

Curriculum Vitae

I. Personal

Born: 5/15/52, St. Louis, Missouri, USA.

II. Education

Ph.D. in Physics - University of California, Berkeley, 1980

A.B. - Oberlin College, 1974; Highest Honors in Physics, Phi Beta Kappa.

III. Employment

California Institute of Technology, Frank J. Roshek Professor of Physics and Applied Physics, 2004 – present

California Institute of Technology, Frank J. Roshek Professor of Physics, 2004 – 2005

California Institute of Technology, Professor of Physics, 1996 – 2004.

AT&T Bell Laboratories, Murray Hill - Member of Technical Staff, 1985 - 1996.

AT&T Bell Laboratories, Murray Hill - Postdoctoral Member of Technical Staff, 1983 – 1985.

Assistant Professor of Physics, Williams College, 1980 - 1985.

IV. Professional Honors and Activities

Oliver E. Buckley Prize, American Physical Society, 2007

National Academy of Sciences, elected 2005

Morris Loeb Lecturer, February 2003, Harvard University

ASCIT Excellence in Teaching Award, May 2003

AT&T Bell Laboratories Distinguished Member of Technical Staff, 1993

Fellow of the American Physical Society, 1992

National Research Council Board on Physics and Astronomy, 2009-present

Executive Advisory Board, Kavli Institute of Theoretical Physics, 2010-present

National Research Council Committee on 2010 Decadal Survey of Condensed Matter Physics

Member-at-Large, Executive Committee, APS Division of Condensed Matter Physics

Solid States Sciences Committee of the National Research Council, 2000-2003 & 2004-2007.

Mentor of 2002 APS Apker Award winner Kathryn Todd.

National Research Council Associateships Program Evaluation Panel, 2001-2006.

National Research Council Panel on Assessment of NIST Programs 1996-1999.

V. General Area of Research

Experimental Condensed Matter Physics at Low Temperatures: Transport and Thermodynamics of Low Dimensional Electronic Systems, Correlated Electron Systems in High Magnetic Fields, Physics of Semiconductor Heterostructures and Quantum Wells, etc.

VI. Patent

“Apparatus for Contacting Closely Spaced Quantum Wells and Resulting Devices” U.S. Patent 5,241,190. Issued Aug. 31, 1993. Co-inventor L.N. Pfeiffer.

VII. Recent Invited Talks

2011

1. “Exciton Transport and the Quantum Hall Effect”, World of Hall Physics, ICQM Peking University, Beijing (June; unable to present talk due to family emergency).
2. “Exciton Transport and the Quantum Hall Effect”, Quantum Phenomena in Graphene, Other Low Dimensional Materials, And Optical Lattices, Ettore Majorana, Erice, August 2011
3. Departmental Colloquia at McGill University, Purdue University, Michigan State University.

2010

1. “New Electron Correlation Phenomena in the $N=1$ Landau Level”, QHE@30 Workshop, University of Minnesota (May).
2. “Spin and Pseudospin in Quantum Hall Bilayers: Phase Diagram at $\nu = 1$ ”, National High Magnetic Field Laboratory, Tallahassee (April).
3. Departmental Colloquia at University of Wisconsin, University of Waterloo.

2009

1. “Exciton Condensation in Bilayer Quantum Hall Systems”, Electronic/Optical Coherence in Low Dimensional Semiconductors and Atomic Gases, Cambridge-ITAP Workshop, Turunc Marmaris, Turkey (September).
2. “Exciton Condensation in Bilayer Quantum Hall Systems” and “Spin Configuration of 2D Electrons at High Magnetic Field”, Frontiers of Quantum Transport and Quantum Computation Huangshan, China (September).
3. Departmental Colloquia at UC Berkeley, Pennsylvania State University, Florida State University.

2008

1. “Edge State Heat Transport in the Quantum Hall Regime”, 18th International Conference on High Magnetic Fields in Semiconductor Physics and Nanotechnology, Sao Pedro, Brasil (August).
2. “Edge State Heat Transport in the Quantum Hall Regime”, Banff Workshop on Topological Quantum Computation, Banff (July).
3. “Beyond the Quantum Hall Effect”, series of four lectures at School on Low Dimensional Nanoscopic Systems, Harish Chandra Research Institute, Allahabad, India (January).
4. Departmental Colloquia at UC Irvine, CSU Long Beach.

2007

1. “BCS Quantum Hall States”, BCS@50 Workshop, Urbana (October).
2. “Bose Condensation, Superfluidity, and the Quantum Hall Effect”, University of Southern California (October).
3. “Beyond the Quantum Hall Effect”, Einstein Colloquium, Weizmann Institute, Israel (May).
4. “Emergent Phenomena in 2D Electron Systems”, Inaugural Symposium at the Joint Quantum Institute, NIST and University of Maryland (March).
5. “Beyond the Quantum Hall Effect”, March APS Meeting, Denver.

6. “Exciton Condensation in Bilayer Quantum Hall Systems”, Workshop on Quantum Hall Effects, International Center for Condensed Matter Physics, Brasilia (February).

2006

1. “Electrons in Two-Dimensions”, Lecture in Honor of Daniel Tsui, Institute of Physics, Chinese Academy of Sciences, Beijing (September).
2. “Exciton Condensation in Bilayer 2D Electron Systems”, Institute of Physics, Chinese Academy of Sciences, Beijing (September).
3. “Correlated 2D Electrons at High Magnetic Field: Spin and Pseudo-Spin”, 17th International Conference on High Magnetic Fields in Semiconductor Physics Würzburg, Germany, (August).
4. “Bose Condensation, Superfluidity, and the Quantum Hall Effect”, Duke University (January).

VIII. Publications

1. “Quantum Hall Effect and Semimetallic Behavior of Dual-Gated ABA Trilayer Graphene”, E.A. Henriksen, D. Nandi, and J.P. Eisenstein, arXiv:1109.2385v1.
2. “Evidence for a Fractionally Quantized Hall State with Anisotropic Longitudinal Transport”, Jing Xia, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Nature Physics* (in press, doi:10.1038/nphys2118).
3. “Exciton Transport and Andreev Reflection in a Bilayer Quantum Hall System”, Aaron Finck, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **106**, 236807 (2011).
4. “Tilt-Induced Anisotropic to Isotropic Phase Transition at $\nu = 5/2$ ”, Jing Xia, Vaclav Cvicek, J.P. Eisenstein, L.N. Pfeiffer, K.W. West, *Phys. Rev. Lett.* **105**, 176807 (2010).
5. “Measurement of the Electronic Compressibility of Bilayer Graphene”, E.A. Henriksen and J.P. Eisenstein, *Phys. Rev. B* **82**, 041412(R) (2010).
6. “Thermopower of Two-Dimensional Electrons at Filling Factors $\nu = 3/2$ and $5/2$ ”, W.E. Chickering, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. B* **81**, 245319 (2010).
7. “Quantum Hall Exciton Condensation at Full Spin Polarization”, A.D.K. Finck, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **104**, 016801 (2010).
8. “Hot-Electron Thermocouple and the Diffusion Thermopower of Two-Dimensional Electrons in GaAs W.E. Chickering, J.P. Eisenstein, J.L. Reno, *Phys. Rev. Lett.* **103**, 046807 (2009).
9. “Observation of Chiral Heat Transport in the Quantum Hall Regime”, G. Granger, J.P. Eisenstein, J.L. Reno, *Phys. Rev. Lett.* **102**, 086803 (2009).
10. “Charge Imbalance and Bilayer 2D Electron Systems at $\nu_T = 1$ ”, A.R. Champagne, A.D.K. Finck, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **78**, 205310 (2008).
11. “Area Dependence of Interlayer Tunneling in Strongly Correlated Bilayer 2D Electron Systems at $\nu_T = 1$ ”, A.D.K. Finck, A.R. Champagne, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **78**, 075302 (2008).
12. “Evidence for a Finite Temperature Phase Transition and Phase Competition in a Bilayer 2D Electron System”, A.R. Champagne, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **100**, 076803 (2008).
13. “Quantum Lifetime of Two-Dimensional Holes”, J.P. Eisenstein, D. Syphers, L.N. Pfeiffer and K.W. West, *Solid State Commun.* **143**, 365 (2007).
14. “Spin Transition in the Half-filled Landau Level”, L.A. Tracy, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **98**, 086801 (2007).
15. “Resistively-Detected NMR in a Two-Dimensional Electron System near $\nu = 1$: Clues to the Origin of the Dispersive Lineshape”, L.A. Tracy, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. B* **73**, 121306(R) (2006).
16. “Surface Acoustic Wave Propagation and Inhomogeneities in Low-Density Two-Dimensional Electron Systems near the Metal-Insulator Transition” L.A. Tracy, J.P. Eisenstein, M.P. Lilly, L.N. Pfeiffer and K.W. West, *Solid State Commun.* **137**, 150 (2005).

17. “Spin Transition in Strongly Correlated Bilayer Two Dimensional Electron Systems”, I.B. Spielman, L.A. Tracy, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **94**, 076803 (2005).
18. “Bose-Einstein Condensation of Excitons in Bilayer Electron Systems”, J.P. Eisenstein and A.H. MacDonald, *Nature* **432**, 691 (2004).
19. “Half Full or Half Empty?”, J.P. Eisenstein, *Science* **305**, 950 (2004)
20. “Onset of Interlayer Phase Coherence in a Bilayer Two-Dimensional Electron System: Effect of Layer Density Imbalance”, I.B. Spielman, M. Kellogg, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. B* **70**, 081303(R) (2004).
21. “Vanishing Hall Resistance at High Magnetic Field in a Double Layer Two-Dimensional Electron System”, M. Kellogg, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **93**, 036801 (2004).
22. “Metastable Resistance Anisotropy Orientation of Two-Dimensional Electrons in High Landau Levels”, K.B. Cooper, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **92**, 026806 (2004).
23. “Evidence for spontaneous interlayer phase coherence in a bilayer quantum Hall exciton condensate”, J.P. Eisenstein, *Solid State Commun.* **127**, 123 (2003).
24. “Bilayer Quantum Hall Systems at $\nu_T = 1$: Coulomb Drag and the Transition from Weak to Strong Interlayer Coupling”, M. Kellogg, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **90**, 246801 (2003).
25. “Observation of narrow-band noise accompanying the breakdown of insulating states in high Landau levels”, K.B. Cooper, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **90**, 226803 (2003).
26. “Resistivity of dilute 2D electrons in an undoped GaAs heterostructure”, M.P. Lilly, J.L. Reno, J.A. Simmons, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer, K.W. West, E.H. Hwang, and S. Das Sarma, *Phys. Rev. Lett.* **90**, 056806 (2003) .
27. “Evidence for $2k_F$ Electron-Electron Scattering Processes in Coulomb Drag”, M. Kellogg, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Solid State Commun.* **123**, 515 (2002).
28. “Observation of Quantized Hall Drag in a Strongly Correlated Bilayer Electron System”, M. Kellogg, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **88**, 126804 (2002).
29. “Onset of Anisotropic Transport of Two-dimensional Electrons in High Landau Levels: Possible Isotropic-to-Nematic Liquid Crystal Phase Transition”, K.B. Cooper, M.P. Lilly, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **65**, 241313(R) (2002).
30. “Insulating and Fractional Quantized Hall States in the First Excited Landau Level”, J.P. Eisenstein, K.B. Cooper, L.N. Pfeiffer and K.W. West, *Phys. Rev. Lett.* **88**, 076801 (2002).
31. “An All-Cryogenic Cyclotron Resonance Spectrometer”, P.J. Burke, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Rev. Sci. Instr.* **73**, 130 (2002).
32. “Observation of a Linearly Dispersing Goldstone Mode in a Quantum Hall Ferromagnet”, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **87**, 036803 (2001).

33. “The Quantum Hall Effect Branches Out”, J.P. Eisenstein, *Physics World* **14**, 30 (2001).
34. “An Investigation of Orientational Symmetry-Breaking Mechanisms in High Landau Levels”, K.B. Cooper, M.P. Lilly, J.P. Eisenstein, T. Jungwirth, L.N. Pfeiffer and K.W. West, *Solid State Commun.* **119**, 89 (2001).
35. “Experimental Signatures of Broken Symmetries in the Quantum Hall Regime”, J.P. Eisenstein, Proc. 25th Int. Conf. Phys. Semicond., Osaka 2000, edited by N. Miura and T. Ando (Springer, Berlin, 2001).
36. “Two-dimensional electrons in excited Landau levels: evidence for new collective states”, J.P. Eisenstein, *Solid State Commun.* **117**, 123 (2001).
37. “Resonantly Enhanced Tunneling in a Double Layer Quantum Hall Ferromagnet”, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **84**, 5808 (2000).
38. “Kinetic Inductance of the Two-Dimensional Electron Gas”, P.J. Burke, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer, and K. W. West, *Appl. Phys. Lett.* **76**, 745 (2000).
39. “New Physics in High Landau Levels”, J.P. Eisenstein, Proc. 13th Int. Conf. on the Electronic Properties of Two-Dimensional Systems, Ottawa, 1999.
40. “Insulating Phases in High Landau Levels: Observation of Sharp Thresholds to Conduction”, K.B. Cooper, M.P. Lilly, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **60**, R11285 (1999).
41. “Anisotropic Phases of Two-Dimensional Electron Systems in High Landau Levels: Effect of an In-Plane Magnetic Field”, M.P. Lilly, K.B. Cooper, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **83**, 824 (1999).
42. “Evidence for an Anisotropic State of Two-Dimensional Electrons in High Landau Levels”, M.P. Lilly, K.B. Cooper, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **82**, 394 (1999).
43. “Coulomb Drag in the Extreme Quantum Limit”, M.P. Lilly, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **80**, 1714 (1998).
44. “Experimental Studies of Multicomponent Quantum Hall Systems”, J.P. Eisenstein, in *Perspectives in Quantum Hall Effects*, edited by S. Das Sarma and A. Pinczuk, (John Wiley, New York, 1997).
45. “Double Layer Two Dimensional Electron Systems at High Magnetic Field”, J.P. Eisenstein, *Brazilian Journal of Physics* **26**, 68 (1996).
46. “Experimental Studies of Multi-component Quantum Hall Systems”, J.P. Eisenstein, in *New Perspectives in the Quantum Hall Effect*, edited by S. Das Sarma and A. Pinczuk, (John Wiley and Sons, New York, 1996).
47. “Observation of many-body interactions of electrons in coupled double quantum wells”, A.S. Plaut, A. Pinczuk, B.S. Dennis, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **362**, 158 (1996).
48. “Light-scattering determination of electron tunneling gaps in double quantum wells”, A.S. Plaut, A. Pinczuk, B.S. Dennis, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Solid State Electronics*, **40**, 291 (1996).
49. “Evidence for Skyrmions and Single Spin Flips in the Integer Quantized Hall Effect”, A. Schmeller, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **75**, 4290 (1995).

50. "Lifetime of Two-Dimensional Electrons Measured by Tunneling Spectroscopy", S.Q. Murphy, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **52**, 14825 (1995).
51. "Evidence for an Inter-Layer Exciton in Tunneling between Two-Dimensional Electron Systems", J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **74**, 1419 (1995).
52. "Capacitance of Two-Dimensional Electron Systems subject to an In-Plane Magnetic Field", J. Hampton, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Sol. State Commun.* **94**, 559 (1995).
53. "New Physics in Double Layer 2D Electron Systems", J.P. Eisenstein, *11th Int'l. Conf. on High Magnetic Fields in Semiconductor Physics*, edited by D. Heiman, (World Scientific, Singapore, 1995)
54. "Compressibility of the Two-Dimensional Electron Gas: Measurements of the Zero Field Exchange Energy and Fractional Quantum Hall Gap", J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **50**, 1760 (1994).
55. "Many-Body Integer Quantum Hall Effect: Evidence for New Phase Transitions", S.Q. Murphy, J.P. Eisenstein, G.S. Boebinger, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **72**, 728 (1994).
56. "Tunneling between Highly Correlated 2D Electron Systems", J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **305**, 393 (1994).
57. "New Collective Quantum Hall States in Double Quantum Wells", G.S. Boebinger, S.Q. Murphy, J.P. Eisenstein, L.N. Pfeiffer, K.W. West, and Song He, *Surf. Sci.* **305**, 8 (1994).
58. "Separately Contacted Electron-Hole Double-Layer in a GaAs/Al_xGa_{1-x}As Heterostructure" B.E. Kane, J.P. Eisenstein, W. Wegscheider, L.N. Pfeiffer, K.W. West, *Appl. Phys. Lett.* **65**, 3266 (1994).
59. "Evidence for Virtual Phonon Exchange in Semiconductor Heterostructures", T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **47**, 12957 (1993).
60. "The Quantum Hall Effect", J.P. Eisenstein, *Am. J. Phys.* **61**, 179 (1993).
61. "Coulomb Barrier to Tunneling between Parallel Two-Dimensional Electron Systems", J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **69**, 3804 (1992).
62. "New Transport Phenomena in Coupled Quantum Wells", J.P. Eisenstein, *Superlattices and Microstructures* **12**, 107 (1992).
63. "Multiquantum Well Structure with an Average Electron Mobility of 4.0×10^6 cm²/Vs", L.N. Pfeiffer, K.W. West, J.P. Eisenstein, K.W. Baldwin, and P. Gammel, *Appl. Phys. Lett.* **61**, 1211 (1992).
64. "New Fractional Quantum Hall State in Double-Layer Two-Dimensional Electron Systems", J.P. Eisenstein, G.S. Boebinger, L.N. Pfeiffer, K.W. West, and Song He, *Phys. Rev. Lett.* **68**, 1383 (1992).
65. "Negative Compressibility of Interacting Two-Dimensional Electron and Quasiparticle Gases", J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **68**, 674 (1992).
66. "Compressibility of the Interacting Two-Dimensional Electron Gas", J.P. Eisenstein in *Low-Dimensional Electronic Systems*, eds. G. Bauer, F. Kuchar, and H. Heinrich,, vol. 111 Springer Series in Solid State Sciences, (Springer Verlag, Berlin, 1992).
67. "Resonant Tunneling in GaAs/AlGaAs Double Quantum Wells", J.P. Eisenstein, T.J. Gramila, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **267**, 377 (1992).

68. “Electron-Electron Scattering between Parallel Two-Dimensional Gases”, T.J. Gramila, J.P. Eisenstein, A.H. MacDonald, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **263**, 446 (1992).
69. “Resonant Tunneling in Coupled Quantum Wells”, J.P. Eisenstein in *Nanostructures and Mesoscopic Systems*, edited by W.P. Kirk and M.A. Reed, (Academic Press 1992).
70. “Probing a Two-Dimensional Fermi Surface by Tunneling”, J.P. Eisenstein, T.J. Gramila, L.N. Pfeiffer, and K.W. West, *Phys. Rev. B* **44**, 6511 (1991).
71. “Field-Induced Resonant Tunneling between Parallel Two Dimensional Electron Systems”, J.P. Eisenstein, L. N. Pfeiffer, and K. W. West, *Appl. Phys. Lett.* **58**, 1497 (1991).
72. “Mutual Friction between Parallel Two Dimensional Electron Systems”, T. J. Gramila, J.P. Eisenstein, A. H. MacDonald, L. N. Pfeiffer, and K. W. West, *Phys. Rev. Lett.* **66**, 1216 (1991).
73. “Recent Results in Two-Dimensional Electron Correlation at High Magnetic Fields”, J.P. Eisenstein, 20th ICPS Proc., Thessaloniki, Greece, eds. E.M. Anastassakis and J.D. Joannopoulos, (World Scientific, Singapore 1990).
74. “The Fractional Quantum Hall Effect”, J.P. Eisenstein and H.L. Stormer, *Science* **248**, 1461 (1990).
75. “Independently Contacted Two-Dimensional Electron Systems in Double Quantum Wells”, J.P. Eisenstein, L. N. Pfeiffer, and K. W. West, *Appl. Phys. Lett.* **57**, 2324 (1990).
76. “New Condensed States in the Fractional Quantum Hall Effect”, J.P. Eisenstein, in *Localization and Confinement in Semiconductors*, eds. F. Kuchar, H. Heinrich, and G. Bauer, vol. 97 Springer Series in Solid State Sciences, (Springer Verlag, Berlin 1990).
77. “Spin Transition in the $\nu=2/3$ Fractional Quantum Hall Effect”, J.P. Eisenstein, H. L. Stormer, L. N. Pfeiffer, and K. W. West, *Phys. Rev. B*, **41**, 7910 (1990).
78. “Activation Energies for the Even-Denominator Fractional Quantum Hall Effect”, J.P. Eisenstein, R.L. Willett, H.L. Stormer, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **229**, 31 (1990).
79. “Spin-Dependent Properties of the Fractional Quantum Hall Effect at Odd-Denominators”, J.P. Eisenstein, H.L. Stormer, L.N. Pfeiffer, and K.W. West, *Surf. Sci.* **229**, 21 (1990).
80. “Formation of a High-Quality 2-Dimensional Electron Gas on Cleaved GaAs”, L. Pfeiffer, K. W. West, H.L. Stormer, J.P. Eisenstein, K.W. Baldwin, D. Gershoni, J. Spector, *Appl. Phys. Lett.* **56**, 1697 (1990).
81. “Evidence for a Phase Transition in the Fractional Quantum Hall Effect”, J.P. Eisenstein, H.L. Stormer, L.N. Pfeiffer, and K.W. West, *Phys. Rev. Lett.* **62**, 1540 (1989).
82. “The Fractional Quantum Hall Effect at Even Denominators”, J.P. Eisenstein, in *High Magnetic Fields in Semiconductor Physics II*, edited by G. Landwehr, vol. 87 Springer Series in Solid State Sciences, (Springer Verlag, Berlin 1989).
83. “Collapse of the Even-Denominator Fractional Quantum Hall Effect in Tilted Fields”, J.P. Eisenstein, R. Willett, H. L. Stormer, D. C. Tsui, A. C. Gossard, and J. H. English, *Phys. Rev. Lett.* **61**, 997 (1988).
84. “Even-Denominator Fractional Quantum Hall Effect”, R. L. Willett, J.P. Eisenstein, H. L. Stormer, D. C. Tsui, J. H. English, A. C. Gossard, L. N. Pfeiffer, K. W. Baldwin, and K. W. West, *Proceedings 19th Intl. Conf. on Physics of Semiconductors*, Warsaw, Poland, August 15-19, 1988.

85. “Ultra-Low Temperature Behavior of the $\nu=5/2$ Fractional Quantum Hall Effect”, P. L. Gammel, D. J. Bishop, J.P. Eisenstein, J. H. English, A. C. Gossard, R. Ruel, and H. L. Stormer, *Phys. Rev. B* **38**, 10128 (1988).
86. “Thermal Conductance Magneto-Oscillations and Electron-Phonon Coupling in GaAs/AlGaAs Heterostructures”, J.P. Eisenstein, A. C. Gossard, and V. Narayanamurti, *Surf. Sci.* **196**, 445 (1988).
87. “Quantum Oscillations in a Mechanical Resonator Containing a Two-Dimensional Electron System”, P. L. Gammel, D. J. Bishop, J.P. Eisenstein, H. L. Stormer, A. C. Gossard, and J. H. English, *Surf. Sci.* **196**, 417 (1988).
88. “Density of States and Electron-Phonon Coupling in Two-Dimensional Electron Systems at High Magnetic Fields”, J.P. Eisenstein, in *Interfaces, Quantum Wells and Superlattices*, edited by C. R. Leavens and Roger Taylor, (Plenum, New York, 1988).
89. “Observation of an Even-Denominator Quantum Number in the Fractional Quantum Hall Effect”, R. Willett, J.P. Eisenstein, H. L. Stormer, D. C. Tsui, A. C. Gossard, and J. H. English, *Phys. Rev. Lett.* **59**, 1776 (1987).
90. “Quantum Oscillations in the Thermal Conductance of GaAs/AlGaAs Heterostructures”, J.P. Eisenstein, A. C. Gossard, and V. Narayanamurti, *Phys. Rev. Lett.* **59**, 1341 (1987).
91. “Observation of One-Dimensional Second Sound in Superfluid Helium”, J.P. Eisenstein and V. Narayanamurti, *Phys. Rev. Lett.* **57**, 839 (1986).
92. “Quantum Hall Effect Experiments Using Ballistic Phonons”, J.P. Eisenstein, V. Narayanamurti, H. L. Stormer, A. Y. Cho, and J. C. M. Hwang, *Proceedings of 5th Intl. Conf. on Phonon Scattering in Condensed Matter*, Urbana, 1986.
93. “One-Dimensional Second Sound in Superfluid Helium”, J.P. Eisenstein and V. Narayanamurti, *Proceedings of 5th Intl. Conf. on Phonon Scattering in Condensed Matter*, Urbana, 1986.
94. “Quantized Hall Effect and Zero Resistance State in a Three-Dimensional Electron System”, H. L. Stormer, J.P. Eisenstein, A. C. Gossard, K. W. Baldwin, and J. H. English, *Proceedings of Intl. Conf. on Physics of Semiconductors*, Stockholm, 1986.
95. “Density of States of Two-Dimensional Electron Systems at High Magnetic Fields”, J.P. Eisenstein, *Physica Scripta* **T14**, 42 (1986).
96. “Quantization of the Hall Effect in a Three-Dimensional Electronic System”, H. L. Stormer, J.P. Eisenstein, W. Wiegmann, and K. Baldwin, *Phys. Rev. Lett.* **56**, 85 (1986).
97. “Magnetization and Density of States of the 2D Electron Gas in GaAs/AlGaAs Heterostructures”, J.P. Eisenstein, H. L. Stormer, V. Narayanamurti, A. Y. Cho, and A. C. Gossard, *Surf. Sci.* **170**, 271 (1986).
98. “Density of States and de Haas-van Alphen Effect in Two-Dimensional Electron Systems”, J.P. Eisenstein, H. L. Stormer, V. Narayanamurti, A. Y. Cho, A. C. Gossard, and C. W. Tu, *Phys. Rev. Lett.* **55**, 875 (1985).
99. “High Precision de Haas-van Alphen Measurements on a Two-Dimensional Electron Gas”, J.P. Eisenstein, H. L. Stormer, V. Narayanamurti, and A. C. Gossard, *Superlattices and Microstruc.* **1**, 11 (1985).
100. “High-Precision Torsional Magnetometer: Application to Two-Dimensional Electron Systems”, J.P. Eisenstein, *Appl. Phys. Lett.* **46**, 695 (1985).

101. “Effect of Inversion Symmetry on the Band Structure of Semiconductor Heterostructures”, J.P. Eisenstein, H. L. Stormer, V. Narayanamurti, A. C. Gossard, and W. Wiegmann, *Phys. Rev. Lett.* **53**, 2579 (1984).
102. “Flow Dissipation in B-Phase U-Tube Experiments”, J.P. Eisenstein, in *Quantum Fluids and Solids-1983*, edited by E. D. Adams and G. G. Ihas, AIP Conf. Proceedings, No. 103.
103. “Observation of Flow Dissipation in Superfluid 3-He-B”, J.P. Eisenstein and R. E. Packard, *Phys. Rev. Lett.* , **49**, 564 (1982).
104. “Magnetic Distortions of Flowing Superfluid ^3He ”, J.P. Eisenstein, G.W. Swift, and R.E. Packard, *Physica*, **108**, 799 (1981).
105. “Quasiparticle Mean Free Path and Poiseuille Flow in Normal Liquid ^3He ”, J.P. Eisenstein, G.W. Swift, and R.E. Packard, *Physica*, **108**, 1061 (1981).
106. “Measurement of Anisotropy in the Dielectric Constant of 3-He-A”, G. W. Swift, J.P. Eisenstein, and R. E. Packard, *Phys. Rev. Lett.*, **45**, 1955 (1980).
107. “Influence of a Magnetic Field on Flowing Superfluid 3-He”, J.P. Eisenstein, G. W. Swift, and R. E. Packard, *Phys. Rev. Lett.*, **45**, 1569 (1980).
108. “Effect of the Quasiparticle Mean Free Path on Poiseuille Flow in Normal Liquid 3-He”, J.P. Eisenstein, G. W. Swift, and R. E. Packard, *Phys. Rev. Lett.*, **45**, 1199 (1980).
109. “Observations of a Critical Current in Superfluid 3-He-B”, J.P. Eisenstein, G. W. Swift, and R. E. Packard, *Phys. Rev. Lett.* , **43**, 1676 (1979).
110. “A Microprocessor Controller for a Nuclear Demagnetization Refrigerator”, J.P. Eisenstein, G. W. Swift, and R. E. Packard, *Cryogenics* , **19**, 668 (1979).
111. “8080 Program Computes 32-by-16-bit Quotient”, G. W. Swift and J.P. Eisenstein, *Electronics* , **52**, 143 (1979).
112. “Atomic Beam Study of the 5-min Solar Wavelength Oscillations”, J. L. Snider, J.P. Eisenstein, and G. R. Otten, *Solar Physics*, **36**, 303 (1974).

IX. Current Research Group and Funding Sources

Graduate Students:

1. **Debaleena Nandi**
2. **William Chickering**

Postdoctoral Associates:

1. **Erik Henriksen** Ph.D. Columbia 2008
2. **Trupti Khaire** Ph.D. Michigan State 2010

Funding:

1. National Science Foundation
2. Department of Energy
3. Microsoft Corporation

X. Former Graduate Students and Postdoctoral Associates

Graduate Students:

1. **Aaron Finck** Caltech Ph.D. 2011 Postdoc at U. Illinois, Urbana-Champaign.
2. **Lisa A. Tracy** Caltech Ph.D. 2007 Member of Technical Staff, Sandia National Laboratories, Albuquerque, NM.
3. **Melinda J. Kellogg** Caltech Ph.D. 2004 Assistant Professor, University of Virginia, College at Wise.
4. **Ian B. Spielman** Caltech Ph.D. 2004 Fellow, Joint Quantum Institute, NIST and University of Maryland.
5. **Kenneth B. Cooper** Caltech Ph.D. 2003 Research Scientist, Jet Propulsion Laboratory, Pasadena, CA.

Postdoctoral Associates:

1. **Jing Xia** Caltech 2008-2011 Asst. Prof. of Physics, UC Irvine
2. **Ghislain Granger** Caltech 2005-2008 Member of Technical Staff, National Research Council of Canada.
3. **Alexandre Champagne** Caltech 2005-2008 Asst. Prof. of Physics, Concordia University, Montreal, Quebec.
4. **Joseph A. Bonetti** Caltech 2003-2005 Research Scientist, Jet Propulsion Laboratory, Pasadena, CA.
5. **Peter J. Burke** Caltech 1998-2001 Prof. of Electrical Engineering and Computer Science, UC Irvine.
6. **Michael P. Lilly** Caltech 1997-2000 Member of Technical Staff, Sandia National Laboratories, Albuquerque, NM.
7. **Andreas Schmeller** Bell Labs 1994-1995 Screen writer, Germany

8. **Sheena Murphy** Bell Labs 1992-1994 Assoc. Prof. of Physics, University of
Oklahoma, Norman.
9. **Thomas J. Gramila** Bell Labs 1990-1992 Associate Professor of Physics, Ohio
State University, Columbus, OH.