

Publications of Professor James Luscombe

1. G.F. Mazenko and J.H. Luscombe, "Application of the Real Space Dynamic Renormalization Group Method to the One-Dimensional Kinetic Ising Model," *Annals of Physics*, vol. 132, no. 1, p. 121-62 (1981).
2. J.H. Luscombe and G.F. Mazenko, "Higher Order Dynamic Renormalization Group Calculations: One-Dimensional Results," Meeting of the American Physical Society, March 8-12, Dallas, TX, *Bulletin of the American Physical Society*, Vol. 27, p. 352 (1982).
3. E. Oguz, G.F. Mazenko, J.H. Luscombe, O.T. Valls and S.J. Heilig, "Diffusion in Adsorbed Systems," Meeting of the American Physical Society, March 8-12, 1982, Dallas, TX, *Bulletin of the American Physical Society*, Vol. 27, p. 379 (1982).
4. S.J. Heilig, J.H. Luscombe, G.F. Mazenko, E. Oguz and O.T. Valls, "Dynamic Correlations in the Spin-Conserving Two-Dimensional Kinetic Ising Model," *Physical Review B*, vol. 25, no. 11, p. 7003-18 (1982).
5. E. Oguz, O.T. Valls, G.F. Mazenko, J.H. Luscombe and S.J. Heilig, "Diffusive Motion in a Model for Particle Hopping," *Surface Science*, vol. 118, no. 3, p. 572-84 (1982).
6. J.H. Luscombe and G.F. Mazenko, "Higher-Order Calculations in the Real Space Dynamic Renormalization Group," *Annals of Physics*, vol. 146, no. 1, p. 174-208 (1983).
7. J.H. Luscombe, "Renormalization Group Theory of Domain Growth Kinetics," University of Toronto, Toronto, Canada, January 1984. Invited talk.
8. J.H. Luscombe, "Nonlinear Response Theory of Ising-Like Systems," *Physical Review B*, vol. 29, no. 9, p. 5128-43 (1984).
9. J.H. Luscombe, "Fractals: What are They and Why Should We Care?," University of Toronto, Toronto, Canada, October 1984. Invited talk.
10. J.H. Luscombe, "Statistical Mechanics of Fractal Lattices: Renormalization Group Analysis," Clark University, Worcester, MA, November 1984. Invited talk
11. J.H. Luscombe and R.C. Desai, "Statistical Mechanics of a Fractal Lattice: Renormalization-Group Analysis of the Sierpinski Gasket," Meeting of the American Physical Society, January 21-24, 1985, Toronto, Canada, *Bulletin of the American Physical Society*, Vol. 30, p. 42 (1985).

12. J.H. Luscombe and R.C. Desai, "Dynamic Critical Phenomena in Fractals," Meeting of the American Physical Society, March 25-29, 1985, Baltimore, MD, *Bulletin of the American Physical Society*, Vol. 30, p. 223 (1985).
13. J.H. Luscombe, "Renormalization Group Analysis of Fractals," Center for Naval Analysis, Arlington, VA, March 1985. Invited talk.
14. J.H. Luscombe, "Statistical Mechanics of Fractal Lattices: Renormalization Group Analysis," Case Western Reserve University, Cleveland, OH, April 1985. Invited talk.
15. J.H. Luscombe and R.C. Desai, "Ising Thermodynamics on the Sierpinski Gasket," *Physics Letters A*, vol. 108, no. 1, p. 39-42 (1985).
16. J.H. Luscombe and R.C. Desai, "Dynamic Critical Phenomena in Fractals," *Physical Review B*, vol. 32, no. 1, p. 488-90 (1985).
17. J.H. Luscombe and R.C. Desai, "Statistical Mechanics of a Fractal Lattice: Renormalization-Group Analysis of the Sierpinski Gasket," *Physical Review B*, vol. 32, no. 3, p. 1614-27 (1985).
18. J.H. Luscombe, J.S. Preston, J.E. Sipe and H.M. van Driel, "Instabilities During Laser Melting of Semiconductors," Optical Society of America Annual Meeting, October 14-18, 1985, Washington D.C., *Journal of the Optical Society of America A - Optics, Image Science, and Vision*, Vol. 2, no. 13, p. 53 (1985).
19. J.H. Luscombe, "Statistical Mechanics of Fractal Lattices: Renormalization Group Analysis," Iowa State University, Ames, IA, October 1985. Invited talk.
20. J.H. Luscombe, "Electric Field Enhancement of Electron Localization," University of Toronto, Toronto, Canada, November 1985. Invited talk.
21. J.H. Luscombe, "Statistical Mechanics of Fractal Lattices: Renormalization Group Analysis," Dalhousie University, Halifax, Canada, November 1985. Invited talk.
22. J.H. Luscombe, "Electric Field Enhancement of Electron Localization," Dalhousie University, Halifax, Canada, November 1985. Invited talk.
23. J.H. Luscombe, "Laser-Induced Pattern Formation in Semiconductor Surfaces," Dalhousie University, Halifax, Canada, November 1985. Invited talk.
24. M. Luban and J.H. Luscombe, "Electric Field Enhancement of Localization," Meeting of the American Physical Society, March 31-April 4, 1986, Las Vegas, NV, *Bulletin of the American Physical Society*, Vol. 31, p. 680 (1986).

25. M. Luban and J.H. Luscombe, "Localization by Electric Fields in One-Dimensional Tight-Binding Systems," *Physical Review B*, vol. 34, no. 6, p. 3674-7 (1986).
26. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Illinois Institute of Technology, Chicago, IL, February 1987. Invited talk
27. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," University of South Carolina, Columbia, SC, February 1987. Invited talk.
28. M. Luban and J.H. Luscombe, "Metal-Insulator Transition in an Incommensurate System: Incipient Infinite Degeneracy," Meeting of the American Physical Society, March 16-20, 1987, New York, NY, *Bulletin of the American Physical Society*, Vol. 32, p. 724 (1987).
29. J.H. Luscombe, M.C. Tringides and M.G. Lagally, "Disordering Kinetics in One Dimension," Meeting of the American Physical Society, March 16-20, 1987, New York, NY, *Bulletin of the American Physical Society*, Vol. 32, p. 768 (1987).
30. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," San Diego State University, San Diego, CA, April 1987. Invited talk
31. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Boston College, Chestnut Hill, MA, April 1987 Invited talk
32. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," University of Missouri, Columbia, MO, May 1987 Invited talk
33. J.H. Luscombe, "Spin-Exchange Critical Dynamics in Quasilinear Fractal Geometries," *Journal of Physics A: Mathematical and General*, vol. 20, no. 5, p. 1299-1302 (1987).
34. M. Luban and J.H. Luscombe, "Localized Eigenstates of One-Dimensional Tight-Binding Systems: A New Algorithm," *Physical Review B*, vol. 35, no. 17, p. 9045-55 (1987).
35. J.H. Luscombe, "Nonuniversal Critical Dynamics of the Alternating Bond Ising Chain: Relaxational and Diffusive Kinetics," *Physical Review B*, vol. 36, no. 1, p. 501-10 (1987).
36. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Naval Research Laboratory, Washington, D.C., July 1987 Invited talk
37. J.H. Luscombe, "Disordering Kinetics of Si(100) Dimers," Los Alamos National Laboratory, Los Alamos, NM, July 1987 Invited talk

38. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Battelle Pacific Northwest Laboratory, Kirkland, WA, July 1987. Invited talk
39. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Texas Instruments, Inc., Dallas, TX, August 1987. Invited talk
40. J.H. Luscombe, "Physics of Electron Localization in Quasi-Periodic Lattices," Naval Research Laboratory, Washington, D.C., September 1987. Invited talk
41. M. Luban, J.H. Luscombe and S. Kim, "Incipient Infinite Degeneracy and the Delocalization Transition in a Quasiperiodic Potential," *Physical Review Letters*, vol. 60, no. 25, p. 2689-92 (1988).
42. J.H. Luscombe and M. Luban, "Electron Localization and Quasi-Localization in Piecewise-Constant Quasiperiodic Potentials," Meeting of the American Physical Society, March 21-25, 1988, New Orleans, LA, *Bulletin of the American Physical Society*, Vol. 33, p. 807 (1988).
43. J.H. Luscombe, "Resonant Tunneling Transistors," Television interview, KNTV, San Jose, CA, December 1988.
44. J.N. Randall, J.H. Luscombe, M.A. Reed and A.C. Seabaugh, "Particle-in-a-Box Technology," *Australian Electronics Engineering*, vol. 22, no. 12, p. 32-8 (1989).
45. M.A. Reed, J.N. Randall and J.H. Luscombe, "Quantum Dot Resonant Tunneling Spectroscopy," 6th International Winterschool on Physics, February 15-19, 1989, Mautendorf, Austria
46. M. Luban, J.H. Luscombe, M.A. Reed and D.L. Pursey, "Anharmonic Oscillator Model of a Quantum Dot Nanostructure," Meeting of the American Physical Society, March 20-24, 1989, St. Louis, MO, *Bulletin of the American Physical Society*, Vol. 34, p. 633 (1989).
47. M.A. Reed, J.H. Luscombe, J.N. Randall, W.R. Frensley, R.J. Aggarwal, R.J. Matyi, T.M. Moore and A.E. Wetsel, "Quantum Dot Resonant Tunneling Spectroscopy," NATO Advanced Research Workshop on Science and Engineering of One- and Zero-Dimensional Semiconductors, March 29-April 1, 1989, Cadiz, Spain.
48. M.A. Reed, J.N. Randall, J.H. Luscombe, W.R. Frensley, R.J. Aggarwal, R.J. Matyi, T.M. Moore and A.E. Wetsel, "Quantum Dot Resonant Tunneling Spectroscopy," Meeting of the German Physical Society, April 3-7, 1989, Münster, Germany.

49. W.R. Frensley, M.A. Reed and J.H. Luscombe, "Photoluminescent Determination of Charge Accumulation in Resonant Tunneling Structures," *Physical Review Letters*, vol. 62, no. 10, p. 1207 (1989).
50. M.C. Tringides, J.H. Luscombe and M.G. Lagally, "Diffusive Disorder Kinetics in One Dimension," *Physical Review B*, vol. 39, no. 13, p. 9377-83 (1989).
51. M. Luban, J.H. Luscombe, M.A. Reed and D.L. Pursey, "Anharmonic Oscillator Model of a Quantum-Dot Nanostructure," *Applied Physics Letters*, vol. 54, no. 20, p. 1997-9 (1989).
52. J.S. Preston, J.E. Sipe, H.M. van Driel and J.H. Luscombe, "Optical Absorption in Metallic-Dielectric Microstructures," *Physical Review B*, vol. 40, no. 6, p. 3931-41 (1989).
53. J.H. Luscombe and W.R. Frensley, "Modeling Quantum Devices: Theoretical Challenges for a Post-VLSI Technology," *Texas Instruments Technical Journal*, vol. 6, no. 4, 21-8 (1989).
54. J.N. Randall, J.H. Luscombe, M.A. Reed and A.C. Seabaugh, "Laterally Confined Electron Devices," *Texas Instruments Technical Journal*, vol. 6, no. 4, p. 49-61 (1989).
55. M.A. Reed, J.N. Randall, J.H. Luscombe, W.R. Frensley, R.J. Aggarwal, R.J. Matyi, T.M. Moore and A.E. Wetsel, "Quantum Dot Resonant Tunneling Spectroscopy," *Advances in Solid State Physics*, vol. 29, p. 267-283 (1989).
56. M.A. Reed, J.N. Randall and J.H. Luscombe, "Non-Equilibrium Quantum Dots: Transport," *Nanotechnology*, vol. 1, no. 1, p. 63-6 (1990).
57. J.H. Luscombe and M. Luban, "Lateral Confinement in Quantum Nanostructures: Self-Consistent Screening Potentials," *Applied Physics Letters*, vol. 57, no. 1, p. 61-3 (1990).
58. R.J. Aggarwal, M.A. Reed, W.R. Frensley, Y.-C. Kao and J.H. Luscombe, "Tunneling Spectroscopic Study of Finite Superlattices," *Applied Physics Letters*, vol. 57, no. 7, p. 707-9 (1990).
59. J.H. Luscombe and W.R. Frensley, "Models for Nanoelectronic Devices," *Nanotechnology*, vol. 1, no. 2, p. 131-40 (1990).
60. M.A. Reed, J.H. Luscombe, J.N. Randall, W.R. Frensley, R.J. Aggarwal, R.J. Matyi, T.M. Moore and A.E. Wetsel, "Quantum Dot Resonant Tunneling Spectroscopy," in *Science and Engineering of One- and Zero-Dimensional Semiconductors*, edited by S.P. Beaumont and C.M. Sotomajor Torres (Plenum Press, New York 1990), p. 139-154.

61. M.A. Reed, J.N. Randall and J.H. Luscombe, "Quantum Dot Resonant Tunneling Spectroscopy," in *Localization and Confinement of Electrons in Semiconductors*, edited by F. Kuchar, H. Heinrich and G. Bauer (Springer-Verlag, New York 1990), p. 20-28.
62. M.A. Reed, J.N. Randall and J.H. Luscombe, "Tunneling in 0D Semiconductor Nanostructures," in *The Physics of Semiconductors*, edited by E.M. Anastassakis and J.D. Joannopoulos (World Scientific, Singapore 1990), vol. 3, p. 2451-4.
63. J.N. Randall, M.A. Reed, J.H. Luscombe, G.A. Frazier, W.R. Frensley, A.C. Seabaugh, Y.-C. Kao, T.M. Moore and R.J. Matyi, "Advances in the Processing of Quantum Coupled Devices," *Proceedings of the SPIE*, vol. 1284, p. 66-74 (1990).
64. A.C. Seabaugh, Y.-C. Kao, H.-Y. Liu, J.H. Luscombe, H.-L. Tsai, M.A. Reed, B.E. Gnade and W.R. Frensley, "Characterization of Unintentionally Disordered Superlattice Resonant Tunneling Diodes," *Proceedings of Second International Conference on Indium Phosphide and Related Materials*, IEEE Catalog #90CH2859-7, p. 416-23 (1990).
65. M.A. Reed, A.C. Seabaugh, Y.-C. Kao, J.N. Randall, W.R. Frensley and J.H. Luscombe, "Semiconductor Resonant Tunneling Device Physics and Applications," *Materials Research Society Symposium Proceedings*, vol. 198, p. 309-20 (1990).
66. A.C. Seabaugh, J.H. Luscombe and J.N. Randall, "Resonant Tunneling Transistor Logic," Government Microcircuit Applications Conference (GOMAC), *16th Edition of the Digest of Technical Papers*, p. 11-4 (1990).
67. M.A. Reed, J.N. Randall, J.H. Luscombe, W.R. Frensley and Y.-C. Kao, "Resonant Tunneling Through Quantum Molecules," Meeting of the American Physical Society, March 12-16, 1990, Anaheim, CA, *Bulletin of the American Physical Society*, Vol. 35, p. 298 (1990).
68. J.H. Luscombe and M.A. Reed, "Resonant Tunneling Selection Rules in Quantum Dot Nanostructures," Meeting of the American Physical Society, March 12-16, 1990, Anaheim, CA, *Bulletin of the American Physical Society*, Vol. 35, p. 298 (1990).
69. R.J. Aggarwal, M.A. Reed, J.H. Luscombe, W.R. Frensley and Y.-C. Kao, "Vertical Electronic Transport in AlGaAs/GaAs Superlattice Tunneling Diodes," Meeting of the American Physical Society, March 12-16, 1990, Anaheim, CA, *Bulletin of the American Physical Society*, Vol. 35, p. 825 (1990).

70. J.N. Randall, M.A. Reed, J.H. Luscombe, G.A. Frazier, W.R. Frensley, A.C. Seabaugh, Y.-C. Kao, T.M. Moore and R.J. Matyi, "Advances in the Processing of Quantum Coupled Devices," Conference on Nanostructures and Microstructure Correlation with Physical Properties of Semiconductors, March 20-21, 1990, San Diego, CA
71. A.C. Seabaugh, Y.-C. Kao, H.-Y. Liu, J.H. Luscombe, H.-L. Tsai, M.A. Reed, B.E. Gnade and W.R. Frensley, "Characterization of Unintentionally Ordered Superlattice Resonant Tunneling Diodes," Second International Conference on Indium Phosphide and Related Materials, April 23-25, 1990, Denver, CO
72. M.A. Reed, J.N. Randall and J.H. Luscombe, "Nonequilibrium Resonant Tunneling in Semiconductor Nanostructures," NATO Advanced Research Workshop on Resonant Tunneling in Semiconductors, May 14-18, 1990, El Escorial, Spain
73. M.A. Reed, J.N. Randall and J.H. Luscombe, "Tunneling in 0D Semiconductor Nanostructures," 20th International Conference on the Physics of Semiconductors, August 6-10, 1990, Thessaloniki, Greece
74. A.C. Seabaugh, J.H. Luscombe and J.N. Randall, "Resonant Tunneling Transistor Logic," Government Microcircuits Applications Conference, Technology Strategies of the 90s, November 6, 1990, Las Vegas, NV.
75. J.H. Luscombe, "Resonant Tunneling Quantum-Dot Diodes," Wright-Patterson Air Force Base, Dayton, OH, January, 1991. Invited talk
76. A.C. Seabaugh, Y.-C. Kao, H.-Y. Liu, J.H. Luscombe, H.-L. Tsai, M.A. Reed and W.R. Frensley, "Formation of Rotation-Induced Superlattices and Their Observation by Tunneling Spectroscopy," *Applied Physics Letters*, vol. 59, no. 5, p. 570-2 (1991).
77. J.H. Luscombe, J.N. Randall and A.M. Bouchard, "Resonant Tunneling Quantum-Dot Diodes: Physics, Limitations and Technological Prospects," *Proceedings of the IEEE*, vol. 79, no. 8, p. 1117-30 (1991).
78. A.C. Seabaugh, J.N. Randall, Y.-C. Kao, J.H. Luscombe and A.M. Bouchard, " $\text{In}_{0.52}\text{Al}_{0.48}\text{As}/\text{In}_{0.53}\text{Ga}_{0.47}\text{As}$ Lateral Resonant Tunneling Transistor," *Electronics Letters*, vol. 27, no. 20, p. 1832-4 (1991).
79. J.H. Luscombe, A.M. Bouchard and M. Luban, "Poisson-Schrödinger Self-Consistent Electron States in Cylindrical Quantum Wires," Meeting of the American Physical Society, March 18-22, 1991, Cincinnati, OH, *Bulletin of the American Physical Society*, Vol. 35, p. 825 (1991).
80. M. Luban, A.M. Bouchard and J.H. Luscombe, "Bloch Oscillations of Localized Electrons?," Meeting of the American Physical Society, March 18-21, 1991,

Cincinnati, OH, *Bulletin of the American Physical Society*, Vol. 36, p. 1057 (1991).

81. J.H. Luscombe, R.J. Aggarwal, M.A. Reed, W.R. Frensley and M. Luban, "Theory of the Fermi-Level Energy in Semiconductor Superlattices," *Physical Review B*, vol. 44, no. 11, p. 5873-6 (1991).
82. J.N. Randall, A.C. Seabaugh, Y.-C. Kao, J.H. Luscombe and B.L. Newell, "Electric Field Coupling to Quantum Dot Diodes," *Journal of Vacuum Science and Technology B*, vol. 9, no. 6, p. 2893-7 (1991).
83. M.A. Reed, J.N. Randall and J.H. Luscombe, "Non-Equilibrium Resonant Tunneling in Semiconductor Nanostructures," in *Resonant Tunneling in Semiconductors: Physics and Applications*, edited by L.L. Chang, E.E. Mendez and C. Tejedor (Plenum Press, New York 1991), p. 441-449.
84. J.H. Luscombe, "Nanoelectronic Modeling," International Symposium on Nanostructures and Mesoscopic Systems, Santa Fe, NM, May 19-24, 1991
Invited talk
85. J.H. Luscombe, A.M. Bouchard and M. Luban, "Self-Consistent Screening Potentials in Quantum Nanostructures: Role of Confined States," International Symposium on Nanostructures and Mesoscopic Systems, May 19-24, 1991, Santa Fe, NM.
86. M. Luban, A.M. Bouchard and J.H. Luscombe, "Bloch Oscillations of Localized Electrons?," International Symposium on Nanostructures and Mesoscopic Systems, May 19-24, 1991, Santa Fe, NM.
87. J.N. Randall, A.C. Seabaugh, Y.-C. Kao, J.H. Luscombe and B.L. Newell, "Electric Field Coupling to Quantum Dot Diodes," International Symposium on Electron, Ion and Photon Beams, May 28-31, 1991, Seattle, WA.
88. M.A. Reed, J.N. Randall and J.H. Luscombe, "Semiconductor Quantum Dot Resonant Tunneling Spectroscopy," Seventh International Conference on Hot Carriers in Semiconductors, July 1-5, 1991, Nara, Japan.
89. M.A. Reed, R.J. Aggarwal, Y.-C. Kao, J.H. Luscombe and W.M. Duncan, "Tunneling Spectroscopic Study of Miniband Break-Up and Coherence in Finite Superlattices," International Symposium on GaAs and Related Compounds, September 9-12, 1991, Seattle, WA.
90. A.M. Bouchard and J.H. Luscombe, "NANO2D: A Two-Dimensional Heterostructure Device Modeling Program," Texas Instruments Technical Report, 1991.

91. J.H. Luscombe, "III-V Semiconductor Quantum Dots," Symposium on Nanostructures and Applications, Tucson, AZ, November 18-20, 1991 Invited talk
92. A.M. Bouchard, M. Luban and J.H. Luscombe, "Self-Consistent Poisson-Schrödinger Theory for Electrons in Semiconductor Superlattices," Meeting of the American Physical Society, March 16-20, 1992, Indianapolis, IN, *Bulletin of the American Physical Society*, Vol. 37, p. 657 (1992).
93. M. Luban, A.M. Bouchard and J.H. Luscombe, "Bloch Oscillations and Other Dynamical Phenomena for Wannier-Stark Electrons in Semiconductor Superlattices," Meeting of the American Physical Society, March 16-20, 1992, Indianapolis, IN, *Bulletin of the American Physical Society*, Vol. 37, p. 659 (1992).
94. J.H. Luscombe, "Modeling Quantum Nanostructures," Texas A&M University, College Station, TX, April 1992. Invited talk
95. J.H. Luscombe, A.M. Bouchard and M. Luban, "Self-Consistent Screening Potentials in Quantum Nanostructures: Role of Confined States," *Superlattices and Microstructures*, vol. 11, no. 3, p. 357-9 (1992).
96. M.A. Reed, J.N. Randall and J.H. Luscombe, "Semiconductor Quantum Dot Resonant Tunneling Spectroscopy," *Semiconductor Science and Technology*, vol. 7, no. 3B, p. B12-14 (1992).
97. J.H. Luscombe, A.M. Bouchard and M. Luban, "Electron Confinement in Quantum Nanostructures: Self-Consistent Poisson-Schrödinger Theory," *Physical Review B*, vol. 46, no. 16, p. 10262-8 (1992).
98. J.N. Randall, A.C. Seabaugh and J.H. Luscombe, "Fabrication of Lateral Resonant Tunneling Devices," *Journal of Vacuum Science and Technology B*, vol. 10, no. 6, p. 2941-4 (1992).
99. J.H. Luscombe, "Nanoelectronic Modeling," in *Nanostructures and Mesoscopic Systems*, edited by W.P. Kirk and M.A. Reed (Academic Press, New York 1992), p. 357-367.
100. A.M. Bouchard, J.H. Luscombe, A.C. Seabaugh and J.N. Randall, "Lateral Resonant Tunneling Transistors: Simulation, Design and Experiment," in *Nanostructures and Mesoscopic Systems*, edited by W.P. Kirk and M.A. Reed (Academic Press, New York 1992), p. 393-401.
101. A.C. Seabaugh, J.H. Luscombe, J.N. Randall and G.A. Frazier, "Quantum Functional Devices Based on Resonant Tunneling," First International Workshop on Quantum Functional Devices, May 13-15, 1992, Nasu Kohgen,

Japan, *Abstracts of the 1st International Workshop on Quantum Functional Devices*, p. 70, Tokyo (1992).

102. J.N. Randall, A.C. Seabaugh and J.H. Luscombe, "Fabrication of Lateral Resonant Tunneling Devices," International Symposium on Electron, Ion and Photon Beams, June 1-5, 1992, San Francisco, CA.
103. A.C. Seabaugh, J.H. Luscombe, J.N. Randall, P.C. Colter, A. Dip, G.M. Eldallal and S.M. Bedair, "Atomic Layer Epitaxy for Resonant Tunneling Devices," Second International Symposium on Atomic Layer Epitaxy, June 3-5, 1992, Raleigh, NC.
104. F.G. Celii, Y.-C. Kao, E.A. Beam, W.M. Duncan and J.H. Luscombe, "Flux Transient Monitoring Using Reflection Mass Spectrometry," North American Conference on Molecular Beam Epitaxy, October 12-14, 1992, Ottawa, Canada.
105. A.C. Seabaugh, E.A. Beam, Y.-C. Kao, J.H. Luscombe and J.N. Randall, "Resonant Tunneling Transistors," Optical Society of America Ultrafast Electronics and Optoelectronics Conference, January 25-27, 1993, Washington, D.C.
106. A.C. Seabaugh, J.H. Luscombe and J.N. Randall, "Quantum Functional Devices: Present Status and Future Prospects," *Future Electron Devices Journal*, vol. 3, suppl. 1, p. 9-20 (1993).
107. A.C. Seabaugh, J.H. Luscombe and J.N. Randall, "Quantum Functional Devices: Present Status and Future Prospects," *Future Electron Devices Journal*, vol. 3, no. 1, p. 16-29 (1993) (in Japanese)
108. A.C. Seabaugh, J.H. Luscombe, J.N. Randall, P.C. Colter, A. Dip, G.M. Eldallal and S.M. Bedair, "Atomic Layer Epitaxy for Resonant Tunneling Devices," *Thin Solid Films*, vol. 225, nos. 1-2, p. 99-104 (1993).
109. J.H. Luscombe, "Current Issues in Nanoelectronic Modeling," *Nanotechnology*, vol. 4, no. 1, 1-20 (1993).
110. A.C. Seabaugh, E.A. Beam, Y.-C. Kao, J.H. Luscombe and J.N. Randall, "Resonant Tunneling Transistors," *Optical Society of America Proceedings on Ultrafast Electronics and Optoelectronics*, vol. 14, p. 65-70 (1993).
111. J.H. Luscombe, "How to Put the Quantum in Device Modeling," Texas Instruments, Inc., Dallas, TX, July 1993. Invited talk
112. J.H. Luscombe, "Quantum Nanoelectronics: Particle-in-a-Box Technology," University of Houston, Houston, TX, November 30, 1993. Invited talk

113. J.H. Luscombe, "What Makes Quantum Device Modeling Difficult?," Quantum Device Modeling Workshop, Dallas, TX, February 5-6, 1994. Invited talk
114. M. Luban, A.M. Bouchard and J.H. Luscombe, "Quasiperiodic Motion for an Electron in an Aperiodic Semiconductor Superlattice, Meeting of the American Physical Society, March 21-25, 1994, Pittsburgh, PA, *Bulletin of the American Physical Society*, Vol. 39, p. 487 (1994).
115. R. Lake, J.H. Luscombe and J.N. Randall, "Effects of Interface Roughness and Phonon Scattering in the Valley Current of a Double Quantum Well Structure," Conference on Surfaces and Interfaces of Mesoscopic Devices, Kona, HI, April 24-29, 1994.
116. J.H. Luscombe, "How Many Transistors Fit Onto the Head of a Pin?," Southern Methodist University, Dallas, TX, April 11, 1994. Invited talk
117. J.H. Luscombe, "Nanoelectronics: New Physics, New Technology," Naval Postgraduate School, Monterey, CA, April 21, 1994. Invited talk
118. C.H. Mikkelson, A.C. Seabaugh, E.A. Beam, J.H. Luscombe and G.A. Frazier, "Coupled Quantum-Well Field-Effect Resonant-Tunneling Transistor for Multi-Valued Logic Memory Applications," *IEEE Transactions on Electron Devices*, vol. 41, no. 2, p. 132-37 (1994).
119. J.N. Randall, J.H. Luscombe and R.T. Bate, "Quantum Dot Devices," in *Heterostructure and Quantum Devices*, edited by W.R. Frensley and N.G. Einspruch (Academic Press, New York 1994), p. 419-445.
120. T.S. Moise, A.C. Seabaugh, A.H. Taddiken, J.H. Luscombe, Y.C. Kao, E.A. Beam, and G.A. Frazier, "Resonant-Tunneling Transistors and Circuits," Government Microcircuit Applications Conference (GOMAC), *19th Edition of the Digest of Technical Papers*, p. 31-4 (1994)
121. J.H. Luscombe, "Modeling Bloch Oscillations," *Proceedings of the International Semiconductor Device Research Symposium*, vol. 3, p. 683 (1995).
122. Y.-C. Kao, H.-Y. Liu, A.C. Seabaugh and J.H. Luscombe, "Rotation Induced Superlattice," U.S. Patent No. 5,415,128 (May 16, 1995).
123. J.H. Luscombe, "Modeling Bloch Oscillations," International Semiconductor Device Research Symposium, Charlottesville, VA, December 5-8, 1995. Invited talk
124. J.H. Luscombe, "Nonequilibrium Structure Factors for Diffusive Surface Disorder," Iowa State University, Ames, IA, September 25, 1995.

125. J.H. Luscombe, "Use of Supercomputers in Nanoelectronic Modeling," Texas Instruments, Inc., Dallas, TX, October 10, 1995. Invited talk
126. J.H. Luscombe, M. Luban and J.P. Reynolds, "Finite-Size Scaling of the Glauber Model of Critical Dynamics," Meeting of the American Physical Society, March 18-22, 1996, St. Louis, MO, *Bulletin of the American Physical Society*, Vol. 41, p. 611 (1996).
127. J.H. Luscombe and M. Luban, "Nonequilibrium Structure Factor for Diffusive Kinetics: New Predictions for Disordering," Meeting of the American Physical Society, March 18-22, 1996, St. Louis, MO, *Bulletin of the American Physical Society*, Vol. 41, p. 776 (1996).
128. J.H. Luscombe and M. Luban, "Nonequilibrium Structure Factor for Conserved-Spin Dynamics: Abrupt Temperature Increase," Meeting of the American Physical Society, March 18-22, 1996, St. Louis, MO.
129. J.H. Luscombe, M. Luban and J.P. Reynolds, "Finite-Size Scaling of the Glauber Model of Critical Dynamics," *Physical Review E*, vol. 53, no. 6, part A, p. 5852-60 (1996).
130. J.H. Luscombe and M. Luban, "Nonequilibrium Structure Factor for Conserved-Spin Dynamics: Abrupt Temperature Increase," *Physical Review E*, vol. 54, no. 3, p.2266-90 (1996).
131. J.H. Luscombe and M. Luban, "Nonequilibrium Structure Factor for the Disordering of Adsorbed Monolayers," *Surface Science*, vol. 365, no. 3, L676-L680 (1996).
132. J.H. Luscombe, "Physical Limits of Computing Technology," Naval Postgraduate School, Monterey, CA, January 10, 1997 Invited talk
133. J.H. Luscombe, M. Luban and F. Borsa, "Classical Heisenberg Model of a Ring Nanostructure: Correlation Functions and Susceptibility," Meeting of the American Physical Society, March 17-21, 1997, Kansas City, MO, *Bulletin of the American Physical Society*, Vol. 42, p. 258 (1997).
134. J.P. Reynolds, M. Luban and J.H. Luscombe, "Long-Lived Quasi-Periodic Bloch Oscillations by Spatially Selective Photoexcitation," Meeting of the American Physical Society, March 17-21, 1997, Kansas City, MO, *Bulletin of the American Physical Society*, Vol. 42, p. 607 (1997).
135. F. Borsa, Z. Jang, A. Shastri, M. Luban, A. Lascialfari, D. Gatteschi and J.H. Luscombe, "Proton Spin-Lattice Relaxation and Spin Dynamics in Magnetic Molecular Clusters," Meeting of the American Physical Society, March 17-21, 1997, Kansas City, MO, *Bulletin of the American Physical Society*, Vol. 42, p. 731 (1997).

136. J.H. Luscombe and M. Luban, "Wave-vector-dependent Magnetic Susceptibility of Classical Heisenberg Rings," *Journal of Physics: Condensed Matter*, vol. 9, no. 32, p. 6913-20 (1997).
137. J.H. Luscombe, "Nanoelectronic Device Modeling," Analatom, Inc., Sunnyvale, CA, July 16, 1997.
138. M. Luban, J.P. Reynolds, and J.H. Luscombe, "Enhanced Lifetimes of Bloch Oscillations by Spatially Selective Photoexcitation," *Proceedings of the International Semiconductor Device Research Symposium*, vol. 4, p. 533-537 (1997).
139. J.H. Luscombe, "Nano-Scale Electronics for the 21st Century," Innovation and Defense Technology 2020, Pacific Grove, CA, December 1-4, 1997. Invited talk
140. M. Luban, J.P. Reynolds, and J.H. Luscombe, "Enhanced Lifetimes of Bloch Oscillations by Spatially Selective Photoexcitation," International Symposium on Semiconductor Device Research, Charlottesville, VA, December 7-11, 1997.
141. J.H. Luscombe, M. Luban and J.P. Reynolds, "Variational Tight-Binding Theory of Excitons in Compositionally Modified Semiconductor Superlattices," Meeting of the American Physical Society, March 16-20, 1998, Los Angeles, CA, *Bulletin of the American Physical Society*, Vol. 43, p. 232 (1998).
142. M. Luban, Z. Jang, and J.H. Luscombe, "Proton Spin-Lattice Relaxation Rate for Magnetic Molecular Ring Clusters," Meeting of the American Physical Society, March 16-20, 1998, Los Angeles, CA, *Bulletin of the American Physical Society*, Vol. 43, p. 218 (1998).
143. J.H. Luscombe, "Nano-scale Electronics for the 21st Century," California State University at Long Beach, Long Beach, CA, March 16, 1998. Invited talk
144. M. Luban and J.H. Luscombe, "Dynamical Localization of Electrons in Aperiodic Superlattices," *Physical Review B*, vol. 57, no. 15, p. 9043-49 (1998).
145. J.H. Luscombe and M. Luban, "Classical Heisenberg Model of Magnetic Molecular Ring Clusters: Accurate Approximants for Correlation Functions and Susceptibility," *Journal of Chemical Physics*, vol. 108, no. 17, p. 7266-73 (1998).
146. J.H. Luscombe and M. Luban, "Simplified Recursive Algorithm for Wigner $3j$ - and $6j$ -Symbols," *Physical Review E*, vol. 57, no. 6, p. 7274-77 (1998).

147. M. Luban, J.P. Reynolds, and J.H. Luscombe, "Variational Tight-Binding Theory of Excitons in Compositionally Modified Semiconductor Superlattices," *Superlattices and Microstructures*, vol. 25, no. 3, p. 493-503 (1999).
148. O. Ciftja, M. Luban, M. Auslender, and J.H. Luscombe, "Equation of State and Spin Correlation Functions of Ultra-Small Classical Heisenberg Magnets," *Physical Review B*, vol. 60, no. 13, p. 10122-10133 (1999).
149. M. Luban and J.H. Luscombe, "Equilibrium Time Correlation Functions and the Dynamics of Fluctuations," *American Journal of Physics*, vol. 67, no. 12, p. 1161 - 69 (1999).
150. J.H. Luscombe, Review of "A Modern Course in Statistical Physics," by L.E. Reichl, *American Journal of Physics*, vol. 67, no. 12, p. 1285 - 1287, (1999).
Invited book review .
151. J.H. Luscombe, "Electron Mischief in Flatland: The Quantum Hall Effect," Naval Postgraduate School, Monterey, CA, January 15, 1999. Invited talk
152. J.H. Luscombe, "Quantum Mechanics of Nanotechnology," meeting of the American Association of Physics Teachers, Monterey, CA, October 26, 2001.
Invited talk
153. J.H. Luscombe, "Quantum Computing Technology: Fantasy or the Future?," Ft. Meade, Maryland, February 7, 2002. Invited talk.
154. J.H. Luscombe and C.L. Frenzen, "Depletion in Semiconductor Nanostructures," *Solid State Electronics*, accepted (2002)