.K. Avery, D.C. Fritts, C.M. Hall, W.K. Hocking, K. Igarashi, J.W. MacDougall, Y. Murayama, D.C. Riggan, D. Thorsen, R.A. Vincent, 2006: Winter warmings, tides and planetary waves: comparisons between CMAM (with interactive chemistry) and MFR-MetO observations and data, *Annales Geophysicae*, 24(10), 2493-2518.
7. Murphy, D.J., Forbes, J.M., Walterscheid, R.L., Hagan, M.E., Avery, S.K., Aso, T., Fraser, G.J., Fritts, D.C., Jarvis, M.J., McDonald, A.J., Riggan, D.M., Tsutsumi, M., and Vincent, R.A. 2006: A climatology of tides in the Antarctic mesosphere and lower thermosphere, *J. Geophys. Res.*, 111, D23104, doi: 10.1029/2005JD006803.
8. Lau, E. M., S. K. Avery, J. P. Avery, S. E. Palo, and N. A. Makarov, 2006: Tidal analysis of meridional winds at the South Pole using a VHF interferometric meteor radar, *J. Geophys. Res.*, 111, D16108, doi:10.1029/2005JD006734.

9. Lau, E. M., S. K. Avery, J. P. Avery, D. Janches, S. E. Palo, R. Schafer, and N. A. Makarov, 2006: Statistical characterization of the meteor trail distribution at the South Pole as seen by a VHF interferometric meteor radar, *Radio Sci.*, 41, RS4007, doi:10.1029/2005RS003247.
10. T. Chshyolkova, A.H. Manson, C.E. Meek, S.K. Avery, D. Thorsen, J.W. MacDougall, W. Hocking, Y. Murayama, K. Igarashi, 2006: Planetary wave coupling processes in the middle atmosphere (30-90 km): A study involving MetO and MFR data, *Journal of Atmospheric and Solar Terrestrial Physics*, Vol. 68, pp 353-368.
11. S. de la Pena, S.K. Avery, J.P. Avery, E. Lau, D. Janches, 2005: Wind measurements of MLT region using the Platteville, CO MEDAC 50 MHz meteor radar, *Journal of Atmospheric and Solar-Terrestrial Physics*, Vol. 67, pp 1211-1215.
12. T. Chshyolkova, A.H. Manson, C.E. Meek, S.K. Avery, D. Thorsen, J.W. MacDougall, W. Hocking, 2005: Planetary wave coupling in the middle atmosphere (20-90km): A CUJO study involving TOMS, MetO and MF radar data, *Annales Geophysicae*, Vol. 23, pp 1103-1121.
13. A. H. Manson, C.E. Meek, T. Chshyolkova, S.K. Avery, D. Thorsen, J.W. Macdougall, W. Hocking, Y. Murayama, K. Igarashi, 2005: Wave activity (planetary, tidal) throughout the middle atmosphere (20-100km) over the CUJO network: Satellite (TOMS) and Medium Frequency (MF) radar observations, *Annales Geophysicae*, Vol. 23, pp 305-323.
14. D. Janches, S. Palo, E.M. Lau, J. Avery, S.K. Avery, S. de la Pena, N.A. Makarov, 2004: Diurnal and seasonal variability of the meteoric flux at the South Pole measured with radars, *Geophysical Research Letters*, Vol. 31, No. 20, L20807, 10.1029/2004GL021104.
15. A.H. Manson, C.E. Meek, T. Chshyolkova, S.K. Avery, D. Thorsen, J.W. MacDougall, W. Hocking, Y. Murayama, K. Igarashi, S.P. Namboothiri, P. Kishore, 2004: Longitudinal and latitudinal variations in dynamic characteristics of the MLT (70 – 95 km): A study involving the CUJO network, *Ann. Geophysicae*, 22, 347-365.
16. Schafer, R., S.K. Avery, K. Gage, P. Johnston, D. Carter, 2004: Improving wind profiler measured winds using coplanar spectral averaging, *J. of Atmos. Oceanic Tech.*
17. Schafer, R., S. K. Avery, and K. S. Gage, 2003: A comparison of VHF wind profiler observations and the NCEP/NCAR re-analysis over the tropical pacific, *J. Appl. Met.*, 42(7), 873-889.
18. Murphy, D.J. M. Tsutsumi, D. M. Riggin, G. Owen L. Jones, R. A. Vincent, M. E. Hagan, S. K. Avery, 2003: Observations of a nonmigrating component of the semidiurnal tide over Antarctica, *J. Geophys. Res.*, 108(D8), 4241, doi:10.1029/2002JD003077.
19. A.H. Manson, C.E. Meek, S.K. Avery, D. Thorsen, 2003: Ionospheric and dynamical characteristics of the mesosphere-lower thermosphere region over Platteville and comparisons with the region over Saskatoon, *J. Geophysical Res.*, 108(D13), 4398, doi:10.1029/2002JD002835.

20. Vivekanandan, J., G. Zhang, S. Ellis, D. Rajopadhyaya, and S.K. Avery, 2003: Radar reflectivity calibration using differential propagation phase measurement, *Radio Science*, Vol 38, 76.3, 8049, 10.10 29/2002 RS002676.
21. Schafer, Robert, S.K. Avery, P. May, D. Rajopadhyaya, C. Williams, 2002: Estimation of rainfall drop size distributions from dual frequency wind profiler spectra using deconvolution and a non-linear least squares fitting technique, *J. of Atmos. Oceanic Tech*, 19, 864-874.
22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. Valentich, 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.
30. Valentich, 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
31. 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.

32. 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.
33. Valentic, 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.
34. 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.
35. 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.
36. Williams, Christopher R., and S.K. Avery, 1996: Diurnal nonmigrating tidal oscillations forced by deep convective clouds, *J. Geophys. Res.*, 101, 4079-4091.
37. 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.
38. Valentic, 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.
39. 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.
40. 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.
41. 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.
42. 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.
43. 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
44. 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
45. 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.

46. Salah, J.E., R.R. Clark, J.M. Forbes, A.H. Manson, S.K. Avery, and R. Schminder, 1994: Radar observations of the semi-diurnal tide in the mesosphere and lower thermosphere at midlatitudes, *J. Atmos. Terr. Phys.*, 56, 1251-1262.
47. 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.
48. 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.
49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. 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.
56. 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.
57. 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.
58. 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.

59. 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.
60. 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.
61. Avery, S.K. and S.E. Palo, 1991: Mean winds and waves in the troposphere during Aloha-90, *Geophys. Res. Lett.*, 18, 1317-1320.
62. 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.
63. 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.
64. 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.
65. 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.
66. Avery, S.K., J.P. Avery, T.A. Valentic, S.E. Palo, M.J. Leary, R.L. Obert, 1990: A new MEDAC system: Christmas Island mesospheric wind measurements, *Radio Sci.*, 25, 657-669.
67. 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.
68. Avery, S.K., 1990: The meteor radar as a tool for upper atmosphere research, *Adv. Space Res.*, 10, 193-200.
69. 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
70. 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.
71. 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.
72. 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.

73. 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. SpaceRes.*, 7, 143-153.
74. 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.
75. 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.
76. 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.
77. 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.
78. Tetenbaum, D., S.K. Avery, and S.A. Bowhill, 1986: Simulation studies of tidal analysis using meteor echo returns, *Radio Sci.*, 21, 955-963.
79. 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.
80. 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.
81. 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.
82. 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.
83. 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.
84. Avery, S.K. and I.D. Countryman, 1980: Coherent-scatter measurements of middle-atmosphere tides and winds. *J. Meteor. Soc. Japan*, 58, 318-320.
85. 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.
86. 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. Enhancing Participation in the U.S. Global Change Research Program, 2016: National Research Council, National Academy Press, Washington, DC.
2. A Strategy for Active Remote Sensing Amid Increased Demand for Radio Spectrum, 2015: National Research Council, National Academy Press, Washington, DC.
3. Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond, 2007: National Research Council, National Academy Press, Washington, D.C.
4. Strategic Guidance for NSF's Support of the Atmospheric Sciences, 2006: National Research Council, National Academy Press, Washington, D.C.
5. Communicating Uncertainties in Weather and Climate Information, 2002: National Research Council, National Academy Press, Washington, D.C.
6. A Climate Services Vision: First Steps Toward the Future, 2001: National Research Council, National Academy Press, Washington, D.C.
7. 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.
8. 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.
9. 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.

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 80-100 km, 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., 2005: Atmospheric tides observed using the South Pole meteor radar

de la Pena, S.: Ph.D. 2007: Meteor studies at Platteville, CO

Ellis, Scott: Ph.D., 2010: Humidity and cloud liquid water content estimates using simultaneous S and Ka-band radar measurements

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 wind profiling 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.

Editorials, Letters, Statements

It's been a privilege to lead WHOI: Statement to WHOI,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=220569>, June 29, 2015

Presentation to the WHOI Board and Corporation (The Pillars of WHOI),
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=219349>, May 21, 2015

Sea Stories: Presentation to the WHOI Board of Trustees,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=219329>, May 20, 2015

Wenju Cai, Susan K Avery, Margaret Leinen, Kenneth Lee, Xiaopei Lin, Martin Visbeck: Commentary: Institutional coordination of global ocean observations: Nature Clim. Change, 5, 4-6 (2015)

Research Independence and Integrity,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=194409>, May 25, 2014

Congressional Testimony: Driving Innovations through Federal Investments,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=192669>, April 29, 2014

Congressional Testimony: Deep Sea Challenge: Innovative Partnerships in Ocean Observing,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=171149>, June 11, 2013

Remarks on the Occasion of the Christening of the R/V *Neil Armstrong*,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=191189>, Anacortes, WA, March 29, 2014

Letter to U.S. House and Senate Leadership: Fiscal Cliff Impacts
<http://www.whoi.edu/filesserver.do?id=143784&pt=10&p=88513>, December 26, 2012

The Need to Protect the Scientific Deliberative Process,
<http://www.whoi.edu/website/president-director-emeritus-susan-avery/statement/scientific-deliberative-process>, June 3, 2012

The Titanic: Seeing is Knowing: Boston Globe Online,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=135649>, April 13, 2012

World Ocean Day Statement: The Importance of Looking Closer to Home,
<http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=75886>, June 8, 2010

Deepwater Horizon Oil Statement, <http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=74986>,
May 26, 2010

World Climate Summit, Ocean Day: Changing Climate, Changing Ocean, 2009

Congressional Testimony: How the Mission and Related Research of NOAA Contribute to the National Science Program, <http://www.whoi.edu/page.do?pid=96921&tid=3622&cid=55806>, 2009

Strategic Actions for the next Administration: Preparing the Nation for Climate Change,
<http://www.whoi.edu/filesserver.do?id=45023&pt=10&p=30652>, 2008

Index of the Massachusetts Innovation Economy, Massachusetts Technology Collaborative,
Feature Editorial "Creative Collaborations to Sustain Momentum," 2008.

"The Oceans and Us," TEDx Boston talk, <http://tedxtalks.ted.com/video/TEDxBoston-Susan-Avery-The-Ocea>, 2010

Professional Service (*denotes elected positions)

I. Boards and Committees

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 - 2005
9. URSI, Finance Committee Chair, 2000-2003.
10. SCOSTEP – CAWSES Chair, 2006-2011
11. UNESCO, Intergovernmental Oceanographic Commission: U.S. National Committee Advisory Committee: Member, 2009 – 2014; Chair 2010 – 2014
12. Partnership for Observation of the Global Oceans: member representative, 2008-2015
13. International Women’s Forum, 2010-present
14. Ocean Network Canada, International Science Advisory Board, 2011-present
15. UNESCO, Director General Science Advisory Committee: Member, 2011 – 2012
16. JAMSTEC, International Advisory Committee, Chair, 2013
17. Helmholtz Research Review, Oceans: From the Deep Sea to the Atmosphere, Chair, 2013
18. UK Natural Environment Research Council, Review of Research Centre Ownership and Governance, Panel Member, 2013
19. UN Secretary-General Scientific Advisory Board, 2013-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.
8. NSF, Upper Atmospheric Facilities Review Chair, 2004
9. NSF, Advisory Committee for Environmental Research and Education, 2010-2012
10. NSF, Search Committee for Geosciences AD, 2012 (also 2016)
11. NSF, Search Committee for International Science and Engineering Director, 2014
12. NSF, Advisory Committee for International Science and Engineering Section, Chair, 2014-present

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.
6. NRC, NRC Committee on Strategic Guidance for NSF's Support of Research in the Atmospheric Sciences, 2004 – 2006.
7. NRC, Earth Science and Applications from Space: A Community Assessment and Strategy for the Future, Steering Committee Member, Chair of Weather Panel 2004-2007.

8. NRC, Policy and Global Affairs Division: Board on Higher Education and Workforce, 2009 – 2014
9. NRC, Global Change Research Program, Advisory Committee: Member, 2011-present
10. NRC, Scientific Uses of the Radio Spectrum, 2013-2015
11. NRC, Geospace Portfolio Review, 2016

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; 2000-2005.
3. *UCAR, Member, Board of Trustees, 1991-1997; Vice Chairwoman, 1993-1994; Chairwoman, 1995-1996.
4. Digital Library for Earth System Education (DLESE), Steering Committee, 2001 – 2002.
5. NCAR, High Altitude Observatory Review Committee, Co-Chair, 2007.
6. UCAR, WHOI Institutional Member Representative, 2009-present
7. UCAR, NESL Director Search Committee, 2011
8. UCAR, Nominating Committee, 2011- 2013
9. UCAR, High Altitude Observatory Advisory Committee, 2012-2014

National Aeronautics and Space Administration (NASA)

1. NASA, Ionosphere, Thermosphere, Mesosphere Working Group, 1991 - 1994.
2. NASA, Science Advisory Committee, 2014-present

National Oceanic and Atmospheric Administration (NOAA)

1. NOAA, Senior Research Council, 1999-2000.
2. NOAA, Joint Institute Executive Committee, 1999 – 2002.
3. NOAA, IPA for development of Climate Change Science Plan, 2003
4. NOAA, Science Advisory Board, 2011- present

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

1. Commission on Food, Environment and Renewable Resources (CFERR) Voting Delegate, 1996 - 2004.

2. Board on Oceans and Atmosphere, Executive Committee: 1994-1997; Chair: 1995 – 1996; Member: 2001 – 2004.
3. Council on Research Policy and Graduate Education, Executive Committee: 2005-2007; Chair Elect: 2007.

National Park System

1. National Park System Advisory Board Science Committee, 2011-present

Consortium for Ocean Leadership

1. Member Representative 2008-2015
2. *Board of Trustees, 2009 – 2014
3. Committees of COL
 - a. Audit (2009-2012)
 - b. Personnel (2009-2012)
 - c. Policy (2009-2015)
 - d. Drilling Program (2010-2015)
 - e. Ocean Observing (2012-2015)
 - f. Ships Working Group (2010)
 - g. Ocean Futures: Technology (2013-2015)
4. Joint Ocean Commission Initiative: Development of “Ocean Policy Priorities for the Administration and Congress”, Spring 2009
5. Public Review of Climate Services – representing COL

C. State:

1. MA Global Warming Solutions Act, Implementation Advisory Committee, 2012-2014
2. MA Climate Protection and Green Economy Advisory Committee, 2009 - 2011; Co-chair

II. Professional Society Activities

American Association for Advancement of Science (AAAS)

1. *AAAS, Atmospheric and Hydrospheric Sciences (Section W), Steering Group, 2011-2014, Chair 2012-2013

American Meteorological Society (AMS)

1. AMS, Committee on the Upper Atmosphere, 1979 - 1983
2. AMS, Committee on Middle Atmosphere, 1990 - 1993.
3. *AMS, Councilor: 1996 – 1999; Executive Committee: 1996 - 1999.
4. *AMS, Commissioner, Education and Human Resources, 1999 – 2005.
5. *AMS, President-Elect, 2003; President, 2004; Past-President, 2005-2006.
6. AMS, Commission on the Weather and Climate Enterprise, Steering Committee, 2008 – 2012
7. AMS, Nominating Committee, 2010 – 2012
8. AMS, Development Committee, Chair, 2008-present
9. AMS, Community Statement Development for next Administration, 2015- present
10. AMS, Visioning for Centennial Celebration, 2015

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 – 2004.
5. AGU, Waldo E. Smith Medal Committee, 2003.
6. AGU, Nominations Committee, 2002 – 2004.
7. AGU, Visioning for Centennial Celebration, Chair, 2015

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/Corporate Boards and Committees

1. Purdue University, External Advisory Committee, 1996 - 1998.
2. Space Science Institute, Board of Directors, 1999 – 2002.
3. Science Policy Board, University of Arizona Science and Technology Center, Tucson, Arizona, 1999 – 2009
4. JPL Advisory Board, 2006-2009
5. CO-Labs, Inc; Board of Directors, Member, 2007- 2008
6. Halifax Marine Research Institute, Advisory Committee, 2010 - 2011
7. SEA Education Association, Overseer, 2010 - present
8. BioMarine, Advisory Committee, 2010 - 2012
9. MSU Advance Project, External Advisory Board, 2009 – 2011
10. Heinz Awards Jury, 2010-2013
11. SUNY Research Council, 2012-present
12. The Leadership Alliance External Advisory Board, 2014-present

IV. 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 Level

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
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, 1997-2007

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 – 2003.
21. School of Journalism and Mass Communication Dean's Advisory Committee, Chair, 2000.

Campus Level

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 – 1997 (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, FTEP, 1995 - 2004.
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. Alumni Association Awards Committee, 2002.
25. Institute of Behavioral Science Program Review Panel, 2002.
26. Flagship 2030 Strategic Planning, 2007.

System Level

1. Elizabeth Gee Award Committee, 2000 – 2002; 2006
2. Federal Relations Advisory Committee, 2000 - 2002.
3. University Leadership Institute, 2000.