Dr. Mohan Ramamurthy
Curriculum Vitae

Contact Information:

Work:

Unidata, University Corporation for Atmospheric Research
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Profile:

- Proven leadership and business acumen in program management, including strategic management of financial, human, science, and technology resources for more than seventeen years;
- Demonstrated skills in fund raising, communication, project management, community building, stakeholder engagement, advocacy, and complex and sensitive negotiations;
- 30+ years of experience as a researcher, educator, and information technology pioneer;
- Keen understanding of the needs of universities and atmospheric sciences community;
- In-depth knowledge of business and administrative processes;

Education:

B.S., Physics	1977	University of Pune, Pune, India
M.S., Physics	1980	University of Pune, Pune, India
Ph.D., Meteorology	1986	University of Oklahoma, Norman, OK

Honors: Fellow, American Meteorological Society

Citizenship: U. S. Citizen

Professional Development: 2007 UCAR Executive Leadership Program

Professional Experience:

Director, Earth Observations and Data Service Center, 2021-present
Director, Unidata, University Corporation for Atmospheric Research, January 2003-present
Director, EarthCube Science Support Office, 2016-2019
Associate Professor, Department of Atmospheric Sciences, University of Illinois, 1994 – 2003
Assistant Professor, Department of Atmospheric Sciences, University of Illinois, 1989 - 1994
Visiting Assistant Professor, Department of Atmospheric Sciences, University of Illinois, 1987 - 1989
Post-Doctoral Research Assistant, Florida State University, 1986 – 1987
Graduate Research Assistant, University of Oklahoma, 1980-1986
Meteorological Observer, India Meteorological Department, Pune, India, 1976-1980

Duties and Responsibilities in the Current Position:

I. Program Management and Strategic Direction

a. Raised nearly $100M in grants funding through various proposal and business development efforts.
b. Direct the Unidata Program Center (UPC), including setting the vision, goals and priorities for the program and developing strategies and plans for its advancement.
c. Manage administrative, financial, and human resources of the program.
d. Ensure overall productivity, creativity, and excellence of the program, including the formulation and execution of both long and short-range plans.
e. Develop strategic and implementation plans, position/white papers, and budgets, including successful proposals for funding the UPC and community activities.
f. Manage—directly or by delegation—all UPC activities, meeting obligations to sponsors, governing committees, collaborators, community, and other stakeholders.
g. Lead the Unidata Program—nationally and internationally—to be of increasing value to the current community, stakeholders, and potential users.
h. Provide oversight for governing committees and leverage the collective expertise of committee members to fulfill Unidata mission.
i. Align the UPC with the current and future needs of the community
j. Enhance the quality of the program through superior management and direction of technical and administrative staff, balancing research, development and support.
k. Engage staff so as to maximize the collective strengths and creativities they apply toward Unidata goals and objectives.
l. Employ advances in information technology, including hardware, software engineering and cyberinfrastructure, to keep Unidata systems current and effective.
m. Assess the effectiveness of the program and transformative impacts on the community on a regular basis, and make programmatic adjustments as needed.

II. Community, Stakeholder, and Sponsor Relations

a. Maintain the pulse of the community, establishing effective relations and communications with the university community and other stakeholders.
b. Help universities to be aware of and benefit from Unidata services.
c. Engage the community as active stakeholders in the Unidata Program.
d. Establish and foster strategic partnerships and alliances, and create a culture of collaboration among all stakeholders, and build coalitions to advance common goals.
e. Cultivate and build relationships with sponsors, communicating the value and importance of their investment in Unidata and the benefits to their communities.

III. Corporate Citizenship

a. Represent Unidata to UCAR management, Trustees, PACUR, and Members. Serve on UCP management team and help UCAR build and maintain its stature.

b. Serve on UCAR Management Committee, UCP Senior Management, UCAR/UCP/NCAR committees (e.g., NCAR Diversity Committee, SOARS Steering Committee, EOL Advisory Committee, and COMET Advisory Panel), various search committees, and working groups as needed.

c. Foster effective relations with other UCP programs and NCAR laboratories and divisions, and where appropriate, establish partnerships for mutual benefit.

d. Assist and provide advice to the UCP Director as needed.

e. Participate in UCAR activities and initiatives where Unidata can play a contributing or leading role.

IV. Professional and Scientific Responsibilities

a. Provide leadership and demonstrate commitment to the profession through appropriate activities and meet professional obligations.

b. Engage in professional activities such as participating in professional society activities like the AMS and the AGU and serving on AMS and AGU boards and committees, reviewing manuscripts and proposals for journals and agencies, serving on panels (e.g., NSF, NRC, Universities), serving on program committees of conferences and meetings, participating in governance of academic programs and professional societies, and participating in program reviews and accreditation processes.

c. Engage in formal research, maintaining a level of scholarship.

d. Participate in professional development activities such as the Executive Leadership Program and similar programs, as well as other workshops and conferences or other appropriate activities to maintain currency and depth of knowledge in the atmospheric, computational, and information sciences.

e. Publish papers in atmospheric, computational and information sciences.

f. Promote open and reproducible science

Key Accomplishments as Unidata Director:

a. Provided leadership and direction to maintain a vibrant and nimble organization that continues to innovate, provide excellent service, and be viewed as a model facility. According to an NSF COV report, "Praise for Unidata was that it was extremely forward-looking and had superbly qualified PIs." The review panel for the most recent Unidata proposal noted the following: "Unidata has made a remarkable contribution to atmospheric science and the related geosciences so much so that it is now difficult to imagine the community without Unidata. […] Unidata has both anticipated, and reacted to, new challenges and needs in an effective and impressive manner. Unidata has also proven to be very resilient, responding quickly to new challenges and dealing well with change, including changes in key personnel. Unidata has nicely balanced the community's demand for the continuation of legacy software versus that for new, innovative applications software."

b. Developed four strategic plans and converted them to four successful 5-year proposals to secure core funding for the program.

c. Broadened the user base and engaged users in disciplines beyond the atmospheric sciences, including in national and international organizations. As a result, the Unidata community

now includes over 1500 academic institutions and 7000 organizations in more than 200 countries, representing all geoscience disciplines and all four sectors (academia, government agencies, the private sector, and non-governmental organizations) of the geoscience enterprise.

d. Created a culture within Unidata to empower and encourage most staff to write and lead proposals, serving as PIs of those proposals.

e. Cultivated strong partnerships, fostered close collaborations, and built coalitions with organizations, agencies, and universities.

f. Nurtured a strong sense of community and ownership in Unidata, resulting in a 97% satisfaction rating in a recent survey.

g. Significantly increased both data volumes, types, and number of participants in the data distribution system, making Unidata one of the largest users of Internet II.

h. Achieved significant advances in data distribution and data access software that resulted in its adoption as an important operational infrastructure in the federal government and by dozens of organizations and weather services worldwide.

i. Developed and released the Integrated Data Viewer, a highly sophisticated, platform-independent analysis and visualization application and framework that is now used by nearly 500 institutions worldwide and many projects.

j. Partnered with the National Weather Service to transition GEMPAK users to AWIPS II, the new system developed by the NWS.

k. Facilitated data exchange with the GIS community, resulting in the adoption of netCDF by ESRI as a data format, and by OGC as a standard.

l. Managed the solicitation and award process that has funded over 100 universities for equipment purchases to enhance their participation in Unidata.

m. Organized training and community workshops at the UPC and at other institutions to discuss issues of importance.

n. Advanced netCDF in ways to result in its adoption as a data format standard by IPCC for 5-year climate assessment reports.

o. Developed a comprehensive support system that provides support to over 5000 inquiries each year.

p. Diversified governing committee representation by adding hydrology, oceanography, air-quality, GIS, GPS, and climate scientists.

q. Instituted a comprehensive metrics gathering system to document progress in all areas of program execution. An independent Metrics Assessment study of the Unidata Program, concluded that "Unidata was a model program and an irreplaceable national facility, and that its establishment was among UCAR's most important accomplishments."

r. Increased the gender diversity of Unidata software engineering staff from one to four.

s. Brought the EarthCube Science Office to UCAR and directed it from 2016 to 2019.

Professional Activities:

Member, Unidata Users Committee, 1989-1991
Chair, Unidata Users Committee, 1991-1998
Member, AMS Committee on Weather Analysis and Forecasting, 1992-1995

Member, AMS Committee on Intelligent Transportation Systems, 1994-1998
Member, PAGE Executive Board Member, 1997-2000
Member, Unidata Policy Committee, 1999-2002
Member, AMS Board of Higher Education, 2000-2004
Chair, DLESE Services Committee, 2000-2003
Associate Editor, Monthly Weather Review, 2001-2002
Member, UCAR University Relations Committee, 2001-2003
Chair, AMS Board of Higher Education, 2002-2003
Member, JESSE Editorial Board, 2001-2003
Member, NSF ATM Steering Committee for Cyberinfrastructure for Research and Education, 2002-2004
Vice-chair, ESIP Federation Products and Services Committee, 2004-2007
Member, THORPEX Data Policy and Management Working Group, 2005-2009
Member, NACP Data System Task Force, 2005-present
Member, NRC Committee on Archiving Environmental and Geospatial Data at NOAA, 2006-2008
Member, AGU ESSI Executive Committee, 2008-2011
Chair, AMS Ad-hoc Committee on Data Stewardship, 2008-2011
Chair, AMS Board on Data Stewardship, 2009-2019
Member, AGU ESSI Executive Committee, 2008-2011
Member, ESIP Federation Constitution and Bylaws Committee, 2011-2012
Member, UCAR Management Committee, 2003-present
Member, COMET Advisory Panel, 2003-2017
Member, UCAR Information Technology Council, 2004-2016
Member, NCAR Earth Observing Laboratory External Advisory Committee, 2005-present
Member, SOARS Steering Committee, 2010-2013
Chair, Council of Data Facilities, 2015-2016
Member, NOAA Environmental Information Services Working Group, 2017-present

Peer-reviewed Publications:

1. Ramamurthy, M. K., and F. H. Carr, 1987: Four-dimensional data assimilation in the monsoon region. Part I. Experiments with wind data. *Mon. Wea. Rev.,* **115**, 1678–1706.
2. Ramamurthy, M. K., 1987: Vectorization of an atmospheric prediction model: Cyber-205 vs. Cray-1/Cray X-MP. *Supercomputer,* **20/21**, 66–75.
3. Ramamurthy, M. K., 1987: Performance improvement beyond vectorization on the Cyber-205. *Supercomputer,* **22**, 41–51.
4. Duke, D. W., J. C. McCalpin, M. Ramamurthy, and D. Sandee, 1987: Initial benchmark results from the ETA[10] supercomputer. *i/o An ETA Systems Publication*, **4**, 12–16.
5. Ramamurthy, M. K., and F. H. Carr, 1988: Four-dimensional assimilation in the monsoon region. Part II: Role of temperature and moisture data. *Mon. Wea. Rev.,* **116**, 1896–1913.
6. Navon, I. M., P. K. H. Phua, and M. K. Ramamurthy, 1988: Vectorization of conjugate-gradient methods for large-scale minimization. *Proceedings of the Supercomputing Conference*, Orlando, FL, Nov. 14–18, 1988. The Computer Society of the IEEE, 410–418.
7. Navon, I. M., P. K. H. Phua, and M. K. Ramamurthy, 1990: Vectorization of conjugate-gradient methods for large-scale minimization in meteorology. *J. Optimization Theory and Applications,* **66**, 71–93.
8. Ramamurthy, M. K., B. P. Collins, R. M. Rauber, and P. C. Kennedy, 1990: Evidence of very-large-amplitude solitary waves in the atmosphere. *Nature*, **348**, (22 Nov.), 314–317.

9. Shields, M. T., R. M. Rauber and M. K. Ramamurthy, 1991: Dynamical forcing and mesoscale organization of precipitation bands in a Midwest winter cyclonic storm. *Mon. Wea. Rev.*, **119**, 936–964.
10. Ramamurthy, M. K., R. M. Rauber, B. P. Collins, M. T. Shields, P. C. Kennedy, and W. L. Clark, 1991: UNIWIPP: A University of Illinois field experiment to investigate the structure of mesoscale precipitation in winter storms. *Bull. Amer. Meteor. Soc.*, **72**, 764–776.
11. Ramamurthy, M. K., 1991: Meeting Review: Session 5. Banded precipitation features in fronts and cyclones: I; The Fourth AMS Conference on Mesoscale Processes; 25–29 June 1990; Boulder, Colorado; D. Keyser, Ed. *Bull. Amer. Meteor. Soc.*, **72**, 212–227.
12. Martner, B. E., R. M. Rauber, R. M. Rasmussen, E. T. Prater, and M. K. Ramamurthy, 1992: Impacts of a Destructive and Well-Observed Cross-Country Winter Storm. *Bull. Amer. Meteor. Soc.*, **73**, 169–172.
13. Ramamurthy, M. K., and I. M. Navon, 1992: The conjugate-gradient variational analysis and initialization method: An application to MONEX SOP-2 Data. *Mon. Wea. Rev.*, **120**, 2360–2377.
14. Ramamurthy, M. K., K. P. Bowman, B. F. Jewett, J. G. Kemp, and C. Kline, 1992: A Networked Desktop Synoptic Laboratory. *Bull. Amer. Meteor. Soc.*, **73**, Cover and 944–950.
15. Ramamurthy, M. K., 1992: Meeting Review: Session 15A. Data Assimilation Experiments; The Ninth AMS Conference on Numerical Weather Prediction; 14–18 October 1991; Denver, Colorado; Y.-H. Kuo, Ed. *Bull. Amer. Meteor. Soc.*, **73**, 1009–1038.
16. Wash, C. H., R. L. DeSouza, M. Ramamurthy, A. Andersen, G. Byrd, J. Justus, H. Edmon and P. Samson, 1992: Teaching with interactive computer systems: A report on the Unidata/ COMET/STORM Workshop on Synoptic/Mesoscale Instruction. *Bull. Amer. Meteor. Soc.*, **73**, 1440–1447.
17. Wash, C. H., R. L. DeSouza, M. Ramamurthy, A. Andersen, G. Byrd, J. Justus, H. Edmon and P. Samson, 1992: Synoptic and Mesoscale Meteorology Instruction Workshop: Notes from an NCAR Summer Instructional Workshop. National Center for Atmospheric Research, Boulder, Colorado.
18. Ramamurthy, M. K., R. M. Rauber, B. P. Collins and N. K. Malhotra, 1993: A comparative study of large amplitude gravity wave events. *Mon. Wea. Rev.*, **121**, 2951–2974.
19. Ramamurthy, M. K., and T.-Y. Xu, 1993: Continuous data assimilation experiments with the NMC Eta Model: A GALE IOP-1 Case Study. *Mon. Wea. Rev.*, **121**, 3082–3105.
20. Ramamurthy, M. K., and J. Kemp, 1993: Using The Weather Machine: A Gopher server at the University of Illinois brings weather information to every desktop. *STORM*, **1**(3), 34–39.
21. Carr, F. H., M. K. Ramamurthy, D. J. Rusk and G.-P. Lou, 1993: Observing systems experiments: Relative model response to various FGGE datasets in the tropics. *Mon. Wea. Rev.*, **121**, 3106–3122.
22. Ramamurthy, M. K., 1993: Meeting Review: Session 5. Satellite applications to analysis and forecasting. The Thirteenth AMS Conference on Weather Analysis and Forecasting; 2–6 August 1993; Vienna, Virginia.
23. Rauber, R. M., M. K. Ramamurthy, and A. Tokay, 1994: Synoptic and mesoscale structure of a severe freezing rain: The St. Valentine's Day ice storm. *Wea. Forecasting,* **9**, 183–204.
24. Ramamurthy, M. K., and T.-Y. Xu, 1994: Structure and evolution of a tropopause fold during GALE IOP-1: An Eta model study. *Meteorology and Atmospheric Physics*, **53**, 161–183.
25. Ramamurthy, M. K., (with 9 other authors), 1995: Teaching mesoscale meteorology in the age of the modernized National Weather Service: A report on the Unidata/COMET Workshop. *Bull. Amer. Meteor. Soc.,* **76**, 2463–2473.
26. Ramamurthy, M. K., 1995: The Tenth Conference on Numerical Weather Prediction. *Bull. Amer. Meteor. Soc.,* **76**, 2211–2233.

27. Kristovich, D. A. R., ..., R. M. Rauber, M. K. Ramamurthy, B. F. Jewett, K. Beard, ..., H. T. Ochs III, ... (22 authors), 2000: The Lake-Induced Convection Experiment and the Snowband Dynamics Project. *Bull. Amer. Meteor. Soc.,* **81**, 519–542.
28. Rauber, R. M., L. S. Olthoff, M. K. Ramamurthy, 2000: The relative importance of warm rain and ice processes in freezing precipitation events. *J. Appl. Meteor.*, **39**, 1185-1195.
29. Rauber, R. M., M. Yang, and M. K. Ramamurthy, 2000: Origin, maintenance, and fine-scale structure of the St. Valentine's Day mesoscale gravity wave observed during STORM-FEST. Part I: Origin and maintenance, *Mon. Wea. Rev.,* **129**, 198-217
30. Yang, M., R. M. Rauber, and M. K. Ramamurthy, 2000: Origin, maintenance, and fine-scale structure of the St. Valentine's Day mesoscale gravity wave observed during STORM-FEST. Part II: Fine-scale structure, *Mon. Wea. Rev.,* **129**, 218-236.
31. Rauber, R. M., L. S. Olthoff, M. K. Ramamurthy, 2000: Further Investigation of a physically based, non-dimensional parameter for discriminating between locations of freezing rain and ice pellets. *Wea. Forecasting,* **16**, 185-191.
32. Phoebus, D. R. Smith, P. J. Croft, H. A. Friedman, M. C. Hays, K. A. Murphy, M. K. Ramamurthy, B. Watkins, and J. W. Zeitler: Ninth AMS Symposium on Education (Meeting Summary). *Bull. Amer. Meteor. Soc.,* **82**, 295-303.
33. Rauber, R. M., L. S. Olthoff, M. K. Ramamurthy, 2001: A synoptic weather pattern and sounding-based climatology of freezing precipitation in the United States east of the Rocky Mountains. *J. Appl. Meteor.*, **40**, 1724-1747.
34. D. R. Smith, M. C. Hays, M. K. Ramamurthy, J. W. Zeitler, K. A. Murphy, P. J. Croft, J. M. Nese, H. A. Freidman, H. W. Robinson, C. D. Thormeyer, P. A. Ruscher, and R. E. Pandya, 2001: Tenth AMS Symposium on Education. *Bull. Amer. Meteor. Soc.,* **82**, 2817-2823.
35. Jewett, B. J., R. M. Ramamurthy, and R. M. Rauber, 2003: Origin, maintenance and fine scale structure of the St. Valentine's Day gravity wave observed during STORM-FEST. Part III: MM5 modeling study of gravity wave genesis and evolution. *Mon. Wea. Rev..,* **131**, 617-633.
36. Rauber, R. M., and M. K. Ramamurthy, 2003: Clouds and precipitation bands. *Encyclopedia of Meteorology.* Elsevier Science Press, 1243-1250.
37. R. E. Pandya, D. R. Smith, M. K. Ramamurthy, P. J. Croft, M. J. Hayes, K. A. Murphy, J. D. Mcdonnell, R. M. Johnson and H. A. Friedman, 2004: 11TH AMS Education Symposium. Bulletin of the American Meteorological Society: **85**, No. 3, pp. 425–430.
38. Ramamurthy, M. K., 2005: Unidata's Blueprint for 2008. *Bull. Amer. Meteor. Soc.,* **86**, 179–180.
39. Droegemeier, K. K. and 20 authors, 2005: Service-oriented environments for dynamically interacting with mesoscale weather. *Computing in Science and Engineering*, **7**, No. 6, 12-29.
40. Kelleher, K., plus 14 authors, 2005: Project CRAFT: Technical Aspects of a Real-time delivery system for NEXRAD Level II data via the Internet. Submitted to *Bull. Amer. Meteor. Soc.*
41. Grim, J. A., R. M. Rauber, M. K. Ramamurthy, B. J. Jewett and M. Han, 2007: High-resolution observations of the trowal and warm frontal regions of two continental winter cyclones. *Mon. Wea. Rev.,* **135**, 1647-1670.
42. Han, M., R. M. Rauber, M. K. Ramamurthy, B. J. Jewett, and J. Grim, 2007: Mesoscale dynamics of the trowal and warm frontal regions of two continental winter cyclones. *Mon. Wea. Rev.,* **135**, 1629-1646.
43. Ramamurthy, M. K., 2006: A new generation of cyberinfrastructure and data services for Earth system science education and research. *Advances in Geosciences*, **8**, 1-11.
44. Kelleher, K. E., et al., 2007: Project CRAFT: A Real-Time Delivery System for NEXRAD Level II Data Via the Internet, *Bull. Amer. Meteor. Soc.,* **88**, 1045-1057.
45. Plale, B., D. Gannon, J. Brotzge, K. Droegemeier, J. Kurose, D. McLaughlin, R. Wilhelmson, S. Graves, M. Ramamurthy, R.D. Clark, S. Yalda, D.A. Reed, E. Joseph, V. Chandrasekar, 2006: CASA and LEAD: Adaptive Cyberinfrastructure for Real-Time Multiscale Weather Forecasting, *Computer special issue on System-Level Science*, *IEEE Computer*, **39**, No. 11, pp. 56-63.

46. Robinson et al., 2007: Environmental Data Management at NOAA: Archiving, Stewardship, and Access. National Research Council report, National Academies Press.
47. Lamptey, B. L., R. E. Pandya, T. T. Warner, R. Boger, R. T. Bruintjes, P. A. Kucera, A. Laing, M. M. Moncrieff, M. K. Ramamurthy, T. C. Spangler, and M. Weingroff, 2009: The UCAR Africa Initiative, *Bull. Amer. Meteor. Soc.,* **90**, 299-303.
48. Nativi, S., M. Ramamurthy, and A. Woolf, 2009: Towards Earth and Space Science Infrastructures: Network, Computing and Data Services. Guest Editor. **2**, Supplement 1.
49. Etherton, B. J., S. C. Arms, L. D. Oolman, G. M. Lackmann, and M. K. Ramamurthy, 2011: Using Operational and Experimental Observations in Geoscience Education, *Bull. Amer. Meteor. Soc.,* **92**, 477-480.
50. Krajewski, W.F., A. Kruger, J.A. Smith, R. Lawrence, C. Gunyon, R. Goska, B.-C. Seo, P. Domaszczynski, M.L. Baeck, M.K. Ramamurthy, J. Weber, A.A. Bradley, S.A. DelGreco, and M. Steiner, Towards better utilization of NEXRAD data in hydrology: An overview of Hydro-NEXRAD, *Journal of Hydroinformatics*, 13.2, 255-266, 2011.
51. Ramamurthy, M. K., 2012 (Contributing presenter/author):"Front Matter." *The Future of Scientific Knowledge Discovery in Open Networked Environments: Summary of a Workshop.* Washington, DC: The National Academies Press, 2012
52. Lazarus, S. M., and Coauthors, 2013: 2012 Unidata Users Workshop Navigating Earth System Science Data. *Bull. Amer. Meteor. Soc.*, **94**, ES136–ES143.
53. Moore, J.A., M Serreze, D. Middleton, M.K. Ramamurthy, L Yarmey, (2013), The Arctic Cooperative Data and Information System: Data Management Support for the NSF Arctic Research Program, Abstract, IN44A-07 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
54. Ansari. S. and Coauthors, 2018: Unlocking the Potential of NEXRAD Data through NOAA's Big Data Partnership, *Bulletin of the American Meteorological Society*, 189-204
55. Ramamurthy, M., 2016: Data-Driven Atmospheric Sciences Using Cloud-based Cyberinfrastructure Plans, Opportunities, and Challenges for a Real-time Weather Data Facility. Book chapter *Cloud Computing in Ocean and Atmospheric Sciences*, edited by Tiffany C Vance, Nazila Merati, Chaowei Yang, and May Yuan
56. Schuster, D., and Coauthors, 2019: Challenges and Future Directions for Data Management in the Geosciences. *Bulletin of the American Meteorological Society, https://doi.org/10.1175/BAMS-D-18-0319.1*
57. Goebbert, K., and Coauthors, 2018: "Data Driven Scientific Workflows: A Summary of New Technologies and Datasets Explored at the Unidata 2018 Workshop" DOI: 10.1175/BAMS-D-18-0265.
58. Ramamurthy, M., 2020: Unidata Science Gateway for Enabling Science as a Service to Facilitate Open Science and Reproducible Research. IOP Conference Series: Earth and Environmental Science, Volume 509, 11th International Symposium on Digital Earth, Florence, Italy.

Number of conference, workshop, and meeting presentations and papers: Over 400

Theses Supervised:

M.S. degree

Collins, Brian P., "Investigation of a Large Amplitude Gravity Wave in the Midwest United States: A Case Study of the 5 January 1989 Event," – 1990

Malhotra, Naresh, "A comparative study of two large amplitude gravity wave events" – 1992

Chen, Lih-Ho, "Numerical Simulation of a Large Amplitude Gravity Wave" – 1994.

Guo, Qizhou, "The Role of Synoptic and Mesoscale Forcings in the Central and Southern Plains Storm of 5–6 March 1989" – 1994.

Manikin, Geoffrey S., "Short-range Ensemble Forecasting" – 1995

Hall, Steven E., "A Diagnostic Analysis of 'Superstorm 93'," – 1995,

Grzelak, Thomas R., "The Structure and Evolution of a Rocky Mountain Lee Cyclone During STORM-FEST," – 1996

Shu, Jingjun, "Short-Range Ensemble Forecasting with Large-Scale Initial Errors," – 1996

Bramer, Daniel J., "A Study of Short-Range Ensemble Forecasts with Small-Scale Initial Errors," – 1998

Nigg, Noah M., "A Virtual Reality Learning Environment" – May 1999

Grim, Joe (with R. Rauber), Comparative study of the mesoscale structure and dynamics of heavy snowbands in the trowal region of two extratropical cyclones - 2003

Ph.D. degree

Xu, Taiyi, "Four-dimensional Assimilation of Profiler Data" (ABD)

Zhou, Guangming, "Numerical Simulation of a Squall Line Along a Cold Front," (with R. Wilhelmson) – 1996

Yang, MuQun, "Origin, Maintenance and Fine-scale Structure of 14–15 February 1992 Mesoscale Gravity Wave observed During STORM-FEST," — 1999 (co-supervised with Bob Rauber)

Cui, Bo, "Mesoscale Ensemble Prediction of Mid-latitude Cyclones," – 2004

Han, Mei, "Synoptic and Mesoscale Dynamics of Snowbands in Winter Cyclones," – 2004 (co-supervised with Bob Rauber)

Number of Ph. D. Dissertation Committees served on: 21

Courses Taught or Developed (U: Undergraduate; G: Graduate):
1. Introduction to Meteorology (U, General Ed)
2. Severe and Unusual Weather (U, General Ed)
3. Principles of Atmospheric Dynamics (U/G)
4. Weather Analysis and Forecasting (U/G)
5. Synoptic Dynamic Meteorology (G)
6. Mesoscale Meteorology (G)
7. Numerical Weather Prediction (G)
8. Professional Development in Atmospheric Sciences (G)

Honors and Awards

- Arnold O. Beckman Award for a project entitled "Study of Atmospheric Solitary Waves"
- Arnold O. Beckman Award for a project entitled "Mesoscale Data Assimilation and Predictability Studies"
- Excellent Teacher, Weather Analysis and Forecasting Course (1999)
- NCSA Faculty Fellow, 2002-03
- Excellent Teacher, Weather Analysis and Forecasting Course (2002)
- Fellow, American Meteorological Society