

Lian-Ping Wang, Ph.D.

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Department of Mechanical Engineering
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Education

- Ph.D. (1986–1990) in Mechanical Engineering from Washington State University, Pullman, Washington.
Thesis: “On the dispersion of heavy particles by turbulent motion.” Advisor: Professor David E. Stock.
- M.S. Coursework (1984–1986) in Applied Mathematics and Engineering Mechanics from Zhejiang University, Hangzhou, Zhejiang, China.
- B.S. (1980–1984) in Applied Mathematics and Engineering Mechanics from Zhejiang University, Hangzhou, Zhejiang, China.

Professional History

- 2009 – Professor of Mechanical Engineering
College of Engineering, University of Delaware
- 2009 – Associate Director, Delaware Center for Study of Space Radiation Effects,
University of Delaware
- 2008 – Joint Professor of Physical Ocean Science and Engineering
College of Marine and Earth Studies, University of Delaware
- 2003 – Visiting Scientist, National Center for Atmospheric Research
(1-3/2003; 8/2004; 1/2005; 1/2006; 7-8/2006, 12/2006, 1/2007, 7-8/2007,
12/2007-1/2008, 7-8/2008, 1/2009)
- 1/2008 – Affiliated Faculty Member
Center for Critical Zone Research, University of Delaware
- 2007 – Visiting Scientist, Laboratory for Nonlinear Mechanics,
Institute of Mechanics, Chinese Academy of Sciences
(5-6/2007, 5-6/2008)
- 2001 – 2009 Associate Professor of Mechanical Engineering
College of Engineering, University of Delaware

6/2005 to 9/2005	NCAR Faculty Fellow National Center for Atmospheric Research
1994 to 2001	Assistant Professor Mechanical Engineering, University of Delaware
6/2000 to 8/2000	Summer Faculty Researcher, NASA Langley Research Center
7/1998 to 8/1998	Visiting Scientist, Los Alamos National Laboratory
10/1992 to 8/1994	Research Associate Mechanical Engineering and Meteorology, The Pennsylvania State University
9/1990 to 9/1992	Visiting Research Associate Applied Mathematics and Center for Fluid Mechanics, Brown University
8/1986 to 8/1990	Instructor/Teaching Assistant Department of Mechanical and Materials Engineering, Washington State University

Awards and Honors

Invited Speaker and Lecturer for International School and Workshop <i>Dynamics of Inertial Particles: From Ocean and Atmosphere to Planets</i>	Max-Planck-Institut Für Physik Komplexer Systems, Dresden, Germany	2008
Invited Speaker and Participant for Workshop <i>Physics of Climate Change</i>	Kavli Institute for Theoretical Physics UC Santa Barbara	2008
Distinguished Oversea Scholar Award	National Natural Science Foundation of China	2006
NCAR Faculty Fellowship (one of the three inaugural NCAR Fellowships)	National Center for Atmospheric Research	2005
Francis Alison Young Scholars Award (Awarded to one junior faculty per year)	University of Delaware	1998
ASME Travel Award	ASME Fluids Engineering Division	1998
Outstanding Teaching Award	University of Delaware	1996
Teaching Assistantship	Washington State University	1986-90

Publications

Peer-reviewed journal articles (According to the online ISI Citation Databases, publications authored or coauthored by L.-P. Wang received 1,125 citations as of February 2009, with h-index of 18)

1. Volha Lazouskaya, Lian-Ping Wang, Hui Gao, Xiaoyan Shi, Kirk Czymmek, and Yan Jin, 2009, Pore-scale investigation of colloid transport and retention in presence of dynamic air-water interface. *Water Resour. Res.*, under review.

2. Hui Gao, Charmaine Q. Qiu, Dimin Fan, Yan Jin, Lian-Ping Wang, 2009 Three-dimensional microscale flow simulation and colloid transport modeling in saturated soil porous media, *Computers & Mathematics with Applications*, accepted.
3. G.X. Shi, H. Gao, V.I. Lazouskaya, Q. Kang, Y. Jin, L.-P. Wang, 2009 Viscous flow and colloid transport near air-water interface in a microchannel, *Computers & Mathematics with Applications*, accepted.
4. L.-P. Wang and B. Rosa, 2009. A peculiar evolution of turbulence originated from round-off error in pseudo-spectral simulation. *Computers & Fluids*. Under review.
5. W.C. Hsieh, H. Jonsson, L.-P. Wang, G. Buzorius, R.C. Flagan, J.H. Seinfeld, and A. Nenes, 2009, On the representation of droplet coalescence and autoconversion: Evaluation using ambient cloud droplet size distributions. *Journal of Geophysical Research*, in press.
6. L.-P. Wang and W. W. Grabowski, The role of air turbulence in warm rain initiation. *Atmospheric Science Letters*, 10, 1-8, 2009.
7. W. W. Grabowski and L.-P. Wang, 2009, Diffusional and accretional growth of water drops in a rising adiabatic parcel: Effects of the turbulent collision kernel. *Atmos. Chem. Phys.*, 9, 2335–2353. <http://www.atmos-chem-phys.net/9/2335/2009/acp-9-2335-2009.html>
8. L.-P. Wang, B. Rosa, H. Gao, G.-W. He, and G.-D. Jin, 2009, Turbulent collision of inertial particles: point-particle based, hybrid simulations and beyond. *Int. J. Multiphase Flow* (as an invited paper for a focus issue on *Particle-laden Turbulent Flows*), in press. <http://research.me.udel.edu/~lwang/reprints/IJMF-S-08-00129.fdf>
9. W. W. Grabowski and L.-P. Wang, 2008, Diffusional and accretional growth of water drops in a rising adiabatic parcel: Effects of the turbulent collision kernel. *Atmos. Chem. Phys. Discuss.*, 8, 14717-14763. <http://www.atmos-chem-phys-discuss.net/8/14717/2008/acpd-8-14717-2008.html>
10. W. W. Grabowski and L.-P. Wang, 2008, Interactive comment on “Diffusional and accretional growth of water drops in a rising adiabatic parcel: effects of the turbulent collision kernel”, *Atmos. Chem. Phys. Discuss.*, 8, S9291–S9294, 2008.
11. O. Ayala, B. Rosa, and L.-P. Wang, “Corrigendum on *Effects of Turbulence on the Geometric Collision Rate of Sedimenting Droplets: Part 2. Theory and parameterization*,” *New Journal of Physics*, 10, 099802, 2008.
12. L.-P. Wang, O. Ayala, B. Rosa, and W. W. Grabowski, 2008 “Turbulent Collision Efficiency of Cloud Droplets,” *New Journal of Physics* (Focus Issue on Cloud Physics), 10, 075013, 2008.
13. O. Ayala, B. Rosa, and L.-P. Wang, “Effects of Turbulence on the Geometric Collision Rate of Sedimenting Droplets: Part 2. Theory and parameterization,” *New Journal of Physics* (Focus Issue on Cloud Physics), 10, 075016, 2008.
14. O. Ayala, B. Rosa, L.-P. Wang, and W. W. Grabowski, “Effects of Turbulence on the Geometric Collision Rate of Sedimenting Droplets: Part 1. Results from direct numerical simulation,” *New Journal of Physics* (Focus Issue on Cloud Physics), 10, 075015, 2008.
15. L.-P. Wang and M.H. Du, “Direct simulation of viscous flow in a wavy pipe using the lattice Boltzmann approach.” *International Journal of Engineering System Modelling and Simulation*, 1(1), 20-29, 2008.
16. H. Gao, H. Jie, Y. Jin, L.-P. Wang, “Modeling microscale flow and colloid transport in saturated porous media”, *Int. J. Comp. Fluid Dyn.*, 22 (7): 493-505, 2008.

17. Y. Yang, G.-W. He and L.-P. Wang, "The effects of subgrid scale modeling on Lagrangian statistics in large-eddy simulation. Part I. Fluid element." *Journal of Turbulence*, Vol. 9(8), 1-24, DOI: 10.1080/14685240801905360, 2008.
18. Y. Xue, L.-P. Wang, and W.W. Grabowski, "Growth of cloud droplets by turbulent collision-coalescence." *Journal of the Atmospheric Sciences*, 65(2), 331-356, 2008.
19. L.-P. Wang, Y. Xue, and W.W. Grabowski, 2007 "A bin integral method for solving the kinetic collection equation." *Journal of Computational Physics*, Vol. 226, 59-88, 2007.
20. L.-P. Wang, O. Ayala, and W.W. Grabowski, "Effects of aerodynamic interactions on the motion of heavy particles in a bidisperse suspension," *Journal of Turbulence* Vol. 8.1. 1-28. DOI: 10.1080/14685240701233426, 2007.
21. O. Ayala, L.-P. Wang, and W.W. Grabowski, "A hybrid approach for simulating turbulent collisions of hydrodynamically-interacting particles," *Journal of Computational Physics*, Vol. 225, 51-73, 2007.
22. L.-P. Wang, O. Ayala, Y. Xue, and W.W. Grabowski, Comments on "Droplets to drops by turbulent coagulation," *Journal of the Atmospheric Sciences*, 63(9), 2397 - 2401, 2006.
23. L.-P. Wang and B. Afsharpoya, "Modeling fluid flow in fuel cells using the lattice Boltzmann approach," *Mathematics and Computers in Simulation*, 72: 242-248, 2006.
24. L.-P. Wang, C.N. Franklin, O. Ayala, and W.W. Grabowski, "Probability distributions of angle-of-approach and relative velocity for colliding droplets in a turbulent flow," *Journal of the Atmospheric Sciences*, 63(3): 881-900, 2006.
25. L.-P. Wang, Y. Xue, O. Ayala, and W.W. Grabowski, "Effects of stochastic coalescence and air turbulence on the size distribution of cloud droplets," *Atmospheric Research*, 82: 416-432, 2006. doi:10.1016/j.atmosres.2005.12.011.
26. L.-P. Wang, O. Ayala, and Y. Xue, "Reconciling the cylindrical formulation with the spherical formulation in the kinematic descriptions of collision kernel," *Physics of Fluids*, 17(6), Art. No. 067103, 2005.
27. L.P. Wang, O. Ayala, and W.W. Grabowski, "Improved formulations of the superposition method," *Journal of the Atmospheric Sciences*, 62 (4): 1255-1266, 2005.
28. L.P. Wang, O. Ayala, S.E. Kasprzak, and W.W. Grabowski, "Theoretical formulation of collision rate and collision efficiency of hydrodynamically-interacting cloud droplets in turbulent atmosphere," *Journal of the Atmospheric Sciences*, 62 (7): 2433-2450, 2005.
29. G. He, R. Rubinstein, and L.-P. Wang, "Effects of eddy viscosity on time correlations in large eddy simulation," *Physics of Fluids*, 14 (7): 2186 - 2193, 2002.
30. P. Dmitruk, L.-P. Wang, W.H. Matthaeus, R. Zhang, and D. Seckel, "Scalable parallel FFT for spectral simulations on a Beowulf cluster," *Parallel Computing*, 27: 1921-1936, 2001.
31. J. DeSpirito and L.-P. Wang, "Linear instability of two-way coupled particle-laden jet," *International Journal of Multiphase Flow*, 27: 1179-1198, 2001.
32. Y. Zhou, A.S. Wexler, and L.-P. Wang, "Modeling turbulent collision of bidisperse inertial particles," *Journal of Fluid Mechanics*, 433: 77-104, 2001
33. M. Ulitsky, C. Ghenai, I. Gokalp, L.-P. Wang, and L.R. Collins, "A comparison of a spectral EDQNM model for premixed turbulent flame propagation to DNS and experiments," *Combustion Theory and Modelling*, 4 (3): 241-264, 2000.

34. L.-P. Wang, A.S. Wexler, and Y. Zhou, "Statistical mechanical descriptions of turbulent coagulation of inertial particles," *Journal of Fluid Mechanics*, 415: 117-153, 2000.
35. L.-P. Wang, S. Chen, and J.G. Brasseur, "Examination of hypotheses in Kolmogorov refined turbulence theory through high-resolution simulations. Part 2. Passive Scalar Field," *Journal of Fluid Mechanics*, 400: 163-197, 1999.
36. X.-L. Tong and L.-P. Wang, "Two-way coupled particle-laden mixing layer: Part 1. Linear Instability," *Intl Journal of Multiphase Flow*, 25: 575-598, 1999.
37. L.-P. Wang, A.S. Wexler, and Y. Zhou, "Statistical mechanical descriptions of turbulent coagulation," *Physics of Fluids*, 10: 2647-2651, 1998.
38. Y. Zhou, A. S. Wexler, and L.-P. Wang, "On the collision rate of small particles in isotropic turbulence. Part 2. Finite inertia case," *Physics of Fluids*, 10: 1206-1216, 1998.
39. L.-P. Wang, A. S. Wexler, and Y. Zhou, "On the collision rate of small particles in isotropic turbulence. Part 1. Zero-inertia case," *Physics of Fluids*, 10: 266-276, 1998.
40. Q. Wang, K.D. Squires and L.-P. Wang, "The effect of nonuniform seeding on particle dispersion in two-dimensional mixing layers," *Physics of Fluids*, 10, 1700-1714, 1998.
41. B. Shome, L.-P. Wang, M.H. Santare, A.K. Prasad, and A.Z. Szeri, "Modeling of airflow in the nasopharynx with application to sleep apnea," *ASME Journal of Biomechanical Engineering*, 120: 416-422, 1998.
42. M.R. Maxey, B.K. Patel, E.J. Chang, L.-P. Wang, "Simulation of dispersed turbulent multiphase flow," *Fluid Dynamics Research*, 20: 143-156, 1997.
43. D.O. Martinez, S. Chen, G.D. Doolen, L.-P. Wang, and Y. Zhou, "Energy spectrum in the dissipation range of fluid turbulence," *Journal of Plasma Physics*, 57: 195-201, 1997.
44. S. Herr, L.-P. Wang, and L.R. Collins, "EDQNM model of a passive scalar with a uniform mean gradient," *Physics of Fluids*, 8: 1588-1608, 1996.
45. L.-P. Wang, S. Chen, J.G. Brasseur, and J.C. Wyngaard, "Examination of hypotheses in Kolmogorov refined turbulence theory through high-resolution simulations. Part 1. Velocity field," *Journal of Fluid Mechanics*, 309: 113-156, 1996.
46. M.R. Maxey, E.J. Chang and L.-P. Wang, "Interactions of particles and microbubbles with turbulence," *Experimental Thermal and Fluid Science*, 12: 417-425, 1996.
47. S. Chen, G.D. Doolen, R.H. Kraichnan, L.P. Wang, "Is the Kolmogorov refined similarity relation dynamic or kinematic?" *Physics Review Letters*, 74: 1755-1758, 1995.
48. M.R. Maxey, E.J. Chang, and L.-P. Wang, "Simulation of interactions between microbubbles and turbulent flows," *Applied Mechanics Reviews*, 47 (2), S70-S74, 1994.
49. L.-P. Wang and D.E. Stock, "Numerical simulation of heavy particle dispersion: II. Scale ratio and flow decay considerations," *ASME Journal of Fluids Engineering*, 116 (1): 154-163, 1994.
50. L.-P. Wang and M.R. Maxey, "Settling Velocity and Concentration Distribution of Heavy Particles in a Forced Isotropic and Homogeneous Turbulence," *Journal of Fluid Mechanics*, 256: 27-68, 1993.
51. L.-P. Wang and M.R. Maxey, "The motion of microbubbles in isotropic turbulence," *Applied Scientific Research*, 51, 291-296, 1993.
52. L.-P. Wang and D.E. Stock, "Dispersion of heavy particles by turbulent motion," *Journal of the Atmospheric Sciences*, 50 (13): 1897-1913, 1993.

53. L.-P. Wang, "Dispersion of particles injected non-uniformly in a mixing layer," *Physics of Fluids A*, 4 (8): 1599-1601, 1992.
54. L.-P. Wang, M.R. Maxey, T.D. Burton, and D.E. Stock, "Chaotic dynamics of particle dispersion in fluids," *Physics of Fluids A*, 4 (8): 1789-1804, 1992.
55. L.-P. Wang and D.E. Stock, "Stochastic trajectory models for turbulent diffusion: Monte-Carlo process versus Markov chains," *Atmospheric Environment*, 26 (9): 1599-1607, 1992.
56. L.-P. Wang and D.E. Stock, "Numerical simulation of heavy particle dispersion: I. Time step and nonlinear drag considerations," *ASME Journal of Fluids Engineering*, 114: 100-106, 1992.
57. L.-P. Wang, T.D. Burton, and D.E. Stock, "Quantification of chaotic dynamics for heavy particle dispersion in ABC flow," *Physics of Fluids A*, 3 (5): 1073-1080, 1991.
58. L.-P. Wang, T.D. Burton, and D.E. Stock, "Chaotic dynamics of heavy particle dispersion: Fractal dimension versus dispersion coefficients," *Physics of Fluids A*, 2 (8): 1305-1308, 1990.

Peer-reviewed articles in books

1. L.-P. Wang, B. Afsharpoya, 2006, "Modeling fluid transport in PEM fuel cells using the lattice-Boltzmann approach," *Advances in Fluid Mechanics*, Vol VI (ed. M. Rahman and C.A. Brebbia), pp. 287-296, WIT Press, Southampton, UK.
2. L.-S. Luo, D. Qi, and L.-P. Wang, 2002, "Applications of the lattice Boltzmann method to complex and turbulent flows." *Lecture Notes in Computational Science and Engineering*, (edited by M. Breuer, F. Durst, and C. Zenger), Vol 21, pp. 123-130.
3. X.-L. Tong and L.-P. Wang, 1997, "Direct simulations of 3D particle-laden mixing layers." In *Advances in DNS/LES* (ed. Chaoqun Liu and Zhining Liu). Greyden Press: pp615-622.
4. Wang, L.-P. and M.R. Maxey, 1993, "Kinematical descriptions for mixing in stratified or homogeneous shear flows," in *Mixing in Geophysical Flows - Effects of Body Forces in Turbulent Flows* (Ed. J.M. Redondo and O. Metais), Kluwer, Dordrecht.

Peer-reviewed conference papers

1. V. Neacsu, L.-P. Wang, and S. G. Advani, 2009, Lattice Boltzmann method and saturation of fiber tows. SAMPE '09 (Society for the Advancement of Material and Process Engineering) conference, Baltimore, USA, 18-21 May, 2009.
2. H. Gao, D. Fan, Y. Jin, and L.-P. Wang, Three-dimensional microscale flow simulation and colloid transport modeling in saturated soil porous media. *The Fifth International Conference for Mesoscopic methods in Engineering and Science*. Amsterdam, The Netherlands, June 16-20, 2008.
3. G.X. Shi, V. I. Lazouskaya, Q. Kang, Y. Jin, and L.-P. Wang, Viscous flow and colloid retention near air-water interface in a microchannel, *The Fifth International Conference for Mesoscopic methods in Engineering and Science*. Amsterdam, The Netherlands, June 16-20, 2008.
4. L.-P. Wang, B. Rosa, and W. W. Grabowski, "Turbulent collision-coalescence of cloud droplets and its impact on warm rain initiation." *CDROM Proceedings of 15th International Conference on Clouds and Precipitation*, Paper 1.9, Cancun, Mexico, 7-11 July, 2008.
5. L.-P. Wang, B. Rosa, H. Gao, and W. W. Grabowski, "Recent advances in modeling hydrodynamic interaction and collision efficiency of cloud droplets." *CDROM Proceedings of 15th International Conference on Clouds and Precipitation*, Paper P1.20, Cancun, Mexico, 7-11 July, 2008.

6. H. Gao and L.-P. Wang, Towards a fully resolved simulation method for turbulent collision of cloud droplets. *CDROM proceedings of the 6th International Conference on Multiphase Flow*, Leipzig, Germany, July 9-13, 2007.
7. B. Rosa, L.-P. Wang, and W.W. Grabowski, Modeling short-range interactions in numerical simulation of turbulent particle collision. *CDROM proceedings of the 6th International Conference on Multiphase Flow*, Leipzig, Germany, July 9-13, 2007.
8. H. Gao, J. Han, Y. Jin, V.I. Lazouskaya, and L.-P. Wang, Microscale flow modeling and colloid transport in soil porous media. *The Fourth International Conference for Mesoscopic methods in Engineering and Science*. Munich, Germany, July 16-20, 2007.
9. O. Ayala, W.W. Grabowski, B. Rosa, and L.-P. Wang, "A hybrid computational approach for turbulent collision-coalescence of cloud droplets," AMS 12th Conference on Cloud Physics, Madison, WI, July 10-14, 2006.
10. Y. Xue, L.-P. Wang, and W.W. Grabowski, "Growth of cloud droplets by turbulent collision-coalescence," AMS 12th Conference on Cloud Physics, Madison, WI, July 10-14, 2006.
11. L.-P. Wang, "Modeling fluid flow and species transport in fuel cells using the lattice-Boltzmann approach," *The 14th International Conference on Discrete Simulation of Fluid Dynamics in Complex Systems*, Kyoto, Japan, August 22-26, 2005.
12. L.-P. Wang, O. Ayala, W. W. Grabowski, "Effect of turbulence on collision efficiency of cloud droplets." *Proceedings of 14th International Conference on Clouds and Precipitation*, pp. 686-689, Bologna, Italy, 19-23 July, 2004.
13. L.-P. Wang, Y. Xue, O. Ayala, W. W. Grabowski, "Effects of stochastic coalescence and air turbulence on the size distribution of cloud droplets." *Proceedings of 14th International Conference on Clouds and Precipitation*, pp 690-693, Bologna, Italy, 19-23 July, 2004.
14. L.-P. Wang, Orlando Ayala, Wojciech W. Grabowski, "Effect of turbulence on collision efficiency of cloud droplets." *CDROM proceedings of the 5th International Conference on Multiphase Flow*, paper 311, Yokohama, Japan, May 30 to June 4, 2004.
15. L.-P. Wang, Y. Xue, O. Ayala, W. W. Grabowski, "Effects of stochastic coalescence and air turbulence on the size distribution of cloud droplets." *CDROM proceedings of the 5th International Conference on Multiphase Flow*, paper 312, Yokohama, Japan, May 30 to June 4, 2004.
16. L.-P. Wang and J. DeSpirito, "Evolution of two-way coupled particle-laden mixing layer and jet." *CD-ROM Proceedings of the 4th International Conference on Multiphase Flow*, New Orleans, Louisiana, May 27 - June 1, 2001.
17. J. DeSpirito and L.-P. Wang, "Evolution of two-way coupled particle-laden mixing layer and jet." *CD-ROM Proceedings of the 2nd International Symposium on Turbulence and Shear Flow Phenomena*, KTH, Stockholm, Sweden, June 27-29, 2001.
18. J. DeSpirito, and L.-P. Wang, "Nonlinear evolution of two-way coupled particle-laden jet," *Proceedings of the 39th AIAA Aerospace Sciences Meeting*, Reno, NV, January 8-11, 2001.
19. X.-L. Tong and L.-P. Wang, "Two-way coupled particle-laden mixing layer. Part 1. Linear Instability." *CD-ROM publication, ASME Fluids Engineering Summer Meeting*, paper FEDSM 98-5032, Washington D.C., June 21-25, 1998.
20. L.-P. Wang, X.-L. Tong, and J. DeSpirito, "Two-way coupled particle-laden mixing layer. Part 2. Nonlinear evolution." *CD-ROM publication, Third International Conference on Multiphase Flow*, paper 301, Lyon, France, June 8-12, 1998.

21. L.-P. Wang, A. S. Wexler, and Y. Zhou, "On the collision rate of small particles in isotropic turbulence. Part 1. Zero-inertia case." *The 7th Intl. Symposium on Gas-Solid Flows*, Paper FEDSM97-3636, ASME Fluids Engineering Conference, Vancouver, BC, Canada, June 22-26, 1997.
22. Y. Zhou, A. S. Wexler, and L.-P. Wang, "On the collision rate of small particles in isotropic turbulence. Part 2. Finite inertia case." *The 7th Intl. Symposium on Gas-Solid Flows*, Paper FEDSM97-3685, ASME Fluids Engineering Conference, Vancouver, BC, Canada, June 22-26, 1997.
23. X.-L. Tong and L.-P. Wang, "Direct simulations of particle transport in two and three dimensional mixing layers." *The 7th Intl. Symposium on Gas-Solid Flows*, Paper FEDSM97-3635, ASME Fluids Engineering Conference, Vancouver, BC, Canada, June 22-26, 1997.
24. L.-P. Wang and M.R. Maxey, "Particle transport in 3D hyperviscous turbulence." *ASME Gas-Solid Flows*, FED-Vol. 228, 419-426, 1995.
25. L.-P. Wang and M.R. Maxey, "Interactions of heavy particles with small-scale flow structures in homogeneous isotropic turbulence." *ASME Gas-Solid Flows*, FED-Vol. 166, 113-120, 1993.
26. X.-Y. Huang, D.E. Stock, and L.-P. Wang, "Using the Monte-Carlo process to simulate two-dimensional heavy particle dispersion." *ASME Gas-Solid Flows*, FED-Vol. 166, 153-160, 1993.
27. M.R. Maxey, E.J. Chang, and L.-P. Wang, "Interactions of particles and microbubbles with turbulence." *Proceedings of the Third World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics*, Honolulu, Hawaii, USA, October 31 - November 5, 1993.
28. L.-P. Wang, "Chaotic dynamics of particle dispersion in fluids." *ASME Gas-Solid Flows*, FED Vol. 121, 37-38, 1991.
29. D.E. Stock and L.-P. Wang, "Scaling relations for heavy particle dispersion in homogeneous turbulent flows." *Proceedings of International Conference on Multiphase Flows*, Vol. II, 65-68, 1991.
30. L.-P. Wang and D.E. Stock, "Numerical simulation of heavy particle dispersion: II. Scale ratio and flow decay considerations." *ASME Gas-Solid Flows*, FED Vol. 121, 19-30, 1991.
31. L.-P. Wang and D.E. Stock, "Stochastic trajectory models for turbulent diffusion: Monte-Carlo process versus Markov chains." *Twelfth Symposium on Turbulence*, Rolla, Missouri, 1990.
32. L.-P. Wang and D.E. Stock, "Numerical simulation of heavy particle dispersion." *ASME Gas-Solids Flows*, FED-Vol. 78, 13-19, 1989.
33. L.-P. Wang and D.E. Stock, "A theoretical method for obtaining Lagrangian statistics from measurable Eulerian statistics for homogeneous turbulence." *Eleventh Symposium on Turbulence*, Rolla, Missouri, B14.1-B14.12, 1998.
34. L.-P. Wang, D.E. Stock, and B.K. Lamb, "On the relationship between Lagrangian and Eulerian scales for Kraichnan's Gaussian random velocity field." *Symposium on Turbulence and Diffusion*, San Diego, California, 92-95, 1998.
35. J.-M. Ding, L.-P. Wang, and Z.Q. Fan, "The dynamic behavior of pressure in a pipe of fluid power system." *Conf. on Fluid Power Transfer and Control*, China, Vol. II, 1417-1426, 1985.

Invited Talks

1. *Numerical Weather Prediction and Climate Modeling*, Invited Talk for Math Awareness Month, Department of Mathematical Sciences, University of Delaware. April 14, 2009,
2. *Simulation of Viscous Flow and Colloid Transport in Saturated Soil Porous Media*, SIAM Conference on Computational Science and Engineering (CSE09), March 2, 2009, Miami Hilton Hotel, Miami, Florida.
3. *Turbulent Collision-Coalescence of Cloud Droplets and its Impact on Warm Rain Initiation*, Fluid Mechanics Seminar Series, University of Washington, Seattle, Washington, January 23, 2009.
4. *Turbulent Collision-Coalescence of Cloud Droplets and its Impact on Warm Rain Initiation*, International School and Workshop on *Dynamics of Inertial Particles: From Ocean and Atmosphere to Planets*, Max Planck Institute of Physics and Complex Systems, Dresden, Germany, September 15, 2008.
5. *On Piecewise Log-Normal Approximation and its Application to the Kinetic Collection Equation*, MMM seminar at the National Center for Atmospheric Research, August 19, 2008.
6. *Turbulent Collision-Coalescence of Cloud Droplets and its Impact on Warm Rain Initiation*, Workshop on Physics of Climate Change, Kavli Institute for Theoretical Physics, Santa Barbara, July 2, 2008, talk made available online at <http://online.itp.ucsb.edu/online/climate08/wang/>
7. *Direct Numerical Simulation of Particle-Laden Flows*, International Conference on Applied Mathematics: Modeling, Analysis and Computation. June 2, 2008, Hong Kong.
8. *Direct Numerical simulations of particle-laden flows*. Seminar for UD Computer Science Group Meeting (Peter Monk), University of Delaware. February 18, 2008.
9. *Direct Numerical simulations of particle-laden flows*. POSE Seminar, College of Marine and Earth Studies, University of Delaware. November 9, 2007.
10. *Direct Numerical simulations of particle-laden flows*. Seminar for ELEG662, Department of Electrical Engineering, University of Delaware. October 3, 2007.
11. *Direct Numerical simulations of particle-laden flows*. GTP and MMM joint seminar at the National Center for Atmospheric Research. August 16, 2007.
12. *The role of turbulence in warm rain initiation*. Seminar at Institute of Geophysics, Warsaw University, Warsaw, Poland. July 16, 2007.
13. *The role of turbulence in warm rain initiation*. Seminar at Institute of Atmospheric Sciences and Climate, Italian National Research Council, Rome, Italy, July 6, 2007.
14. *The role of turbulence in warm rain initiation*. Workshop on Particle-Laden Flows and its Application to Environmental and Chemical Engineering, Chinese Academy of Sciences, Beijing, China, May 27, 2007.
15. *Environmental Fluid Mechanics: Naturally Occurring Flow Systems*. Third Annual Business, Technology & Careers Conference, Department of Mechanical Engineering, University of Delaware. April 27, 2007.
16. *Turbulent Collision-Coalescence of Cloud Droplets and Warm Rain Initiation*. MMM Seminar at the National Center for Atmospheric Research. January 18, 2007.

17. *Effects of air turbulence and stochastic coalescence on the size distribution of cloud droplets.* Invited seminar at Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, July 1, 2006.
18. *Direct simulations of turbulent particle-laden flows.* Invited seminar at Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, June 30, 2006.
19. *Modeling fluid flow and species transport in fuel cells using the lattice-Boltzmann approach.* Presented at The 14th International Conference on Discrete Simulation of Fluid Dynamics in Complex Systems, Kyoto University, Kyoto, Japan, August 23, 2005.
20. *On the accuracy and Convergence of numerical solution of the collision-coalescence equation.* Mesoscale and Microscale Meteorology Seminar series at National Center for Atmospheric Research, Boulder, CO, January 6, 2005.
21. *Towards Better Understanding and Quantification of Turbulence Effects on Collision Rates of Cloud Droplets.* Presented at Mini-Symposium on Incorporation of Particle-Turbulence Interactions in Geophysical Suspensions, American Physical Society/2004 Annual Meeting of Division of Fluid Dynamics, Seattle, WA, November 21, 2004.
22. *Towards Better Understanding and Quantification of Turbulence Effects on Collision Rates of Cloud Droplets.* Seminar at Mesoscale and Microscale Meteorology (MMM) Division, National Center for Atmospheric Research, Boulder, CO, August 26, 2004.
23. *Multiscale simulations of turbulent particle-laden flows.* Presented at 13th International Conference on the Discrete Simulation of Fluid Dynamics, Boston, MA, August 16, 2004.
24. *Direct Simulations of Turbulent Particle-Laden Flows.* Invited seminar at Institute of Fluid Engineering, Zhejiang University, Hangzhou, China, June 18, 2004.
25. *Droplet-Turbulence Interactions in Atmospheric Clouds and Their Implications on the Warm Rain Formation: Recent Progress and Open Issues.* Workshop on Warm-Rain Physics, McGill University, Montreal, Canada, May 17, 2004.
26. *Effects of turbulence on the coagulation growth of cloud droplets.* Department of Mechanical Engineering Fall 2003 Colloquium Series, New Jersey Institute of Technology, Newark, New Jersey, November 12, 2003.
27. *Droplet-turbulence interactions in atmospheric clouds and their implications on the warm rain formation,* Mechanical Engineering Seminar Series, University of Delaware, Newark, Delaware, November 7, 2003.
28. *Effects of turbulence on the coagulation growth of cloud droplets – An overview and recent results.* A Keynote Presentation at the Ninth International Symposium on Gas-Particle Flows, 2003 Fluids Engineering Division Summer Meeting, Honolulu, Hawaii, July 9, 2003.
29. *Learning and Doing: The Solar Decathlon.* A panel presentation with P. Paxton Marshall (University of Virginia) and Henry W. Brandhorst, Jr. (Auburn University), AAUP 89th Annual meeting “Liberal Education and Social Responsibility”, Washington D.C., June 14, 2003.
30. *Effects of turbulence on the coagulation growth of cloud droplets.* Mesoscale and Microscale Meteorology Seminar Series, National Center for Atmospheric Research, Boulder, Colorado, February 25, 2003.
31. *Particle Transport and Flow Modulation in Particle-Laden Shear Flows.* Seminar at the National Cheng Kung University, Taiwan, January 8, 2001.
32. *Simulation and Modeling Turbulent Coagulation of Inertial Particles.* Seminar at National Taiwan University, Taiwan, January 5, 2001.

33. *Simulation and Modeling Turbulent Coagulation of Inertial Particles*. Seminar at Levich Institute, CUNY, September 6, 2000.
34. *Direct Numerical Simulation of Turbulence: LBE and Spectral Methods*. Presented at a workshop on "Kinetic Methods for CFD and Parallel Computing", ICASE/NASA Langley, Hampton, Virginia, August 16, 2000.
35. *Modeling Turbulent Coagulation of Inertial Particles*, An invited presentation at the ASME Fluids Engineering Summer Meeting, Boston, June 13, 2000.
36. *Simulation of Two-way Coupled, Particle-laden Mixing Layer*, Forum on Multiphase Flows - Work in Progress, ASME Fluids Engineering Summer Meeting, Washington D.C., June 22, 1998.
37. *On Statistical Mechanical Descriptions of Turbulent Coagulation*, Mini-Symposium on Multiphase Flows and Fluid Turbulence, The 19th Annual Meeting of Canadian Applied and Industrial Mathematics Society and 13th Canadian Symposium on Fluid Dynamics, Simon Fraser University, BC, May 29, 1998.
38. *On the Average Settling Velocity of Aerosols in the Atmospheric Boundary Layer*, Seminar at the US Army Research Laboratory, Adelphi, Maryland, December 11, 1997.
39. *Turbulent Collision of Finite-Inertia Particles*. Mechanical Engineering Seminar Series at University of Maryland, November 14, 1997.
40. *Direct Simulation of Three-Dimensional Particle-Laden Mixing Layer*. Department of Mechanical Engineering, The Johns Hopkins University, October 9, 1997.
41. *Towards Numerical Experiments of Single- and Two-Phase Flows in a Mixing Vessel*, DuPont Experimental Station, September 23, 1997.
42. *Direct Simulations of Particle Transport in Two and Three Dimensional Mixing Layers*. Seminar at The State Key Lab for Turbulence Research and Center for Nonlinear Science, Department of Mechanics and Engineering Science, Peking University, June 2, 1997.
43. *Transport and Collision Rate of Heavy Particles in Fully-Developed Turbulence*, Department of Engineering Mechanics and National Key Lab of Coal Combustion, Tsinghua University, China, May 30, 1997.
44. *Transport and Collision Rate of Heavy Particles in Fully-Developed Turbulence*. Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, November 14, 1996.
45. *Study of Passive Scalar Dynamics through High-Resolution Simulations*. Presented at Workshop on Scaling Dynamics and Fluid Turbulence, Los Alamos National Laboratory, August 15, 1996.
46. *Chaotic dynamics of particle dispersion in fluids*. Presented at the 6th Symposium on Gas-Solid Flows, ASME Fluids Engineering Summer Meetings, Portland, Oregon, June 25, 1991.

Research Supervision

Doctoral students for whom I have served (or am serving) as advisors and their current position:

1. Hossein Parishani, 6/2008 – present: "Impact of air turbulence on collision-coalescence growth of cloud droplets and high-resolution DNS."
2. Harman Khare, 10/2008 –: "Impact of air turbulence on collision-coalescence growth of cloud droplets and high-resolution DNS."

3. Grace Shi, 6/2007 – present: “Simulation of gas-liquid interfacial flows in porous media.”
4. Hui Gao, 6/2006 – present: “A hybrid computational approach for turbulent collision-coalescence of cloud droplets.”
5. Valentin Neacsu, 9/2006 – present: “Investigation of multiphase porous-medium flows.” As co-advisor, advisor: S.G. Advani of Mechanical Engineering.
6. Volha I Lazouskaya, 9/2004 – 7/2008: “Colloidal transport in microchannels with gas-liquid-solid interfaces.” As co-advisor, advisor: Dr. Yan Jin of Plant and Soil Sciences. Currently a Research Scientist at Environmental Services, Shaw Groups Inc., New Jersey.
7. Jie (Jodie) Han, 9/2004 – 5/2008: “Transport and retention of viruses and microspheres in saturated and unsaturated porous media.” As co-advisor, advisor: Dr. Yan Jin of Plant and Soil Sciences.
8. Yan Xue, 6/2002 – 5/2006: “Effects of air turbulence and stochastic coalescence on the growth of cloud droplets.” Currently working at Dell Financial Services in Austin, Texas on Risk Management Decision Science.
9. Orlando Ayala, 8/2001 – 8/2005: “Effects of turbulence on the collision rate of cloud droplets.” Now Associate Professor at Departamento de Ingeniería Mecánica, Universidad de Oriente, Venezuela.
10. Jim DeSpirito, 2/1995 – 8/2004: “Particle dispersion and flow modulation in particle-laden jet.” Now Aerospace Engineer at U.S. Army Research Laboratory, Aberdeen Proving Ground, MD.
11. Rao-Yang Zhang, 1/1995 – 5/2000: “Lattice Boltzmann approach for multiphase flows.” Now Director of Physics Algorithm Development at Exa Corp., Lexington, MA.
12. Yong Zhou, 1/1995-5/1999: “Geometric collision rate of inertial particles in fully-developed turbulence.” Now Senior Physicist / Engineer, Exa Corp., Lexington, MA.
13. Xiao-Ling Tong, 9/1994 -7/1998: “Particle transport and flow modulation in particle-laden mixing layers.” Now Assistant Professor of Computational Engineering, Mississippi State University.

Postdoctoral Fellows and Visiting Scientists for whom I have served (or am serving) as advisors and their current position:

1. Dr. Guo-Dong Jin, 10/2008 – 1/2009: “Issues in large-eddy simulations of particle-laden flows”, now a Scientist at Laboratory of Nonlinear Mechanics, Institute of Mechanics, Chinese Academy of Sciences.
2. Dr. Bogdan Rosa, 1/2006 – 12/2008: “Effects of Turbulence on the Collision-Coalescence Growth of Cloud Droplets”, now a Research Scientist at Institute of Meteorology and Water Management, Warsaw, Poland.
3. Dr. Behnam Afsharpoya, 2/2005 – 01/2006: “LBE modeling of fluid flows in fuel cells.” Now a Research Engineer at Invercon, LLC, PA.
4. Dr. Murat Aktas, 9 – 10/2004, “LBE simulation of Complex channel flow.” Now a faculty at a university in Turkey.
5. Dr. Pablo Dmitruk (Bartol Research Institute), 2001-2002. “Parallel implementation of FFT on a Beowulf Cluster.” Co-advised with W H Matthaeus. Now a Professor of Geophysics in Argentina.
6. Dr. Daniel Martinez, 1/1996–2/1997: “High-performance simulations of complex turbulent flows.”

7. Dr. Biswadip Shome, 11/1995–11/1996: “Airflow characterization in the pharynx and its application to sleep apnea.” Co-advised with M.H. Santare.

Master’s students for whom I have served (or am serving) as advisors (and their current position):

1. Queming Qiu, 7/2008 – present: “Modeling colloid transport in porous media.”
2. Stephanie Merkler, 6/2006 – 3/2008: “The Piecewise Log-normal approximation and its application to the kinetic collection equation.” Currently Engineer at Lockheed Martin.
3. Jeff Doody, 8/2000 – 6/2002: “Modeling Physical Vapor Deposition for Thin-Film Production.”
4. Orlando Ayala, 1/1999 – 8/2001: “CFD Modeling of Compressible Turbulence in Gas Turbine.”
5. Adrian Gorea, 9/1997 – 1/1999: “Drag and Heat Transfer in Laminar Flows around arbitrarily Shaped Body: A Virtual Boundary Approach.”

Undergraduate students for whom I have served (or am serving) as research advisors:

1. Peter John, 2007-2008: “Simulations of complex flow and mixing in a curved pipeline.”
2. Scott Johnson, 2006: “Methods to monitor particle clustering in turbulence and comparison with observations.”
3. Scott Kasprzak, 2003-2004: “3D animation of particle-laden turbulent flows using open-source Linux-based packages (VTK).”
4. Joseph P. Feser, 2003: “Development and construction of a cloud chamber.”
5. Scott Kasprzak, 2002: “3D animation of particle-laden turbulent flows using PV Wave.”
6. Anthony Di Stasio, Fall 2002, Independent Study and Research: Solar Decathlon Engineering Issues.
7. Jennifer Paulin, 9/1997–5/1998: “Experiments and simulations of gas-solid fluidized bed.”
8. Jennifer Paulin, Fall 1997. Independent study: Heat Transfer

Courses Taught

I have taught the following list of 34 courses at UD (97 credits and a total of 1,360 students):

2009	Spring	MEEG837	Multiphase flow & Transport	3 credits	6 students
2009	Spring	MEEG867	Lattice Boltzmann Approach	3 credits	8 students
2008	Fall	MEEG341	Thermodynamics	3 credits	80 students
2008	Spring	MEEG344	Thermodynamics	3 credits (2)	72 students
2007	Fall	MEEG/MAST467/667	Intro to GFD	3 credits	12 students
2007	Spring	MEEG344	Thermodynamics	3 credits (2)	75 students
2007	Spring	MEEG102	Intro to ME Lab	1 credit	78 students
2006	Fall	MEEG681/481	Computer Soln of Engr Probs	3 credits	24 students
2006	Fall	MEEG637	Two Phase Flows	3 credits	7 students
2006	Spring	MEEG344	Thermodynamics	3 credits (2)	73 students
2006	Spring	MEEG102	Intro to ME Lab	1 credit	118 students
2005	Fall	MEEG681/481	Computer Soln of Engr Probs	3 credits	15 students
2005	Spring	MEEG344	Thermodynamics	3 credits	69 students
2005	Spring	MEEG342	Heat Transfer	3 credits	69 students

2005	Spring	MEEG102	Intro to ME Lab	1 credit	115 students
2004	Spring	MEEG681	Computer Soln of Engr Probs	3 credits	9 students
2004	Spring	MEEG867	Lattice Boltzmann Approach	3 credits	6 students
2004	Spring	MEEG167	Intro to ME Lab	1 credit	105 students
2003	Fall	MEEG637	Two Phase Flows	3 credits	4 students
2002	Spring	MEEG467	Solar Powered Homes	3 credits	14 students
2002	Spring	MEEG681/481	Computer Soln of Engr Probs	3 credits	11 students
2001	Fall	MEEG637	Two Phase Flows	3 credits	6 students
2001	Spring	MEEG681/481	Computer Soln of Engr Probs	3 credits	9 students
2000	Fall	MEEG630	Intermediate Fluid Mechanics	3 credits	16 students
2000	Spring	MEEG342	Heat Transfer	3 credits	37 students
2000	Spring	MEEG681/481	Computer Soln of Engr Probs	3 credits	17 students
1999	Fall	MEEG630	Intermediate Fluid Mechanics	3 credits	16 students
1999	Spring	MEEG467/667	Computer Soln of Engr Probs	3 credits	27 students
1998	Fall	MEEG307	Thermodynamics I	3 credits	37 students
1998	Spring	MEEG467/667	Computer Soln of Engr Probs	3 credits	19 students
1997	Fall	MEEG307	Thermodynamics I	3 credits	55 students
1997	Spring	MEEG667	Two Phase Flows	3 credits	5 students
1996	Fall	MEEG307	Thermodynamics I	3 credits	47 students
1996	Spring	MEEG832	Fluid Dynamics	3 credits	10 students
1995	Fall	MEEG307	Thermodynamics I	3 credits	40 students
1995	Spring	MEEG832	Fluid Dynamics II	3 credits	9 students
1994	Fall	MEEG307	Thermodynamics I	3 credits	54 students

Notes: In the preceding list, the courses that I co-taught are MEEG/MAST467/667 (Intro to GFD), MEEG467 (Solar Powered Homes), MEEG167 (Intro to ME Lab), MEEG102 (Intro to ME Lab), and MEEG342 (Heat transfer, in 05S).

I taught a distant-learning course “MEEG630 Intermediate Fluid Mechanics” in 08F, 08S, 07F, 07S, 06F, 05S, 04F, 04S, 02S, 01F, 01S, and 00F to a total of 33 students.

I also taught the following course at Washington State University:

1990	Spring	ME301	Thermodynamics II	3 credits	45 students
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University Services

- 2008-09 Mechanical Engineering Faculty Search Committee.
- 2007-present Chair, ME Dept. Undergraduate Lab Committee, Overseeing ABET issues and teaching lab improvements.
- 2007-08 Co-led an ad-hoc university committee (with Prof. David Legates of Geography and Prof. Denny Kirwan of the College of Earth and Marine Studies) to develop an application for the University of Delaware to join UCAR (University Corporation for Atmospheric Research), planned and hosted an on-site visit on April 16, 2007 by the UCAR team. I also prepared an overview presentation for research in the College of Engineering with inputs from 9 CE faculty members. These eventually led to the university to formally become a UCAR member university in October 2007.
- 2005-present University Faculty Senator.

- 2005-present University Committee on Instructional Computing and Research Support Services.
- 2005-07 Mechanical Engineering Computer Committee (Chair).
- 2005-06 Clean Energy Faculty Search Committee; Undergraduate Design Committee.
- 2004-05 Bill N. Baron Fellowship Award Committee (Chair); Computer Committee (Chair); University Committee on Undergraduate Records and Certification; University Instructional Computing Committee; eCALC Committee;
- 2003-04 University Committee on Undergraduate Records and Certification; College Cluster Computing Group; Biomechanics Search Committee; Coordinator for MATH352/353; Department Computer Committee (chair).
- 2002-03 Coordinator for MATH352/353; Annual appraisal for Mr. Byrnes.
- 2001-02 UD Solar Decathlon: This is probably the largest student project in recent history at UD. I served as the Faculty Director for the UD team with 60 students and 16 faculty/staff. Our team successfully designed and built a solar home which became one of the 14 entries for the Solar Decathlon event held on the National Mall in Washington D.C., in Sept-Oct, 2002. The project started in June 2001 and involved a variety of activities spanning over teaching, research, and service. I, teamed with Ajay Prasad and Jim Glancey, oversaw all aspects of the project, including proposal writing, organization, strategic planning, design and analysis, communications (with sponsors, professionals, students, advisors, and the Headquarters), fund-raising, field trips, meetings and presentations, publicity, *etc.* I also organized 4 educational seminars in Fall 2001 for the Solar Decathlon students.
- The project had raised over \$200,000 in-kind contributions and monetary support.
- The UD Solar House has now become an important part of the newly-built, Innovation Technology and Exploration Center by the Delaware Aerospace Education Foundation, at Big Oak Road in Smyrna, Delaware. It is expected that the UD Solar House will serve the public at large for many years to come.
- 2001-02 University Senate Committee on Instructional, Computing, and Research Support Services; Solid Mechanics Faculty Search Committee; Department Seminar Series (chair); Computer Committee (chair).
- 2000-01 RISE 2000 8th Annual Achievement Convocation; Department Seminar Series (chair); Computer committee (chair).
- 1999-00 Computer Committee (chair); Department Web Committee (Chair); Ph.D. Qualifiers coordinator (Fluids).
- 1998-99 Computer Committee (chair), Department Web Committee (Chair), College Computer Support Search Committee.
- 1997-98 Fluids Particulate and Environmental Systems Seminar Committee (Chair), Computer Committee (chair); University Supercomputing Committee.
- 1996-97 Fluids Particulate and Environmental Systems Seminar Committee (Chair), Computer Committee; Graduate Curriculum Committee.
- 1995-96 Fluids Particulate and Environmental Systems Seminar Committee (Chair), Computer Committee, Ad-hoc College Computing Committee.
- 1994-95 Fluids Particulate and Environmental Systems Seminar Committee (Chair), Computer Committee; Engineering Outreach Workshop.

In addition, I have participated regularly in Engineering Open House, Delaware Discovery Days, B&G Saturdays, Delaware Decision Days, etc.

Service to The Professional Society

Journal editorship

Associate Editor, since 9/2007, *International Journal of Engineering Systems Modelling and Simulation*

Organizer

Organized a panel session on “*Learning and Doing: The Solar Decathlon*”, AAUP 89th Annual meeting “*Liberal Education and Social Responsibility*”, Washington D.C., June 11-15, 2003. With P. Paxton Marshall (University of Virginia) and Henry W. Brandhorst, Jr. (Auburn University). June 13, 2003.

Organized and chaired a panel session on “*Special Application of Multiphase Flow: Aerosol and Air Pollution*,” 4th International Conference on Multiphase Flow, New Orleans, LA, June 1, 2001.

Session chairman at scientific conferences

Session on “Clouds and Turbulence”, The 4th IMS Turbulence Workshop, Institute for Mathematical Sciences, Imperial College, London, 3/2009.

Session on Modeling Complex and Multiphase Flows, International Conference on Applied Mathematics: Modeling, Analysis and Computation, Hong Kong, 6/2008.

Session on Particle-Interaction, International conference on Multiphase Flow, Leipzig, Germany, 7/2007

Multiphase Flows II, APS/DFD meeting in Chicago, 11/2005

Micro, Nano Particle and Bubble II, The 5th International conference on Multiphase Flow, Yokohama, 6/2004

Aerosol Physics–Coagulation / Agglomeration, Annual meeting of the American Association for Aerosol Research, 11/1999

Particle-laden and Multiphase Flows, American Physical Society, Division of Fluid Dynamics, 11/1998

Particle Dispersion, Int. Sym. on Numerical Methods in Multiphase Flows, ASME Fluids Engineering conference, 6/1998

Simulation of Gas-Particle Flows, Symposium on Gas-Solid Flow, ASME Fluids Engineering conference, 6/1997

Direct Numerical Simulation, American Physical Society, Division of Fluid Dynamics, 11/1996

Gas-Particle Flows, Symposium on Gas-Solid Flow, ASME Fluids Engineering conference, 8/1995

Particle-Laden Shear Flows, Sym. on Turbulence Structure & Flow Control, SES Annual Conference, 10/1995

Reviewer for the following journals (Currently I review 15 to 20 manuscripts per year)

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|-------------------------------------------------------|-------------------------------------|
| 1. Acta Mechanica Sinica | 17. Int. J. of Multiphase Flow |
| 2. Aerosol Science and Technology | 18. J. Applied Meteorology |
| 3. AIAA Journal | 19. J. Atmospheric Sciences |
| 4. ASCE J. of Hydraulic Engineering | 20. J. Comp. Physics |
| 5. ASME J. of Fluids Engineering | 21. J. Fluid Mechanics |
| 6. Chinese J. of Theoretical and Applied Mechanics | 22. J. Composites A |
| 7. Composites, Part A. | 23. J. Fluids Engineering |
| 8. Computers & Fluids | 24. J. Geophysical Research: Ocean |
| 9. Computers & Mathematics with Applications | 25. J. Marine Research |
| 10. Deep-Sea Research | 26. J. of Meteorology |
| 11. Europhysics Letters | 27. J. Rheology |
| 12. Experiments in Fluids | 28. J. Plasma Physics |
| 13. Geophysical Research Letters | 29. J. Turbulence |
| 14. Heat and Fluid Flow | 30. J. Zhejiang University Science |
| 15. Int. J. of Comp. Fluid Dyn. | 31. New J. Physics |
| 16. Int. J. of Engr. Systems Modelling and Simulation | 32. Numerical Heat Transfer |
| | 33. Physics of Fluids |
| | 34. Powder Technology |
| | 35. The Royal Society Proceedings A |

Reviewer for the following funding agencies

National Science Foundation (CTS Division, ATM Division)
 National Science Foundation (SBIR, POWRE panels)
 Cornell Supercomputing Center
 The Israel Science Foundation
 U.S. Civilian Research and Development Foundation.

Reviewer for the following publishing companies

Cambridge University Press: Heat Transfer Textbook (3rd ed), by Professors John Lienhard IV and John Lienhard V.
 Cambridge University Press: An introduction to continuum mechanics with applications, by J.N. Reddy

Professional Affiliations

Member: American Physical Society; American Meteorological Society; American Society of Mechanical Engineers; American Association of University Professors.
 Past Member: American Association for Aerosol Research, Society of Engineering Sciences.

Consulting

Jonas Inc.	Simulating particle transport in a turbulent flow	2001 – 2006
CFD Research Corporation	Multiphase flow modeling	1995 – 1996
Los Alamos National Lab	Parallel computation of turbulence	1993 – 1995