

CURRICULUM VITA
WILLIAM D. COLLINS

TITLE: Senior Scientist	Professor in Residence
Earth Sciences Division	Department of Earth and Planetary Science
Lawrence Berkeley Laboratory	University of California, Berkeley
Berkeley, California	Berkeley, California

EDUCATION:

B.A., Physics (cum laude)	Princeton University, 1981
M.S., Astronomy and Astrophysics	University of Chicago, 1984
Ph.D., Astronomy and Astrophysics	University of Chicago, 1988

PROFESSIONAL EXPERIENCE:

1989 – 1990, Post-Graduate Research Associate, University of Chicago
1990 – 1992, Post-Graduate Research Associate, Scripps Institution of Oceanography
1992 – 1997, Assistant Research Physicist, Scripps Institution of Oceanography
1994 – 1994, Lecturer, Scripps Institution of Oceanography
1996 – 1997, Visiting Scientist, National Center for Atmospheric Research
1997 – 2001, Scientist II, National Center for Atmospheric Research
2001 – 2007, Scientist III, National Center for Atmospheric Research
2001 – 2007, Adjoint Professor, PAOS Program, University of Colorado
2006 – 2007, Deputy Section Head, National Center for Atmospheric Research
2007 – 2008, Senior Scientist, National Center for Atmospheric Research
2007 – present, Senior Scientist, Lawrence Berkeley National Laboratory
2007 – present, Department Head, Lawrence Berkeley National Laboratory
2007 – present, Professor in Residence, University of California, Berkeley
2013 – present, Chief Scientist, Dept. of Energy Accelerated Climate Model for Energy
2013 – present, Director, Climate Readiness Institute

PUBLICATIONS:

1 Dissertations

B.A. Thesis: Thermodynamics of apparent horizons, 1981, Princeton University, 38 pp.

Ph.D. Thesis: The theory of magnetohydrodynamic wave generation by localized sources, 1988, University of Chicago, University of Michigan Microfilms No. T-30997.

2 Reviewed Publications

(Asterisks indicate publications based upon B.A. and Ph.D. theses.)

- 2.1. Collins, W.D., and M. Turner, 1984: Thermal production of superheavy magnetic monopoles in the new inflationary universe scenario. *Physical Review D*, **29**, 2158–2161.
- *2.2. Collins, W.D., 1989: The theory of magnetohydrodynamic wave generation by localized sources I. General asymptotic theory. *The Astrophysical Journal*, **337**, 548–567.
- *2.3. Collins, W.D., 1989: The theory of magnetohydrodynamic wave generation by localized sources II. Collisionless dissipation of wave packets. *The Astrophysical Journal*, **343**, 499–506.
- 2.4. Ramanathan, V., and W.D. Collins, 1991: Thermodynamic regulation of ocean warming by cirrus clouds deduced from observations of the 1987 El Niño. *Nature*, **351**, 27–32.
- *2.5. Collins, W.D., 1992: The theory of magnetohydrodynamic wave generation by localized sources III. Efficiency of plasma heating by dissipation of far-field waves. *The Astrophysical Journal*, **384**, 319–332.
- *2.6. Collins, W.D., 1992: Mechanics of apparent horizons. *Physical Review D15*, **45**, 495–498.
- 2.7. Ramanathan, V., and W. Collins, 1992: Thermostat and global warming. *Nature*, **357**, 649.
- 2.8. Ramanathan, V., and W. Collins, 1993: A thermostat in the tropics. *Nature*, **361**, 410–411.
- 2.9. Ramanathan, V., W.D. Collins, and B. Subasilar, 1994: Comment on the paper “An inquiry into the cirrus-cloud thermostat effect for tropical sea surface temperature” by K.M. Lau, C.H. Sui, M.D. Chou, and W.K. Tau. *Geophys. Res. Lett.*, **21**, 1185–1186.
- 2.10. Weaver, C.P., W.D. Collins, and H. Grassl, 1994: The relationship between clear-sky atmospheric greenhouse effect and deep convection during the Central Equatorial Pacific Experiment (CEPEX): Model calculations and satellite observations. *J. Geophys. Res.*, **99**, 25891–25901.
- 2.11. Collins, W.D., and A.K. Inamdar, 1995: Validation of clear-sky fluxes for tropical oceans from the Earth Radiation Budget Experiment. *J. Climate*, **8**, 569–578.
- 2.12. Lohmann, U., E. Roeckner, W.D. Collins, A. Heymsfield, and G. McFarquhar, 1995: The role of water vapor and convection during the Central Equatorial Pacific Experiment (CEPEX) from observations and model simulations. *J. Geophys. Res.*, **100**, 26229–26245.
- 2.13. Waliser, D.E., W.D. Collins, and S.P. Anderson, 1995: An estimate of the surface short-wave cloud forcing over the western Pacific during TOGA COARE. *Geophys. Res. Lett.*, **23**, 519–522.
- 2.14. Collins, W.D., F.P.J. Valero, P. Flatau, H. Grassl, and P. Pilewskie, 1996: The radiative effects of convection in the tropical Pacific. *J. Geophys. Res.*, **101**, 14999–15012.

- 2.15. Valero, F.P.J., W.D. Collins, P. Pilewskie, P. Flatau, and A. Bucholtz, 1997: Direct radiometric observations of the water vapor super greenhouse effect over the equatorial Pacific ocean. *Science*, **275**, 1773–1776.
- 2.16. Collins, W.D., J. Wang, J.T. Kiehl, G.J. Zhang, D. Cooper, and W. Eichinger, 1997: Comparison of tropical ocean-atmosphere fluxes with the NCAR Community Climate Model CCM3. *J. Climate*, **10**, 3047–3058.
- 2.17. Zender, C.S., S. Pope, B. Bush, W.D. Collins, J.T. Kiehl, F.P.J. Valero, and J. Vitko, 1997: Atmospheric absorption during ARESE. *J. Geophys. Res.*, **102**, 29901–29915.
- 2.18. Valero, F.P.J., A. Bucholtz, B. Bush, S.K. Pope, W.D. Collins, P. Flatau, A. Strawa, and W.J.Y. Gore, 1997: The Atmospheric Radiation Measurement Enhanced Shortwave Experiment (ARESE): Experimental and data details. *J. Geophys. Res.*, **102**, 29929–29937.
- 2.19. Heymsfield, A.J., G.M. McFarquhar, W.D. Collins, J.A. Goldstein, F.P.J. Valero, J. Spinhirne, W. Hart, and P. Pilewskie, 1998: Cloud microphysical properties leading to highly reflective tropical cirrus. *J. Geophys. Res.*, **103**, 8805–8812.
- 2.20. Jayaraman, A., D. Lubin, S. Ramachandran, V. Ramanathan, E. Woodbridge, W.D. Collins, and K.S. Zalpuri, 1998: Direct observations of aerosol radiative forcing over the tropical Indian Ocean during the Jan.–Feb. 1996 pre-INDOEX cruise. *J. Geophys. Res.*, **103**, 13827–13836.
- 2.21. Kandel, R., M. Viollier, P. Raberanto, J.Ph. Duvel, L.A. Pakhomov, V.A. Golovko, A.P. Trishchenko, J. Mueller, E. Raschke, R. Stuhlmann, and the International ScaRaB Scientific Working Group, 1998: The ScaRaB Earth Radiation Budget Dataset. *Bull. Amer. Meteor. Soc.*, **79**, 765–783.
- 2.22. Collins, W.D., 1998: A global signature of enhanced shortwave absorption by clouds. *J. Geophys. Res.*, **103**, 31669–31679.
- 2.23. van Hees, R.M., J. Lelieveld, and W.D. Collins, 1999: Detecting tropical convection using AVHRR satellite data. *J. Geophys. Res.*, **104**, 9213–9228.
- 2.24. Wu, X., W.D. Hall, W.W. Grabowski, M.W. Moncrieff, W.D. Collins, and J.T. Kiehl, 1999: Long-term behavior of cloud systems in TOGA COARE and their interactions with radiative and surface processes, part II: Effects of microphysics on cloud-radiation interaction. *J. Atmos. Sci.*, **56**, 3177–3195.
- 2.25. Meehl, G.A., W.D. Collins, B.A. Boville, J.T. Kiehl, T.M.L. Wigley, and J.M. Arblaster, 2000: Response of the NCAR Climate System Model to increased CO₂ and the role of physical processes. *J. Climate*, **13**, 1879–1898.
- 2.26. Bony, S., W.D. Collins, and D.W. Fillmore, 2000: Indian Ocean low clouds during the winter monsoon. *J. Climate*, **13**, 2028–2043.

- 2.27. Collins, W.D., A. Bucholtz, D. Lubin, P. Flatau, F.P.J. Valero, C.P. Weaver, and P. Pilewskie, 2000: Determination of surface heating by convective cloud systems in the central equatorial Pacific from surface and satellite measurements. *J. Geophys. Res.*, **105**, 14807–14821.
- 2.28. Collins, W.D., 2001: Effects of enhanced shortwave absorption on coupled simulations of the tropical climate system. *J. Climate*, **14**, 1147–1165.
- 2.29. Collins, W.D., P.J. Rasch, B.E. Eaton, B.V. Khatatov, J.-F. Lamarque, and C.S. Zender, 2001: Simulating aerosols using a chemical transport model with assimilation of satellite aerosol retrievals: Methodology for INDOEX. *J. Geophys. Res.*, **106**, 7313–7336.
- 2.30. Rasch, P.J., W.D. Collins and B.E. Eaton, 2001: Understanding the Indian Ocean Experiment (INDOEX) aerosol distributions with an aerosol assimilation. *J. Geophys. Res.*, **106**, 7337–7356.
- 2.31. Clarke, A., W.D. Collins, P.J. Rasch, V. Kapustin, K. Moore, and S. Howell, 2001: Pollution transport on global scales: Measurements and model predictions. *J. Geophys. Res.*, **106**, 32555–32570.
- 2.32. Ramanathan, V., P.J. Crutzen, J. Lelieveld, D. Althausen, J. Anderson, M.O. Andreae, W. Cantrell, G. Cass, C.E. Chung, A.D. Clarke, W.D. Collins, J.A. Coakley, F. Dulac, J. Heintzenberg, A.J. Heymsfield, B. Holben, J. Hudson, A. Jayaraman, J.T. Kiehl, T.N. Krishnamurti, D. Lubin, A.P. Mitra, G. McFarquhar, T. Novakov, J.A. Ogren, I.A. Podgorny, K. Prather, J.M. Prospero, K. Priestley, P.K. Quinn, K. Rajeev, P.J. Rasch, S. Rupert, R. Sadourny, S.K. Satheesh, P. Sheridan, G.E. Shaw, and F.P.J. Valero, 2001: The Indian Ocean Experiment: An integrated assessment of the climate forcing and effects of the great Indo-Asian haze. *J. Geophys. Res.*, **106**, 28371–28398.
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- 2.34. Duvel, J.P., M. Viollier, P. Raberanto, R. Kandel, M. Haeffelin, L.A. Pakhomov, V.A. Golovko, J. Mueller, R. Stuhlmann, and the International ScaRaB Scientific Working Group, 2001: The ScaRaB-Resurs Earth radiation budget dataset and first results. *Bull. Amer. Meteor. Soc.*, **82**, 1397–1408.
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- 2.40. Diner, D.J., R.T. Menzies, R.A. Kahn, T.L. Anderson, J. Bosenberg, R.J. Charlson, B.N. Holben, C.A. Hostetler, M.A. Miller, J.A. Ogren, G.L. Stephens, O. Torres, B.A. Wielicki, P.J. Rasch, L.D. Travis, and W.D. Collins, 2004: Using the PARAGON framework to establish an accurate, consistent, and cohesive long-term aerosol record. *Bull. Amer. Meteor. Soc.*, **85**, 1535–1548.
- 2.41. Meehl, G.A., W.M. Washington, W.D. Collins, J.M. Arblaster, A. Hu, L.E. Buja, W.G. Strand, and H. Teng, 2005: How much more global warming and sea level rise? *Science*, **307**, 1769–1772.
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- 2.43. Lamarque, J.F., J.T. Kiehl, P.G. Hess, W.D. Collins, L.K. Emmons, P. Ginoux, C. Lou, and X.X. Tie, 2005: Coupled chemistry-climate response to changes in aerosols emissions: global impact on the hydrological cycle and the tropospheric burdens of OH, ozone and NO_x. *Geophys. Res. Lett.*, **32**, article no. L16809, doi:10.1029/2005GL023419.
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- 2.47. Kiehl, J.T., C.A. Shields, J.J. Hack, and W.D. Collins, 2006: The climate sensitivity of the Community Climate System Model: CCSM3. *J. Climate*, **19**, 2584–2596.
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- 2.50. Collins W.D., V. Ramaswamy, M.D. Schwarzkopf, Y. Sun, R.W. Portmann, Q. Fu, S.E.B. Casanova, J.-L. Dufresne, D.W. Fillmore, P.M.D. Forster, V.Y. Galin, L.K. Gohar, W.J. Ingram, D.P. Kratz, M.-P. Lefebvre, J. Li, P. Marquet, V. Oinas, Y. Tsushima, T. Uchiyama and W.Y. Zhong, 2006: Radiative forcing by well-mixed greenhouse gases: Estimates from climate models in the IPCC AR4. *J. Geophys. Res.*, **111**, article no. D14317, doi:10.1029/2005JD006713.
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- 2.69. Hsieh, W.C., W. D. Collins, Y. Liu, J. C. H. Chiang, C.L. Shie, K. Caldeira, and L. Cao, 2013: Climate response due to carbonaceous aerosols and aerosol induced SST effects in NCAR community atmospheric model CAM3.5. *Atmos. Chem. Phys. Discuss.*, 13, 73497396, 2013, doi:10.5194/acpd1373492013.
- 2.70. Hsieh, W.-C.; Rosa, D.; and Collins, W.D., 2012: Global dust simulations in the multiscale modeling framework. *Journal of Advances in Modeling of the Earth System (JAMES)*, 5, 15–31, doi:10.1029/2012MS000150.
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42. Fillmore, D.W., and W.D. Collins, 2002: Global aerosol distributions from a chemical transport model with MODIS assimilation. 2002 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **83** (no. 47), p. F108.
43. Masonis, S.J., T.L. Anderson, A.D. Clarke, B.J. Huebert, W.D. Collins, J.R. Anderson, S.G. Howell, C.S. McNaughton, D.S. Covert, and N.C. Ahlquist, 2002: Constraining the single scatter albedo of Asian dust using in-situ measurements. 2002 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **83** (no. 47), p. F124.

44. Bond, T.C., P.J. Rasch, W.D. Collins, and D.G. Streets, 2002: Climate forcing by black and organic carbon: Central values and uncertainties. 2002 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **83** (no. 47), p. F129.
45. Collins, W.D., P.J. Rasch, A.J. Conley, D.W. Fillmore, V. Ramanathan, and J.T. Kiehl, 2002: Atmospheric response to anthropogenic aerosols modeled using assimilation. 2002 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **83** (no. 47), p. F194.
46. Collins, W.D., D.W. Fillmore, and A.J. Conley, 2003: Response of the coupled climate system to aerosols simulated with a MODIS aerosol assimilation. 2003 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **84** (no. 46), p. F132.
47. Fillmore, D.W., W.D. Collins, and A.J. Conley, 2003: Aerosol direct radiative forcing – Estimates from a global aerosol analysis with a MODIS assimilation. 2003 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **84** (no. 46), p. F67.
48. Charlock, T.P., F.G. Rose, D. Rutan, Z. Jin, D. Fillmore, and W.D. Collins, 2004: Global retrievals of the surface and atmosphere radiation budget and direct aerosol forcing. *Thirteenth Conference on Satellite Meteorology and Oceanography*, Sep. 20 – 24, 2004, Norfolk, Virginia (American Meteorological Society, Boston), abstract P8.11.
49. Jensen, M.P., A.M. Vogelmann, and W. Collins, 2004: Radiative effects of stratus cloud subgrid scale variability observed by MODIS. 2004 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., abstract A51A-0738.
50. Vogelmann, A.M., M.P. Jensen and W.D. Collins, 2004: Regional and seasonal variations in stratus cloud properties from MODIS observations. 2004 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., abstract A21C-0752.
51. Yoshioka, M., N. Mahowald, A. Conley, D. Fillmore, W. Collins, and C. Zender, 2005: Impact of Desert Dust Radiative Forcing on Sahel Precipitation. 2005 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 86(52), Fall Meeting Suppl., abstract P13B-0157.
52. Collins, W.D., and A.J. Conley, 2006: A constructive method for approximating transmission in radiative transfer calculations. 2006 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 87(52), Fall Meeting Suppl., abstract A41D-0050.
53. Kato, S., S. Sun-Mack, W.F. Miller, F.G. Rose, P. Minnis, B.A. Wielicki, D.M. Winker, G. Stephens, T.P. Charlock, W.D. Collins, N.G. Loeb, P.W. Stackhouse, and K.-M. Xu, Cloud vertical profiles derived from CALIPSO and CloudSat and a comparison with MODIS derived clouds, 2008 Spring Meeting, American Geophysical Union, *Eos Trans. AGU*, 89(23), Jt. Assem. Suppl., abstract A33C-08.
54. Collins, W.D., V. Ramaswamy, A. Conley, and M. Iacono, 2008: The significance of shortwave methane forcing for climate change, Invited presentation in Session GC13, Regional-Scale Forcing of Climate, *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract GC23A-0740.

55. Feldman, D., and W.D. Collins, 2008: CLARREO Shortwave Observing System Simulation Experiment to Detect Forcing and Feedback, in Session GC19, SI-Traceable Climate Measurements From Space: Requirements, Methods, and Accuracies. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract GC23A-0740.
56. Collins, W.D., D.R. Feldman, and C.A. Algieri, 2009: Detecting Land Surface and Cloud Feedbacks using Shortwave CLARREO Spectra. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract GC51B-08. December 12-14, 2009.
57. Pressel, K.G., W.D. Collins, 2009: Satellite observations of atmospheric water vapor. 62nd Annual Meeting of the APS Division of Fluid Mechanics. Vol. 54(19), Abstract BAPS.2009.DFD.AS.3, Nov. 22-24, 2009, Minneapolis, Minnesota.
58. Feldman, D.R., and W.D. Collins, 2010: Detecting Aerosols and Greenhouse Gases Forcings using Shortwave CLARREO Spectra. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract GC51B-07. December 12-14, 2009.
59. Rosa, D., and W. Collins, 2010: Global Chemical Transport of Radon and Carbon Monoxide using the Colorado State University Multiscale Modeling Framework. Poster EGU2010-12880 (session AS1.10), European Geophysical Union Meeting, Vienna, May 3, 2010.
60. Collins, W.D., and C.A. Algieri, 2010: The significance of shortwave methane forcing for climate change. Presentation EGU2010-12514 (session CL2.2), European Geophysical Union Meeting, Vienna, May 3, 2010.
61. Feldman, D.R., W. D. Collins, C. Algieri, J. Ong, and A. Young, 2010: The Earth's reflected shortwave spectrum: present and future. Talk 1.1, 13th Cloud Physics and Atmospheric Radiation Conference of the American Meteorological Society, Portland, Jun. 27 – Jul 2, 2010.
62. Hsieh, W.-C., D. Rosa and W. Collins, 2010: The effect of superparameterization on aerosol transport. Poster P1.46, 13th Cloud Physics and Atmospheric Radiation Conference of the American Meteorological Society, Portland, Jun. 27 – Jul 2, 2010.
63. Kato, S., F. G. Rose, S. Sun-Mack, W. F. Miller, Y. Chen, B. A. Wielicki, D. M. Winker, G. L. Stephens, P. Minnis, N. Loeb, T. P. Charlock, P. W. Stackhouse, K. M. Xu, and W. Collins, 2010: Computation of atmospheric heating rates and surface irradiances using CALIPSO, CloudSat and MODIS derived cloud and aerosol properties. Talk 8.4, 13th Cloud Physics and Atmospheric Radiation Conference of the American Meteorological Society, Portland, Jun. 27 – Jul 2, 2010.
64. Pressel, K.G., W.D. Collins, and A.R. Desai, 2010: Variance scaling in water vapor measurements from a tall tower. Poster P1.77, 13th Cloud Physics and Atmospheric Radiation Conference of the American Meteorological Society, Portland, Jun. 27 – Jul 2, 2010.

65. Wielicki, B.A., and D. F. Young, J. G. Anderson, F. Best, K. Bowman, B. Cairns, W. Collins, J. Corliss, D. R. Doelling, J. A. Dykema, D. R. Feldman, R. Holz, Y. Huang, Z. Jin, K. Jucks, S. Kato, D. F. Keyes, D. B. Kirk-Davidoff, R. Knuteson, G. Kopp, D. P. Kratz, A. A. Lacis, S. Leroy, X. Liu, C. Lukashin, A. J. Mannucci, M. I. Mishchenko, M. G. Mlynczak, N. Phojanamongkolkij, P. Pilewskie, S. Platnick, V. Ramaswamy, H. Revercomb, C. M. Roithmayr, F. G. Rose, S. Sandford, E. Shirley, P. Speth, K. J. Thome, D. Tobin, and J. Xiong, 2010: CLARREO: decadal change accuracy for reflected and emitted Earth spectra. Talk 9.1, 13th Cloud Physics and Atmospheric Radiation Conference of the American Meteorological Society, Portland, Jun. 27 – Jul 2, 2010.
66. Pressel, K. and W. Collins, 2010: Statistical scale invariance in satellite observations of water vapor mixing ratio from the Atmospheric Infrared Sounder. Abstract: MG.00004, 63rd Annual Meeting of the APS Division of Fluid Dynamics, November 21 – 23, 2010; Long Beach, California.
67. Rubin, J.I., W. Collins, and A.F. Arellano, 2010: Uncertainty analysis in global aerosol size distribution and composition using ensemble based data assimilation. Abstract A11E-0093, 2010 Fall AGU Meeting, San Francisco, CA.
68. Gunn, L.N., and W. Collins, 2010: Long-wave radiative forcing due to mineral dust aerosol. Abstract A11E-0101, 2010 Fall AGU Meeting, San Francisco, CA.
69. Jones, A., M.S. Torn, W.J. Riley, and W. Collins, 2010: Factors Driving Biofuel Crops Influence on Climate. Abstract B22D-07, 2010 Fall AGU Meeting, San Francisco, CA.
70. Murphy, L.N., W.J. Riley, M.S. Torn, and W. Collins, 2010: Expansion of woody biomass for bioenergy feedstock in the Southeastern US has local and remote climate impacts. Abstract B23D-0419, 2010 Fall AGU Meeting, San Francisco, CA.
71. Feldman, D., W. Collins, C. Algieri, and J. Ong, 2010: Spectral Forcing and Feedback Signals in IPCC Simulations: Simulations of Next-Generation Observing Systems. Abstract GC41B-0896, 2010 Fall AGU Meeting, San Francisco, CA.
72. Li, F., W. Collins, M.F. Wehner, D. Williamson, and J. Olson, 2010: Response of precipitation extremes to global warming in an aqua-planet climate model: towards robust projection from regional to global scales. Abstract GC51K-01, 2010 Fall AGU Meeting, San Francisco, CA.
73. Pressel, K.G., and W. Collins, 2010: Structure Function Analysis of Scaling in Water Vapor Observations from AIRS. Abstract A52B-03, 2010 Fall AGU Meeting, San Francisco, CA.
74. Collins, W., Feldman, D., C. Algieri, and J. Ong, 2010: Climate Change Time-to-Detection Simulations using IPCC Models for Shortwave Forcings and Feedbacks. Abstract GC53C-04, 2010 Fall AGU Meeting, San Francisco, CA.
75. Collins, W.D, and D.R. Feldman, 2011: The future evolution of the Earth's reflected shortwave spectrum . Abstract 8.3, 23rd Conference on Climate Variability and Change,

- 91st American Meteorological Society Annual Meeting, Seattle, WA. William D. Collins, University of California, Berkeley, CA.
76. Li, F., W. Collins, M. F. Wehner, D. L. Williamson, and J. G. Olson, 2011: Impact of horizontal resolution on simulation of precipitation extremes in an aqua-planet version of the Community Atmosphere Model. Abstract, PM10A.4, 23rd Conference on Climate Variability and Change, 91st American Meteorological Society Annual Meeting, Seattle, WA.
77. Jones, A.D., M. Torn, W. Collins, and W. J. Riley, 2011: Characterizing the Climate Effects of Biofuel Cultivation. Abstract 11A.3, 23rd Conference on Climate Variability and Change, 91st American Meteorological Society Annual Meeting, Seattle, WA.
78. Collins, W.D., F. Li, M. Wehner, D. Williamson, and J. Olson, 2011: Response of extremes to global warming in an aqua-planet climate model: Towards robust projection from regional to global scales. Abstract EGU2011-10451, Session NH1.2/AS4.7/HS12.6, European Geophysical Union General Assembly 2011, Vienna, Austria.

6.2 Conference Presentations and Talks

1. Collins, W.D., J.T. Kiehl, J. Wang, and G.J. Zhang, 1996: Validation of the NCAR community climate model with TOGA COARE observations. *Eighth Conference on Air-Sea Interaction*, 76th AMS Annual Meeting, Jan. 28–Feb. 2, 1996, Atlanta, Georgia (American Meteorological Society, Boston).
2. Zhang, G.J., J.T. Kiehl, W.D. Collins, and J. Wang, 1996: Sensitivity of surface evaporation in the tropical Pacific to treatment of convection in the NCAR climate model. *Eighth Conference on Air-Sea Interaction*, 76th AMS Annual Meeting, Jan. 28–Feb. 2, 1996, Atlanta, Georgia (American Meteorological Society, Boston).
3. Zender, C.S., S. Pope, B. Bush, W.D. Collins, J.T. Kiehl, F.P.J. Valero, and J. Vitko, 1997: Atmospheric absorption during ARESE. *Ninth Conference on Atmospheric Radiation*, 77th AMS Annual Meeting, Feb. 2–7, 1997, Long Beach, California (American Meteorological Society, Boston).
4. Collins, W.D., 1998: A global signature of enhanced shortwave absorption by clouds. Gordon Conference on Solar Radiation and Climate, Plymouth State College, Jun. 15–19, 1998, Plymouth, New Hampshire.
5. Collins, W.D., 1998: The atmospheric radiative heating rate during COARE: Estimation from observations and model simulations. *Proceedings of a conference on the TOGA Coupled Ocean-Atmosphere Response Experiment (COARE)* (World Climate Research Program, Geneva), WCRP-107, WMO/TD-No. 940, Jul. 7–14, 1998, Boulder, Colorado.
6. Collins, W.D., P.J. Rasch, and B.E. Eaton, 1999: Forecasting aerosols using a CTM with assimilation of satellite aerosol retrievals. Workshop on Mineral Dust, Jun. 9–11, 1999, Boulder, Colorado.

7. Collins, W.D., P.J. Rasch, and B.E. Eaton, 1999: A prototype global aerosol analysis using assimilation of satellite retrievals of aerosol optical thickness. NCAR ACD Workshop on Chemical Data Assimilation and Applications to Satellite Observations, Nov. 8–9, 1999, Boulder, Colorado.
8. Valero, F.P.J., S.K. Pope, and W.D. Collins, 2000: ScaRaB, GOES-8, aircraft and surface observations of the absorption of solar radiation by clouds. Gordon Conference on Solar Radiation and Climate, Connecticut College, Jun. 24–29, 2000, New London, Connecticut.
9. Collins, W.D., 2001: New treatments of radiative processes in the NCAR Community Climate Model. 8th Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences, Jul. 10–18, 2001, Innsbruck, Austria.
10. Collins, W.D., 2001: Improved estimates of global atmospheric shortwave absorption by aerosols in clear and cloudy atmospheres. Chapman Conference on Atmospheric Absorption of Solar Radiation, Aug. 13–17, 2001, Estes Park, Colorado.
11. Fillmore, D.W., and W.D. Collins, 2001: Evidence for enhanced shortwave absorption over the tropical Pacific from collocated satellite and buoy observations. Chapman Conference on Atmospheric Absorption of Solar Radiation, Aug. 13–17, 2001, Estes Park, Colorado.
12. Collins, W.D. and D.W. Fillmore, 2002: Effects of clouds on direct radiative forcing by absorptive aerosols. *11th Conference on Atmospheric Radiation*, Jun. 3–7, 2002, Ogden, Utah (American Meteorological Society, Boston).
13. Collins, W.D., 2002: Overview of aerosol/climate interactions and radiative forcing: Parts I and II. NCAR ASP Summer Colloquium, “Interactions among Aerosols, Climate, and the Hydrological Cycle”, Jul. 8–19, 2002, Boulder, Colorado.
14. Collins, W.D., 2002: Techniques of aerosol assimilation. NCAR ASP Summer Colloquium, “Interactions among Aerosols, Climate, and the Hydrological Cycle”, Jul. 8–19, 2002, Boulder, Colorado.
15. Mlyneczek, M., D. Johnson, K. Jucks, W. Traub, G. Bingham, P. Yang, C. Mertens, L. Gordley, B. Smith, W. Collins, C.R. Hyde, and S. Wellard, 2003: The Far-Infrared Spectroscopy of the Troposphere (FIRST) Project – A new instrument for AURA validation. AURA Validation Workshop, Mar. 18–21, 2003.
16. Mlyneczek, M., D. Johnson, K. Jucks, W. Traub, G. Bingham, D. Kratz, P. Yang, C. Mertens, L. Gordley, B. Smith, W. Collins, J. Harries, R. Rizzi, C.R. Hyde, and S. Wellard, 2003: The Far-Infrared Spectroscopy of the Troposphere (FIRST) Project. Advanced Infrared Technology (AITA) Workshop, Sep. 2003, Pisa, Italy.
17. Collins, W.D., 2003: Effects of aerosols on regional and global climate. Workshop on Global Aerosol Measurements for Climate Studies: Present and Future, Sep. 17, 2003, Paris, France.

18. Collins, W.D., P.J. Rasch, A. Conley, and D. Fillmore, 2003: Regional and global effects of anthropogenic aerosols on the hydrological cycle. International Conference on Earth System Modeling, Sep. 19, 2003, Hamburg, Germany.
19. Collins, W.D., 2004: Cloud feedbacks in the NCAR Community Climate System Model CCSM3. Joint WGCM CFMIP/IPCC expert meeting on Climate Sensitivity and Feedbacks, Apr. 19-22, 2004, Exeter, UK.
20. Collins, W.D., 2004: Estimates of regional and global forcing: How good are our models? Aspen Global Change Institute symposium, "Aerosols and the Hydrological Cycle", Jul. 11-17, 2004, Aspen, Colorado.
21. Collins, W.D., D.W. Fillmore, V. Ramaswamy, and M.D. Schwarzkopf, 2004: Comparison of radiative forcings from GCMs and line-by-line models. IPCC Workshop on Climate Sensitivity, Jul. 26-29, 2004, Paris, France.
22. Collins, W.D., 2004: Radiative transfer and forcing. IPCC Workshop on Climate Sensitivity, Jul. 26-29, 2004, Paris, France.
23. Charlock, T.P., F.G. Rose, D. Rutan, D.W. Fillmore, and W.D. Collins, 2004: All-sky aerosol direct forcing to SW and LW at TOA and surface using CERES Terra and the MATCH assimilation. International Radiation Symposium 2004, "Current Problems in Atmospheric Radiation", Aug. 23-28, 2004, Busan, South Korea.
24. Lamarque, J.F., J. Kiehl, G. Brasseur, T. Butler, P. Cameron-Smith, W.D. Collins, W.J. Collins, C. Granier, D. Hauglustaine, P. Hess, E. Holland, L. Horowitz, M. Lawrence, D. McKenna, P. Merilees, L. Mickley, M. Prather, P. Rasch, D. Rotman, D. Shindell, and P. Thornton, 2004: Nitrogen deposition evolution in the 21st century under the A2-scenario: A multi-model multi-climate analysis. Eighth International Global Atmospheric Chemistry Conference, Sep. 4-9, 2004, Christchurch, New Zealand.
25. Holland, E.A., J.-F. Lamarque, J. Sulzman, G. Brasseur, T. Butler, P. Cameron-Smith, W.D. Collins, W.J. Collins, P. Hess, D. Hauglustain, J. Kiehl, D. McKenna, M. Lawrence, H. Levy, D. Shindell, 2004: Evaluation of nitrogen deposition in precipitation: A multi-model comparison with EMEP and NADP measurements. Eighth International Global Atmospheric Chemistry Conference, Sep. 4-9, 2004, Christchurch, New Zealand.
26. Collins W.D., G.A. Meehl, T.M.L. Wigley, and H. Teng, 2005: Simulations of committed climate change and sea-level rise through 2400 AD. US Climate Change Science Program (CCSP) Workshop "Climate Science in Support of Decision Making", Nov. 14-16, 2005, Arlington, Virginia.
27. Collins, W.D., and A.J. Conley, 2006: New methods for representing transmission in radiative parameterizations. EGU General Assembly, Apr. 2-7, 2006, Vienna, Austria.
28. Sun, D.Z., T. Zhang, C. Covey, S. Klein, W. Collins, J.J. Hack, J. Kiehl, G.A. Meehl, I. M. Held, and M. Suarez, 2007: Atmospheric Feedbacks Over the Pacific Cold-Tongue: Results From Models and Observations. 3rd WGNE Workshop on Systematic Errors in Climate and NWP Models, Feb. 12-16, 2007, San Francisco, California.

29. Iacono, M., W. Collins, and P. Rasch, 2008: Evaluating the Impact of RRTMG/McICA in the NCAR CAM3.5 Climate Model, ARM Science Team Meeting, Mar. 10-14, 2008, Norfolk, Virginia.
30. Collins, W.D., 2009: Climate modeling. Carbon cycle 2.0 Retreat, Oct. 12-13, 2009, Chaminade Resort & Spa, Santa Cruz, CA.
31. Kiparsky, M., W. Collins, D. Groves, M. Hanemann, B. Joyce, D. Purkey, and C. Young, 2009: Hydrology And Water Operations Modeling for Climate Change Risk Assessment in Californias Southern Central Valley. AWRA 2009 Spring Specialty Conference: Managing Water Resources Development in a Changing Climate. May 4 – 6, 2009, Anchorage, Alaska.
32. Kato, S., S. Sun-Mack, W.F. Miller, F.G. Rose, B.A. Wielicki, D.M. Winker, G. Stephens, P. Minnis, N.G. Loeb, T.P. Charlock, P.W. Stackhouse, K.-M. Xu, W.D. Collins, 2009: CALIPSO, CloudSat, CERES, and MODIS merged product. Earthcare Workshop, Kyoto, Japan, June 10-12, 2009.
33. Collins, W.D., 2010: A future with(out) CC2.0. Carbon Cycle 2.0 Symposium, Feb.1 2010, LBNL.
34. de Boer, G., W.D. Collins, S. Menon, E. Hunke, and E.W. Eloranta (2010), Quantifying seasonal influence of stratiform mixed-phase clouds on Arctic sea ice growth rates, International Glaciological Society Symposium on Sea Ice in the Physical and Biogeochemical System, Troms, Norway, May 30 – June 4.
35. de Boer, G., W.D. Collins, S. Menon, E. Hunke, and E.W. Eloranta (2010), Quantifying seasonal influence of stratiform mixed-phase clouds on Arctic sea ice growth rates, International Polar Year Science Conference, Oslo, Norway, June 8 – June 12.
36. Feldman, D.R., C.A. Algeri, J. Ong, and W.D. Collins, 2010: Observational System Simulation Experiments of CLARREO Shortwave Reflectance Spectra. 11th International Meeting on Statistical Climatology, Edinburgh, Scotland, July 12-16, 2010.
37. Kato, S., F.G. Rose, S. Sun-Mack, W.F. Miller, Y. Chen, D.A. Rutan, B.A. Wielicki, D.M. Winker, G. Stephens, P. Minnis, N.G. Loeb, T.P. Charlock, P.W. Stackhouse, K.-M. Xu, and W. Collins, 2010: Computation of surface irradiances using CALIPSO, CloudSat and MODIS derived cloud and aerosol properties. NASA A-train Symposium, October 25-28, 2010, New Orleans, LA.
38. Collins, W.D., 2010: Quantifying Uncertainty in Climate and Integrated Assessments. National Climate Assessment Modeling and Scaling Workshop, Dec. 8, 2010, Washington, DC.

6.3 Invited Presentations

6.3.1 Departmental seminars

1. Collins, W.D., 1995: The interaction of convection and the greenhouse effect in the tropical climate. University of North Carolina, Mar. 24, 1995, Raleigh, North Carolina.
2. Collins, W.D., 1997: A global signature of enhanced shortwave absorption by clouds. University of Colorado, May 2, 1997, Boulder, Colorado.
3. Collins, W.D., 1997: A global signature of enhanced shortwave absorption by clouds. University of Utrecht, Jun. 13, 1997, Utrecht, The Netherlands.
4. Collins, W.D., 1997: A global signature of enhanced shortwave absorption by clouds. Scripps Institution of Oceanography, Sep. 9, 1997, La Jolla, California.
5. Collins, W.D., 1997: A global signature of enhanced shortwave absorption by clouds. State University of New York, Oct. 22, 1997, Stony Brook, New York.
6. Collins, W.D., 1997: A global signature of enhanced shortwave absorption by clouds. Colorado State University, Nov. 20, 1997, Fort Collins, Colorado.
7. Collins, W.D., P.J. Rasch, and B.E. Eaton, 2000: Assimilation of atmospheric aerosol observations. University of Utrecht, Sep. 12, 2000, Utrecht, The Netherlands.
8. Collins, W.D., 2001: Modeling of aerosols with assimilation of satellite and surface aerosol observations. Geophysical Fluid Dynamics Laboratory, Princeton University, Apr. 5, 2001, Princeton, New Jersey.
9. Collins, W.D., 2002: Climate sensitivity to radiative effects of upper tropospheric water vapor. University of California, Los Angeles, May 8, 2002, Los Angeles, California.
10. Collins, W.D., 2002: Modeling aerosols with assimilation of observations. University of California, Los Angeles, May 10, 2002, Los Angeles, California.
11. Collins, W.D., 2002: Modeling aerosols with assimilation of observations. University of Miami, May 15, 2002, Miami, Florida.
12. Collins, W.D., 2002: Climate sensitivity to radiative effects of upper tropospheric water vapor. University of Miami, May 16, 2002, Miami, Florida.
13. Collins, W.D., 2002: Future prospects and challenges for global aerosol modeling. California Institute of Technology, Nov. 13, 2002, Pasadena, California.
14. Collins, W.D., 2002: Future prospects and challenges for global aerosol modeling. Stanford University, Nov. 19, 2002, Palo Alto, California.
15. Collins, W.D., 2003: Atmospheric response to natural and anthropogenic aerosols. Colorado State University, Mar. 27, 2003, Fort Collins, Colorado.

16. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: The range of climate forcing and response in global change projections: Problems and prospects for the next IPCC assessment. School of Earth and Environment, University of Leeds, Sep. 5, 2006, Leeds, UK.
17. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: The range of climate forcing and response in projections of global change: Problems and prospects for the next IPCC assessment. Sixth Atmospheric Sciences Symposium, Sep. 29, 2006, University of California, Berkeley, California.
18. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: Radiative Forcing by Greenhouse Gases and its Representation in Global Models. University of Wisconsin Department of Atmospheric and Oceanic Sciences, Nov. 6, 2006, Madison, Wisconsin.
19. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: Radiative Forcing by Greenhouse Gases and its Representation in Global Models. Oxford University Department of Physics, Nov. 13, 2006, Oxford, UK.
20. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: Radiative Forcing in Global Climate Models: Problems and Prospects. Harvard University, Nov. 16, 2006, Harvard, Massachusetts.
21. Collins, W.D., 2007: The roles of solar absorption in climate and climate change, Dept. of Earth and Planetary Science, University of California, Sep. 20, 2007, Berkeley, California.
22. Collins, W.D., 2007: The credibility of climate model predictions for future climate change, Dept. of Environmental Engineering, University of California, Sep. 28, 2007, Berkeley, California.
23. Collins, W.D., 2008: Constructive methods for climate forcing. Dept. of Mathematics, University of California, Feb. 6, 2008, Berkeley, California.
24. Collins, W.D., 2010: On Climate Modeling. Physics Research Progress Meetings at LBNL, May 18, 2010, LBNL.
25. Collins, W.D., 2010: Computational Frontiers in Climate Change. Nov. 19, 2010, UC Berkeley Wireless Research Center, Berkeley, CA.
26. Feldman, D., W. Collins, C. Algieri, and J. Ong, 2011: Using Observing System Simulation Experiments to Guide the Next Generation of NASA Earth-Observing Satellite Instrumentation, April 19, 2011, College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis OR.

6.3.2 Colloquia

27. Collins, W.D., 1998: Statistics of Clouds. Conference on Statistics for Understanding the Atmosphere and Ocean, NCAR Geophysical Statistics Project, Jul. 18–24, 1998, Boulder, Colorado.
28. Collins, W.D., 1999: Unresolved issues in atmospheric solar absorption. Robert Cess Symposium, “Frontiers in the Science of Climate Modeling”, University of California, San Diego, Oct. 19–21, 1999, San Diego, California.
29. Collins, W.D., 2004: Climate models: Principles and applications. NCAR ASP Summer Colloquium, “Climate and Health”, Jul. 21–28, 2004, Boulder, Colorado.
30. Collins, W.D., 2006: An Introduction to CCSM. Art of Climate Modeling Advanced Study Program (ASP) workshop, Jun. 5, 2006, Boulder, Colorado.
31. Collins, W.D., 2006: An Introduction to Climate Modeling. Climate Change and Human Health Advanced Study Program (ASP) workshop, Jul. 17, 2006, Boulder, Colorado.
32. Collins, W.D., 2008: What is a Climate Model? And what can it do?, Summer School on Climate, Mathematical Sciences Research Institute (MSRI), July 25, 2008, Berkeley, California.
33. Collins, W.D., 2009: The Science of Climate Change. Helios Solar Energy Research Center (SERC) Student Retreat, Aug. 10, 2009, Marconi Conference Center, Marshall, California.

6.3.3 Corporate or public meetings

34. Collins, W.D., 2005: Future climate change. Scripps Howard Institute on the Environment, May 19, 2005, Boulder, Colorado.
35. Collins, W.D., 2007: Our Changing World: A Scientific Assessment, St. Andrews Academy, March 29, 2007, Jackson, Mississippi.
36. Collins, W.D., 2007: Global warming: A scientific assessment of our changing world, ex-Ls luncheon, Aug. 16, 2007, Berkeley, California.
37. Collins, W.D., 2007: An overview of climate models: Applications to climate change, Chevron Fellows METamorphosis Conference, Oct. 17, 2007, League City, Texas.
38. Collins, W.D., 2007: Reducing our carbon footprint: Frontiers in climate forecasting, Berkeley Lab series Science at the Theater, Oct. 22, 2007, Berkeley Repertory Theatre, Berkeley, California.
39. Collins, W.D., 2008: Climate change: Past, present, and future, East Bay Municipal Utility District Headquarters, Feb. 27, 2007, Oakland, California.
40. Collins, W.D., 2008: Climate change: Past, present, and future, Association of California Water Agencies (ACWA) Region 5 Program Financial Impacts of Climate Change Apr. 7, 2008, San Francisco, California.

41. Collins, W.D., 2008: Reducing our carbon footprint: Frontiers in climate forecasting, St. Stephens Episcopal Church, Apr. 8, 2008, Orinda, California.
42. Collins, W.D., 2010: Advancing Climate Science for a Sustainable Energy Future. Berkeley International Symposium on Energy and Climate Science (Philomathia), Oct. 1, 2010, Berkeley Reparatory Theater, Berkeley, CA.

6.3.4 Governmental organizations

43. Collins, W.D., 2000: Near-infrared/visible albedo ratio: Implications for climate. National Academy of Sciences Triana Review, Jan. 10, 2000, Washington, DC.
44. Collins, W.D., 2001: Aerosols, clouds, and the global environment: New techniques for modeling. National Science Foundation, May 11, 2001, Ballston, Maryland.
45. Collins, W.D., 2005: Simulations of global climate change commitment for the IPCC AR4. United Nations Framework Convention on Climate Change (UNFCCC) 22nd session of the subsidiary bodies, May 26, 2005, Bonn, Germany.
46. Collins, W.D., 2005: The Community Climate System Model. NRC Panel on Climate Variability and Change, Oct. 24–26, 2005, Washington, DC.
47. Collins, W.D., 2007: The Future Radiative Forcing of the Earths Climate System. DOE Scientific Discovery through Advanced Computing (SciDAC), Jun. 2428, 2007, Boston, Massachusetts.
48. Collins, W.D., 2007: The future of California’s climate from a global perspective, Fourth CEC California Climate Change Conference, Sep. 11, 2007, Sacramento, California.
49. Collins, W.D., 2008: Radiation and clouds: major challenges in forcings and feedbacks, Identifying Outstanding Grand Challenges in Climate Change Research: Guiding DOE’s Strategic Planning, Mar. 25-27, 2008, Arlington, Virginia.
50. Collins, W.D., 2008: Extreme climate change: Scaling laws and scale invariance, ASCR workshop on Mathematics for Analysis of Petascale Data (MAPD), Jun. 3-5, 2008, Rockville, Maryland.
51. Collins, W.D., 2008: Current state of climate change modeling, Invited presentation, National Security and Climate Change Workshop, U.S. Climate Change Science Program Office, November 18, 2008, Washington, DC.
52. Collins, W.D., 2009: Transformation of Climate Change Science: Challenges and Prospects. DOE Climate Change Science Focus Group, July 27-28, 2009, Washington DC.
53. Collins, W.D., 2010: Climate Change. Visit of Environment Industry Study Group, Industrial College of the Armed Forces, National Defense University. April 7, 2010, LBNL.
54. Collins, W.D., 2010: Abrupt climate change from methane hydrate destabilization. Distinguished lecture series, NSF, May 10, 2010, Arlington, VA.

6.3.5 National/international research labs and centers

55. Collins, W.D., and V. Ramanathan, 1991: Thermodynamic regulation of ocean warming by cirrus clouds during the 1987 El Niño. NASA Langley Research Center, Apr. 26, 1991, Hampton, Virginia.
56. Collins, W.D., 1991: Analysis of satellite data for global climate studies. Los Alamos National Laboratory, Dec. 3, 1991, Los Alamos, New Mexico.
57. Collins, W.D., 1998: A global signature of enhanced shortwave absorption by clouds. Seventeenth CERES Science Team Meeting, NASA Langley Research Center, Apr. 21–23, 1998, Hampton, Virginia.
58. Collins, W.D., 1999: Effects of enhanced shortwave absorption on simulations of the tropical Pacific climate system. NASA Goddard Space Flight Center, May 25, 1999, Greenbelt, Maryland.
59. Collins, W.D., 2001: Aerosol assimilation in a GCM. Twenty-third CERES Science Team Meeting, NASA Langley Research Center, Jan. 23–25, 2001, Hampton, Virginia.
60. Collins, W.D., 2001: Modeling aerosols with assimilation of observations. NASA Goddard Space Flight Center, Nov. 28, 2001, Greenbelt, Maryland.
61. Collins, W.D., 2002: Water vapor, clouds, and the Earth radiant energy balance. Goddard Space Flight Center Graduate Student Summer Program, June 11, 2002, Greenbelt, Maryland.
62. Collins, W.D., 2004: The Community Climate System Model. U.S. GLOBEC SSC Meeting, Nov. 4–5, 2004, Boulder, Colorado.
63. Collins, W.D., 2006: Challenges and Prospects for Earth System Modeling. Lawrence Berkeley National Laboratory, Oct. 12, 2006, Berkeley, California.
64. Collins, W.D., 2007: Where do we go from here? Mathematical Science Research Institute Symposium on Climate Change: From Global Models to Local Action, Apr. 1213, 2007, Berkeley, California.
65. Collins W.D., 2007: The computational frontiers of Earth system modeling. Town hall meeting, Department of Energy’s Simulation and Modeling at the Exascale for Energy, Ecological Sustainability, and Global Security (E3SGS), Apr. 17–18, 2007, Berkeley, California.
66. Collins, W.D., 2007: The Future of the Earth’s Climate: Frontiers in Forecasting. Lawrence Berkeley Laboratory Summer Lecture Series, July 11, 2007, Berkeley, California.
67. Collins, W.D., 2008: Earth system simulation for climate change: Challenges and prospects, NASA Ames Research Center GREEN Seminar, Apr. 17, 2007, Moffett Field, California.

68. Collins, W.D., A. Conley, D. Fillmore, and P. Rasch, 2009: The role of solar absorption in climate and climate change, Pacific Northwest National Laboratory, June 8, 2009, Richland, Washington.
69. Collins, W.D., 2009: Radiative Processes. Community Atmosphere Tutorial, July 29, 2009, NCAR, Boulder, Colorado.
70. Collins, W.D., D. Rosa, and Wei-Chun Hsieh, 2011: Chemical Transport in the Multi-scale Modeling Framework: Tests and Implications for Climate. Center for Multiscale Modeling of Atmospheric Processes Meeting, Jan. 11-13, 2011, UC Berkeley, Berkeley, CA.
71. Collins, W.D., D. Feldman, C. Algieri, J. Ong, Y. Roberts, and P. Pilewskie, 2011: The future evolution of the Earth's reflected shortwave spectrum. May 4, 2011, Jet Propulsion Laboratory, Pasadena, CA.
72. Collins, W.D., 2011: Adding Integrated Assessments to the Community Earth System Model: Progress and prospects. Societal Dimensions of Earth System Modeling, May 25, 2011, NCAR, Boulder, CO.
73. Collins, W.D., 2011: A future with(out) climate mitigation. EPA-LBNL workshop on CO₂ Geological sequestration and water resources, June 1, Berkeley, CA.
74. Collins, W.D., etc. 2011: Quantifying Uncertainty in Climate and Integrated Assessments. CESM annual meeting, June 21-23, Breckenridge, Colorado.

6.3.6 National/international society conferences

75. Collins, W.D., and P.J. Rasch, 2000: Assimilation of atmospheric aerosol observations. 2000 Spring Meeting, American Geophysical Union. *Eos. Trans. AGU*, **81** (no. 19), p. S98.
76. Collins, W.D., 2000: Sources of uncertainty in climate-change simulations from coupled climate models. 2000 Fall Meeting, American Geophysical Union. *Eos. Trans. AGU*, **81** (no. 48), p. F21.
77. Collins, W.D., 2003: Radiative balance of the Earth's atmosphere. AAAS Annual Meeting, Feb. 13-18, 2003, Denver, Colorado.
78. Collins, W.D., 2003: Effects of aerosols on regional and global climate. EGS-AGU-EUG General Assembly. *EGS Newsletter*, p. 526.
79. Collins W.D., A.J. Conley, D.W. Fillmore, and P.J. Rasch, 2004: Regional and global response of the climate to aerosol radiative forcing. International Radiation Symposium 2004, "Current Problems in Atmospheric Radiation", Aug. 23-28, 2004, Busan, South Korea.
80. Collins, W.D., W.M. Washington, and G.A. Meehl, 2004: Effects of aerosols on the climate and ecosystem of northern Eurasia: Results from global models. 2004 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., abstract A24C-06.

81. Collins, W.D. V. Ramaswamy, Q. Fu, M.D. Schwarzkopf, and D.W. Fillmore, 2005: Radiative forcing by well-mixed greenhouse gases: Estimates from GCMs in the IPCC AR4. *Sixteenth Conference on Climate Variability and Change*, 85th Annual AMS Meeting, Jan. 10–13, 2005, San Diego, California (American Meteorological Society, Boston), abstract 6.4.
82. Collins, W.D., 2005: Prospects for an Earth system model to study global climate change. American Physical Society March Meeting, Mar. 21–25, 2005, Los Angeles, California.
83. Collins, W.D., 2005: Radiative Forcing by Well-Mixed Greenhouse Gases: Comparison of IPCC Models. International Association of Meteorology and Atmospheric Sciences (IAMAS) 2005 Conference, Aug. 8, 2005, Beijing, China.
84. Collins, W.D. and D.W. Fillmore, 2005: An aerosol analysis using NASA Aqua and Terra satellite observations. American Association for Aerosol Research (AAAR) 2005 annual conference, Oct. 17–21, 2005, Austin, Texas.
85. Collins, W.D., 2007: The role of climate benchmark records in climate-change attribution and projection, 2007 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., abstract A54D-02.
86. Collins, W.D., 2007: The role of climate benchmark records in climate-change attribution and projection, 2007 Fall Meeting, American Geophysical Union, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., abstract A54D-02.
87. Collins, W.D., 2008: Scaling laws, scale invariance, and climate prediction, talk 1035-60-1976, SIAM Minisymposium, Joint Mathematics Meeting, Jan. 7, 2008, San Diego, California.
88. Collins, W.D., 2008: Computational Challenges for Dynamic Earth System Models, Symposium 180-071: Transforming Our Ability To Predict Climate Change and Its Effects, American Association for the Advancement of Science Annual Meeting, Feb. 16, 2008, Boston, Massachusetts.
89. Mlynczak, M.G., D.F. Young, B.A. Wielicki, Y. Huang, S.S. Leroy, D. Feldman, and W. Collins, 2010: Evaluating Climate Models with CLARREO. Abstract A12B-01, 2010 Fall AGU Meeting, San Francisco, CA.

6.3.7 National/international workshops

90. Collins, W.D., 1993: Satellite data for diagnostics and for validation of model simulations. *Proceedings of the EUCREX/NOCLIMP Workshop, 24–26 May, 1993* (Department of Meteorology Report, Stockholm University), pp. 19–28.
91. Collins, W.D., 1998: Effects of enhanced shortwave absorption on simulations of the tropical Pacific ocean/atmosphere system. *GCSS-WGNE Workshop on Cloud Processes and Cloud Feedbacks in Large-Scale Models* (World Climate Research Program, Geneva), WCRP-110, WMO/TD-No. 993, Nov. 9–13, 1998, ECMWF, Reading, England.

92. Collins, W.D., 2003: Aerosols: What are the links with climate and how well are we modeling them? NCAR Chemistry-Climate Interactions Workshop, Feb. 10–12, 2003, Sante Fe, New Mexico.
93. Collins, W.D., 2003: Understanding the role of aerosols in climate through synthesis of models and observations. Gordon Conference on Solar Radiation and Climate, Colby-Sawyer College, Jul. 13–18, 2003, New London, Connecticut.
94. Collins, W.D., 2003: The Community Climate System Model. Keynote address, Computing in the Atmospheric Sciences Workshop 2003 (CAS2K3), Sep. 8, 2003, Annecy, France.
95. Collins, W.D., V. Ramaswamy, Q. Fu, M.D. Schwarzkopf, Y. Sun, R. Portmann, and D.W. Fillmore, 2005: Radiative forcing by well-mixed greenhouse gases: Estimates from GCMs in the IPCC AR4. Atmospheric Radiation Measurement Meeting, Mar. 15–16, 2005, Daytona Beach, Florida.
96. Collins, W.D., 2005: Issues of upscaling and downscaling research – A GCM perspective. WRF-RCM Workshop, Mar. 22–23, 2005, Boulder, Colorado.
97. Collins, W.D., 2005: Status of CCSM. Computing in the Atmospheric Sciences Workshop 2005 (CAS2K5), Sep. 11–14, 2005, Annecy, France.
98. Bader, D.C., J. Hack, D. Randall, and W. Collins, 2005: Climate simulation for climate change studies. Workshop on Frontiers of Extreme Computing, Oct. 17, 2005, Santa Cruz, California.
99. Collins, W.D., 2006: Regional effects of aerosol emissions. Conference on Climate Change and Urban Areas. Apr. 3–4, 2006, University College London, London, United Kingdom.
100. Collins, W., and J. Wolfe, 2006: The Community Climate System Model CCSM3. Geoscience Application Requirements for Petascale Architectures (GARPA) workshop, Jun. 1–2, 2006, Arlington, Virginia.
101. Collins, W.D., 2006: Modeling the Changing Earth System: Prospects and Challenges. IBM System Scientific Computing User Group meeting SCICOMP-12, Jul. 17, 2006, Boulder, Colorado.
102. Collins W.D., A.J. Conley, and RTMIP coauthors, 2006: Radiative Forcing by Greenhouse Gases and its Representation in Global Models. 2006 Solar Radiation and Climate Experiment (SORCE) Science Meeting, Sep. 20-22, 2006, Eastsound, Washington.
103. Collins, W.D., 2007: Radiation errors in climate models. 3rd WGNE Workshop on Systematic Errors in Climate and NWP Models, Feb. 12-16, 2007, San Francisco, California.
104. Collins, W.D., 2007: CLARREO: A climate model prediction perspective, University of Maryland, Jul. 16, 2007, College Park, Maryland.

105. Collins, W.D., 2008: Collaboration in climate research: The age of assessments, Berkeley Conference on Climate Research Management, Apr. 24, 2008, Berkeley, California
106. Collins, W.D., 2008: What is a climate model? And what can it do?, Amphibia Tree (ATree) Species Distribution Modeling Workshop, University of California, Berkeley, December 5, 2008, Berkeley, California.
107. Collins, W.D., 2008: Computational challenges for dynamic Earth system models, The International Supercomputing Conference, Jun. 18, 2008, Dresden, Germany.
108. Collins, W.D., 2008: Abrupt and Extreme Climate Change: Implications for Water, XVII International Conference on Computational Methods in Water Resources (CMWR 2008), July 6-10, 2008, San Francisco, California.
109. Collins, W.D., V. Ramaswamy, A. Conley, and M. Iacono, 2009: The significance of shortwave methane forcing for climate change, Joint IPCC-WCRP-IGBP Workshop: New Science Directions and Activities Relevant to the IPCC AR5, March 4, 2009, University of Hawaii, Honolulu, Hawaii.
110. Collins, W.D., and D. Bader, 2009: Exascale applications in climate science, 2009 U.S. / Japan Climate Change and Sustainability Workshop, March 17, 2009, Oak Ridge, Tennessee.
111. Collins, W.D., 2010: "Abrupt Climate Change from Methane Hydrate Destabilization", Current Challenges in Computing 2010: Climate Modeling, Aug. 31, 2010, The Meritage Resort and Spa, Napa California.
112. Feldman, D., W. Collins, C. Algieri, J. Ong, Y. Roberts, and P. Pilewskie, 2011: MODTRAN 5.3 Simulations of Changes in Shortwave and Longwave Spectra from Climate Change in the 21st Century, June 14, 2011, 33rd Review of Atmospheric Transmission Models Meeting, National Heritage Museum, Lexington, MA.

AWARDS:**7 Academic Recognition**

Contributor (lead author) for the Fourth Assessment Report by the Intergovernmental Panel on Climate Change, co-recipient of the 2007 Nobel Peace Prize.

PROFESSIONAL ACTIVITIES, TEACHING, AND SERVICE:**8 Service Activities (last 10 years)****8.1 National and international assessment activities**

Lead and collaborating author, IPCC Working Group I Fourth Assessment Report, 2004 – 2007.

Expert reviewer, IPCC Working Group I Fourth Assessment Report, 2005 – 2006.

Lead author, IPCC Working Group I Fifth Assessment Report, 2010 – present.

8.2 Institutional advisory/committee activities

Co-chair, NCAR Atmospheric Model Working Group, 2001 – 2003.

Chair, NCAR CCSM Scientific Steering Committee, 2003 – 2005.

Member, NCARs Computational and Information Systems Laboratory Advisory Panel, 2005 – present.

Member, CCSM Scientific Steering Committee, 2006 – present.

Member, Search committee for NCAR Atmospheric Chemistry Division Director, 2006 – 2007.

Member, Selection committee, NCAR Advanced Study Program Early Career Scientists, 2006 – 2007.

Alternate for Chancellor's faculty seat, Chancellors Advisory Committee on Sustainability, 2008 – present.

Member, NCAR Earth Observing Laboratory (EOL) Advisory Panel, 2009 – present.

Member, Steering Committee, LBNL Carbon Cycle 2.0 Initiative, 2009 – present.

Affiliated member, UC Berkeley Energy and Resources Group, 2009 – present.

Member, LBNL Earth Sciences Division Council, LBNL, 2007 - present.

Chair, UCB/LBNL search for joint climate faculty/scientist, 2010 – 2011.

Member, LBNL search for Computational Research Division director, 2010 – 2011.

Member, UCB VCR's search committee for BIE director, 2011 – present.

8.3 External advisory/committee activities

Contributing author, NASA Conference on Uncrewed Aerospace Vehicles, 1996.
Panelist, NSF Globe Proposal Review Panel, 1998.
Member, AMS Committee on Atmospheric Radiation, 1999 – 2006.
Chair, AMS Committee on Atmospheric Radiation, 2002 – 2006.
Panelist, United Nations Environmental Program panel on the Asian Brown Cloud, 2001.
Panelist, NASA ESSP-3 Lidar Algorithms Peer Review, 2001.
Chair, NASA Radiation & Climate Peer Review, 2002.
Panelist, National Academy Climate Sensitivity Workshop, 2003.
Invited participant, Joint WGCM CFMIP/IPCC expert meeting on
Climate Sensitivity and Feedbacks, 2004.
Member, NASA Earth-Sun System Subcommittee, 2005.
Member, Joint ASCAC-BERAC subcommittee, Computational and
Informational Technology Rate Limiters to Climate Change Science, 2007.
Panelist, Review of NOAA's Climate Research and Modeling Program for
NOAA Climate Working Group of the NOAA Scientific Advisory Board, 2008.
Member at Large, AAAS Atmospheric Sciences Section, 2009 – 2010t.
Reviewer, U.S. Climate Change Science Program , 2009.
Chair, NASA Goddard Global Modeling and Assimilation Office Review, 2009.
Member, LANL Energy Security External Advisory Board, 2009 – present.
Member, UK Met Office / Hadley Centre Science Review Group, 2009 – present.
Member, PNNL Fundamental and Computational Sciences Board, 2009 – present.
Invited participant, BERAC 20-year Climate Vision Workshop, 2010.
Invited participant, BER Climate Research Roadmap Workshop, 2010.
Panelist and reviewer, DOE Regional Modeling Climate Panel review, 2010.
Steering Committee, National Climate Assessment Modeling and Scaling Workshop, 2010.
Member, ASCR Panel, ORNL Leadership Computing Facility (OLCF-3)
Titan Application Readiness Review, 2010.
Chair, DOE ASCR INCITE allocation panel for climate applications, 2010.
Participant, NRC Workshop on Climate Modeling, 2011.

8.4 Editorial service

Editor, Journal of Climate, 2007 – 2010.

8.5 Professional meeting organizer

- Organizer, ASP Summer Colloquium, “Interactions between Aerosols, Climate, and the Hydrological Cycle”, Jul 2002, Boulder, Colorado.
- Co-chair, Aspen Global Change Institute symposium, “Aerosols and the Hydrological Cycle”, Jul. 2004, Aspen, Colorado.
- Vice-chair, Gordon Research Conference on Solar Radiation and Climate, Jul. 2005, Waterville, Maine.
- Co-chair, Joint AMS Clouds and Radiation meeting, Jul. 2006, Madison, Wisconsin.
- Chair, Gordon Research Conference on Solar Radiation and Climate, Jul. 2007, New London, New Hampshire.

8.6 Professional meeting session chair

- Session chair, Chapman Conference on “Atmospheric Absorption of Solar Radiation”, Aug. 13-17, 2001, Estes Park, Colorado.
- Session chair, 11th AMS Conference on Atmospheric Radiation, Jun. 2–7, 2002, Ogden, Utah.
- Member, Organizing Committee, IPCC Working Group I Workshop on Climate Sensitivity, Jul. 2004, Paris, France.
- Session chair, International Radiation Symposium 2004, Aug. 23-28, 2004, Busan, South Korea.
- Poster session chair, Fourth Gordon Conference on Radiation and Climate, Jul. 24-29, 2005, Waterville, Maine.
- Session chair, Annual American Association for Aerosol Research (AAAR) Conference, Oct. 17-21, 2005, Austin, Texas.
- Co-convener, AGU Fall meeting Union session, Dec. 5-9, 2005, San Francisco, California.
- Session chair, 12th AMS Conference on Atmospheric Radiation, Jul. 9–14, 2006, Madison, Wisconsin.
- Session chair, NASA Solar Radiation and Climate Experiment (SORCE) Meeting, Sep. 20-22, 2006, Eastsound, Washington.
- Co-convener and session chair, AGU Fall meeting session GC19, SI-Traceable Climate Measurements From Space, Dec. 15-19, 2008, San Francisco, California.
- Session Co-convener, AGU sessions GC12A and GC13A, Coastal and Near-Term Climates in a Changing World, 2010 Fall AGU Meeting, San Francisco, CA. December 13-17, 2010.
- Session chair, 23rd Conference on Climate Variability and Change, 91st American Meteorological Society Annual Meeting, Seattle, WA. January 27, 2011.

8.7 Courses taught

University of California, San Diego (Scripps Institution of Oceanography),

“Introduction to Atmospheric Radiation”, Spring 1994.

University of Colorado (Program in Atmospheric and Oceanic Sciences), ATOC 4710/5710,

“Introduction to Atmospheric Physics”, Spring 2002. .

University of California, Berkeley (Earth and Planetary and Geography), EPS C181 / GEOG C139,

“Atmospheric Physics and Dynamics” (CCN 19123), Fall 2008.

University of California, Berkeley (Earth and Planetary and Geography), EPS C181 / GEOG C139,

“Atmospheric Physics and Dynamics”, Fall 2010.

8.8 Ph.D. committees

- Lansing Madry (Program in Atmospheric and Oceanic Sciences, University of Colorado, Boulder),
sea salt aerosols in global models, 2002 – 2007 [thesis committee].
- Nicole Schlegel (Department of Geography, University of California, Berkeley),
Examination of the century to millennial-scale evolution of the Greenland ice sheet
in response to persistent climatic trends and of the climate feedback due to
iGIS topographic retraction, 2007 – 2011 [thesis committee].
- Alexander Stine (Department of Earth and Planetary Science, University of California, Berkeley),
Climate Change at Annual Timescales, 2007 – 2010 [thesis committee].
- Michael Kiparsky (Energy and Resources Group, University of California, Berkeley),
Risk Analysis for Water Resources Under Climate Change, Population Growth,
and Land Use Change, 2008 – 2010 [thesis committee].
- Abigail Swann, (Department of Earth and Planetary Science, University of California, Berkeley),
Ecoclimate: Variations, Interactions, and Teleconnections, 2008 – 2010 [thesis committee].
- Andrew Rollins, (Department of Chemistry, University of California, Berkeley),
Formation mechanisms and quantification of organic nitrates in atmospheric aerosol,
2010 – 2010 [thesis committee]
- Andy Jones, (Energy and Resources Group, University of California, Berkeley),
Interaction of cropped biofuels and the climate system, 2010 – present [thesis committee]
- Andrew Friedman, (Department of Geography, University of California, Berkeley),
Effects of anthropogenic aerosols on large-scale long-term evolution of ocean temperatures,
2010 – present [thesis committee]
- Zack Subin, (Energy and Resources Group, University of California, Berkeley),
The terrestrial methane cycle, 2010 – present [thesis committee]

8.9 Ph.D. students

- Richard van Hees (University of Utrecht), “Detection of deep convection in the atmosphere using infrared satellite data”, 1995 – 2000 [co-promoter].
- David Fillmore, (Program in Atmospheric and Oceanic Sciences, University of Colorado, Boulder), “Anthropogenic aerosols and the scattering and absorption of solar radiation – Estimates of the climatic impacts through a synthesis of models and satellite observations”, 2000 – 2005 [thesis adviser].
- Daniele Rosa (Department of Earth and Planetary Science, University of California, Berkeley), cloud-radiative interactions and climate, 2008 – present [thesis adviser].
- Lindsey Nolan (Environmental Engineering, University of California, Berkeley), climate-change prediction using perturbed physics, 2008 – present [thesis adviser].
- Kyle Pressel (Environmental Engineering, University of California, Berkeley), cloud-climate feedbacks deduced from satellite observations, 2008 – present [thesis adviser].
- Juli Rubin (Environmental Engineering, University of California, Berkeley), indirect effects of aerosols on cloud albedo and lifetime, starting 2009 [thesis adviser].

8.10 Postdoctoral researchers

- Daniel Feldman (Department of Earth and Planetary Science, University of California, Berkeley), CLARREO (CLimate Absolute Radiance and Refractivity Observatory) Observing System Simulation Experiment, 2008 – 2011.
- Lara Gunn, (Department of Earth and Planetary Science, University of California, Berkeley), The Longwave Radiative Effects of Aerosols from Synthesis of A-train Observations, 2010 – present.
- Wei-Chun Hsieh, (Department of Earth and Planetary Science, University of California, Berkeley), Multiscale Modeling of Atmospheric Processes, 2009 – present.
- Fuyu Li, (Climate Sciences Department, Lawrence Berkeley National Laboratory), Exploring and Quantifying Predictive Skill for Climate and its Extremes, 2010 – present.
- Lisa Murphy, (Climate Sciences Department, Lawrence Berkeley National Laboratory), Improving the Representation of Human-Earth System Interactions, 2010 – present.

8.11 Guest lectures (since 2007)

- “Changes in Climate Extremes: History and Projections for the 21st Century”,
Boalt Law 272.3 (CCN 49711), Climate Change: Law and Policy, Sep. 4, 2007.
- “Global climate change: History and projections for the 21st century”,
Molecular And Cell Biology (MCELLBI) 90, Freshman Seminar, Sep. 25, 2007.
- “The Health Implications of Climate Change”, Public Health 298.38 (CCN 76642),
Global Environmental Change for Health Scientists, Feb. 22, 2008.
- “Global climate change: History and projections for the 21st century”,
Molecular And Cell Biology (MCELLBI) 15.001 (CCN 57709),
Current Topics in the Biological Sciences, Apr. 8, 2008.
- “Radiative Forcing by Greenhouse Gases and its Representation in Global Models”,
Chemistry 122.001 (CCN 11450), Quantum Mechanics and Spectroscopy, Apr. 7, 2008.
- “Aerosols’ Role in Radiative Transfer”, Chemistry 122.001 (CCN 11450),
Quantum Mechanics and Spectroscopy, Apr. 9, 2008.
- “What is a Climate Model (and what can it do?)”, Environmental Science 10.001 (CCN 30403),
Introduction to Environmental Sciences, Apr. 24, 2008.
- “The Global Greenhouse: Welcome to the Anthropocene”,
Earth and Planetary Science 3.001 (CCN 19003), The Water Planet, May 5, 2008.
- “Climate extremes: the future impacts of strange weather”,
Earth and Planetary Science 3.001 (CCN 19003), The Water Planet, May 7, 2008.
- “Changes in Climate Extremes: History and Projections for the 21st Century”,
Boalt Law 272.3 (CCN 49688), Climate change and the law, Aug. 8, 2008.
- “Radiative processes in climate and climate models”,
Research in Earth Science, EPS 260, 11/10/08.
- “What is a Climate Model? (And what can it do?)”,
Physical Science, L&S 70B, 2/24/09.
- “The global greenhouse: Welcome to the Anthropocene”,
“The Water Planet”, EPS 3, 4/29/09.
- “Climate extremes: the future impacts of strange weather”,
“The Water Planet”, EPS 3, 5/4/09.
- “Radiative processes”.
Geog. 171 (CCN 36601), Jan. 28, 2010.
- “What is a climate model, and what can it do?”
ES (Environmental Sciences) 10 (CCN 30803), Feb. 12, 2010.
- “From climate change to climate action”, invited presenter for the
Dept. of Earth and Planetary Science, Calday, April 17, 2010, UC Berkeley.

- “The global greenhouse: Welcome to the Anthropocene”.
EPS 3 (CCN 19003), April 26, 2010.
- “The Future of the Earths Climate: Frontiers in Forecasting”,
ERG C200 and Public Policy C284, “Energy and Society”, CCN 27425, Nov. 30, 2010.
- “What is a Climate Model? (And what can it do?)”,
Geography 171, “Special Topics in Physical Geography”, CCN 36520, Mar. 3, 2011.
- “The Global Greenhouse: Welcome to the Anthropocene,”
EPS 3, “The Water Planet”, CCN 19003, Apr. 20, 2011.

8.12 Public dissemination of scientific information

- Invited lecturer, NCAR Geophysical Statistics Conference, Jul. 18–24, 1998.
- Invited presentation, Boulder County Clear-Air Consortium, Nov. 14, 2000.
- Invited lecturer, NASA Goddard 2002 Graduate Student Summer Program, Jun. 11, 2002.
- Invited lecturer, NCAR ASP Colloquium on “Climate and Health”, Jul. 21–28, 2004.
- Invited lecturer, Scripps Howard Institute on the Environment, 2005.
- Invited lecturer, NCAR ASP Colloquium on “The Art of Climate Modeling”, Jun. 5 – 16, 2006.
- Invited lecturer, NCAR ASP Colloquium on “Climate and Health”, Jul. 17, 2006.
- Interview subject, programs on climate change by the Discovery Channel,
CNN and HBO, 2005–2006.
- Lead author, *Scientific American* article on IPCC WG 1 findings, 2007.
- Invited lecture, Our Changing Planet: A Scientific Assessment, Montgomery Bell Academy,
October 30, 2008, Nashville.
- Invited panelist, “Humanity’s Greatest Challenges”, Singularity University, Jul. 9 2009,
NASA Ames, Moffett Field, CA.
- invited lecture, Climate change: Surf’s up in the Arctic, Nano High, Oct 19, 2009,
University of California, Berkeley.
- Invited participant, Climategate panel discussion, Climate and Energy Policy Institute,
Haas School of Business, UC Berkeley, Jan. 26, 2010.
- Invited panelist, “Berkeley Lab Goes Hollywood”. Science at the Theatre,
Feb. 3, 2010, Berkeley Repertory Theater.

8.13 Internal meeting organizer

Organizer, CCSM Atmospheric Working Group (AMWG) Meeting, April, 2002.
Organizer, CCSM AMWG Meeting, June 2002.
Organizer, Joint AMWG and Climate Variability Working Group Meeting, March, 2003.
Organizer, CCSM AMWG Meeting, June, 2003.
Organizer, CCSM Scientific Steering Committee (SSC) Meeting, November, 2003.
Organizer, CCSM SSC Meeting, April, 2004.
Organizer, CCSM Summer Workshop, July, 2004.
Organizer, CCSM Advisory Board (CAB) Meeting, July, 2004.
Organizer, CCSM SSC Meeting, November, 2004.
Organizer, CCSM CAB Meeting, January, 2005.
Organizer, CCSM SSC Meeting, April, 2005.
Organizer, CCSM Summer Workshop, June, 2005.
Organizer, Joint CCSM SSC and CAB Meeting, June, 2005..
Co-organizer, 2008-09 Berkeley Atmospheric Sciences Center (BASC) Symposium..
Co-organizer, 2008-09 BASC seminar series. .

8.14 Reviewer for:

Atmospheric Chemistry and Physics
Department of Energy
Geophysical Research Letters
Institute for Geophysics and Planetary Physics
Journal of the Atmospheric Sciences
Journal of Climate
Journal of Geophysical Research
National Aeronautics and Space Administration
National Oceanic and Atmospheric Administration
National Science Foundation
Nature
Physical Review Letters
Science

PROFESSIONAL ORGANIZATIONS:**9 Society Memberships**

American Association for the Advancement of Science

American Geophysical Union

American Meteorological Society

American Physical Society

European Geophysical Union

RESEARCH GRANTS:**10 Previous Research Support**

1. Principal investigator, “Improved Estimates of Clear-Sky Longwave Flux and Application to the Tropical Greenhouse Effect”, Earth Science and Applications Division, NASA (NAGW-4777/S10144-X), 1996 – 2000, \$127 K.
2. Principal investigator (with Guang J. Zhang, Scripps Institution of Oceanography), “Investigation of the Warm Pool Heat Budget and Validation of Atmospheric GCMs using TOGA COARE Data”, Atmospheric Sciences Division, NSF (ATM95-25800), 1996 – 1999, \$240 K.
3. Principal investigator, “Validation of the CERES Surface Radiation Budget Using Long-term Observations from the Indian Ocean Experiment (INDOEX)”, Mission to Planet Earth Program Science Division, NASA (S-97889-F), 1997 – 2001, \$265 K.
4. co-Principal investigator (with Philip Rasch, NCAR), “Aerosol Forecasting and Modeling for ACE-Asia”, Climate Dynamics Program, NSF (NSF01 Special Funds), 2001 – 2002, \$190 K.
5. Principal investigator (with Brian Soden, GFDL/Princeton), “Improved Clear-Sky Top-of-Atmosphere Fluxes for Studies of the Greenhouse Effect and Aerosol Radiative Forcing”, Office of Global Programs, NOAA (NA96GP0444), 1999 – 2003, \$317 K.
6. Principal Investigator (with Francisco Valero, Scripps Institution of Oceanography), “Development of Radiative Modeling Capabilities for the Triana Satellite Program”, Scripps Institution of Oceanography and Earth Science Enterprise, NASA (10189379), 2002 – 2004, \$366 K.

7. Principal investigator, “Global Aerosol Modeling for Climate Studies Using Assimilation of EOS Satellite Observations”, Atmospheric Chemistry Modeling and Analysis Project, Office of Earth Science, NASA (W-19942), 2001 – 2005, \$444 K.
8. co-Investigator (with Andrew Vogelmann, Scripps Institution of Oceanography), “Parameterization of Cloud Water Variability from EOS Observations and its Impact on GCM Climate Simulations”, Office of Earth Science, NASA (GWEC-0000-0086), 2001 – 2004, unfunded collaboration.
9. co-Investigator (with Martin Mlynchzak, NASA Langley Research Center), “Far Infrared Spectroscopy of the Troposphere (FIRST)”, Instrument Incubator Program, Office of Earth Science, NASA, 2001 – 2004, unfunded collaboration.
10. Principal investigator, “Engineering the Community Climate System Model for Improved Portability”, NSF (ATM-0404790 under Cooperative Agreement number ATM-0301213), 2003 – 2006, \$281.9 K.
11. co-Investigator (with Bruce Wielicki, NASA Langley Research Center), “CERES (Clouds and the Earth’s Radiative Energy System) Climate Data Records: Development, Maintenance, and Validation”, Office of Earth Science, NASA (NNL04AA54I), 2004 – 2006, \$230 K.
12. co-Investigator (with Bob Malone, LANL; and John Drake, ORNL), “Collaborative Design and Development of the CCSM for Terascale Computers”, DOE Scientific Discovery through Advanced Computing (SciDAC) program (DE-FG03-02ER63387), 2002 – 2007, \$2.412 M.
13. co-Investigator (with Cecelia Deluca, NCAR), “Common Modeling Infrastructure in Support of U.S. Climate Change Science”, NASA Earth Science Enterprise (NNG06GB74G), 2005 – 2008, \$405 K.
14. Institutional co-principal investigator (with lead PIs John Drake, ORNL; and Phil Jones, LLNL), “A Scalable and Extensible Earth System Model for Climate Change Research”, DOE Scientific Discovery through Advanced Computing (SciDAC) program, 2006 – 2008, \$4.085 M.
15. co-Investigator (with Scott Doney, WHOI), “Ocean Biological Feedbacks on Global Coupled Climate-Carbon Cycle Dynamics”, NASA Interdisciplinary Science program, 2007 – 2007, \$370.3 K.
16. Principal investigator, “Detection and Attribution of Spectral TOA Forcings and Feedbacks: a CLARREO Observing System Simulation Experiment”, NASA (NNX08AT80G), 2008 – 2009, \$136,492.
17. co-Investigator (with Ricky Rood, University of Michigan), “Process-Based and Object-Based Investigation of Bias in the Simulations of the Physical Climate”, NASA Earth System Science Research using Data and Products from the Terra, Aqua, and ACRIM-SAT Satellites (UM-03000913901), 11/1/2007 – 6/30/2011, \$57,237.

18. Laboratory principal investigator (with David Bader, ORNL; Philip Jones, LANL; and Kenneth Sperber, LLNL), Exploring and Quantifying Predictive Skill for Climate and Its Extremes on Decadal and Regional Scales, DOE BER, 6/1/2009 – 9/30/2009, \$318,500.

11 Current External Research Support

1. co-Investigator (with David Randall, Colorado State University), “Center for Multiscale Modeling of Atmospheric Processes”, NSF via sub-contract with Colorado State University (CSU-G-3045-16), 2007 – 2011, \$308,000.
2. co-Investigator (with Kuan-man Xu, NASA Langley Research Center), “Aerosol Indirect Effect: Unscrambling Dynamics and Aerosol Effect”, NASA Interdisciplinary Science program (NNX07AU78G), 7/1/2007 – 6/30/2011, \$195,000.
3. Principal investigator (with Irina Sokolik, Georgia Tech), “The Longwave Radiative Effects of Aerosols from Synthesis of A-train Observations”, NASA Atmospheric Chemistry, Modeling, and Analysis Program (NNX08AK56G), 1/1/2008 – 12/31/2011, \$359,819.
4. Laboratory principal investigator (with Rich Loft, NCAR), “Collaborative Research: PetaApps: New Coupling Strategies and Capabilities for Petascale Climate Modeling”, NSF (OCI0749190), 3/1/2008 – 2/28/2011, \$391,130.
5. Principal investigator, (William Riley, LBNL; Margaret Torn, LBNL; Matt Reagan, LBNL; Philip Jones, LANL; William Lipscomb, LANL; Philip Cameron-Smith, LLNL; Robert Jacob, ANL; and Ruby Leung, PNNL), “Investigation of the Magnitudes and Probabilities of Abrupt Climate TransitionS (IMPACTS)”, DOE, 7/1/2008 – 6/30/2013, \$3,661,000.
6. Laboratory principal investigator (with Jae Edmonds, PNNL and David Bader, ORNL), “Improving the Representations of Human-Earth System Interactions”, DOE BER, 6/1/2009 – 9/30/2013, \$3,275,056.
7. Laboratory co-principal investigator (with Philip Jones, LANL; Philip Rasch, PNNL; Steve Klein, LLNL; and Surabi Menon, LBNL), “Improving the Characterization of Clouds, Aerosols, and Cryosphere in Climate Models”, DOE BER, 6/1/2009 – 5/1/2014, \$1,660,411.
8. Laboratory co-principal investigator (with Esmond Ng, LBNL), “High Performance Adaptive Algorithms for Ice Sheet Modeling”, DOE ASCR, 9/1/2009 – 8/31/2013, \$1,920,000.
9. Laboratory principal investigator (with David Bader, ORNL; Philip Jones, LANL; and Kenneth Sperber, LLNL), “Ultra High Resolution Global Climate Simulation to Explore and Quantify Predictive Skill for Climate Means, Variability and Extremes”, DOE BER, 12/1/2009 – 11/30/2014, \$2,949,324.
10. Laboratory principal investigator (with Ruby Leung, PNNL), “Development of Frameworks for Robust Regional Climate Modeling”, DOE BER, 7/1/2010 – 6/30/2013, \$1,650,000.

11. Laboratory co-principal investigator (with Wes Bethel, LBNL), “Visual Data Exploration and Analysis of Ultra-large Climate”, DOE BER, 7/1/2010 – 6/30/2013, \$2,149,741.
12. Laboratory co-principal investigator (with William Riley, LBNL), “Quantification and reduction of critical uncertainties associated with carbon”, 7/1/2010 – 6/30/2013, \$1,200,000.
13. Laboratory principal investigator (with John Weyant, Stanford University), “Integrated Assessment Model Development, Intercomparison and Diagnostics”, DOE BER, 7/1/2010 – 6/30/2013, \$375,000.
14. Principal investigator, “Shortwave and Pan-Spectral Observing System Simulation Experiments in Support of the CLARREO Science Definition Team”, NASA, 3/1/2011 – 3/1/2012, \$225,301.
15. Laboratory principal investigator (with David Bader, LLNL), “Climate Energy for a Sustainable Energy Future (CSSEF)”, DOE BER, 6/30/2011 – 10/1/2011, \$625,000.