

May 2011

CURRICULUM VITAE

PERSONAL PARTICULARS

Name: Richard Henry Price
Citizenship: U.S.A.
Birthdate: March 1, 1943
Location: New York

EDUCATION

1960–1965 Cornell University, B.S., Engineering Physics, June 1965.
1965–1971 California Institute of Technology, Ph.D., June 1971.
Thesis Title: “Nonspherical Perturbations of Relativistic Gravitational Collapse.”

POSITIONS HELD

Summer 1964 Researcher in Applied Physics, Corning Glass Works.
Summer 1965 Researcher in Applied Physics, Cornell Aero Laboratories.
1966–1970 Teaching Associate, California Institute of Technology.
1969–1970 Research Associate, California Institute of Technology.
4/71-9/71 Research Fellow, California Institute of Technology.
1971–1975 Assistant Professor, University of Utah.
1975–1979 Associate Professor, University of Utah.
1979–2004 Professor, University of Utah.
1982–83 Visiting Associate, California Institute of Technology.
1985–present Consultant to Center for Engineering Design, University of Utah.
1987–1995 Adjunct Professor of Mechanical Engineering, University of Utah.
2003–present Adjunct Professor of Physics, Louisiana State University.
2005–present Adjunct Professor of Physics, University of Texas at Dallas.
2004–present Professor of Physics, University of Texas at Brownsville.

RESEARCH INTERESTS

Gravitation theory and relativistic astrophysics. Black holes. Gravitational radiation. Applied Mathematics. Interdisciplinary research. Science education. Microelectromechanical devices.

PUBLICATIONS

R. H. Price and K. S. Thorne, “Nonradial Pulsation of General-Relativistic Stellar Models. II. Properties of the Gravitational Waves,” *Astrophysical Journal*, **155**, 163 (1969).
Richard H. Price, “Nonspherical Perturbations of Relativistic Gravitational Collapse. I. Scalar and Gravitational Perturbations,” *Phys. Rev. D***5**, 2419 (1972).

- “Nonspherical Perturbations of Relativistic Gravitational Collapse. II. Integer-Spin, Zero-Rest-Mass Perturbations,” *Phys. Rev. D* **5**, 2439 (1972).
- “Gravitational Collapse,” *McGraw-Hill Yearbook of Science & Technology of 1972*. McGraw-Hill Inc., 1972), pp. 231–233.
- “Gravitational Radiation from a Particle Falling Radially into a Schwarzschild Black Hole,” (with Davis, Press & Ruffini), *Phys. Rev. Letters* **27**, 1466 (1972).
- “On the Nature of Gravitational Synchrotron Radiation,” (with D.M. Chitre), *Phys. Rev. Letters* **29**, 185 (1972).
- “Electromagnetic Radiation from an Unmoving Charge,” (with D.M. Chitre and Vernon Sandberg), *Phys. Rev. Letters* **31**, 1018 (1973).
- “The Role of Constraining Forces for Ultra-Relativistic Particle Motion as a Source of Gravitational Radiation,” (with Vernon Sandberg), *Phys. Rev. D* **8**, 1640 (1973).
- “Electromagnetic Radiation Due to Spacetime Oscillations,” (with D.M. Chitre and Vernon Sandberg), *Phys. Rev. D* **11**, 747 (1975).
- Problem Book in Relativity and Gravitation*, (with Lightman, Press and Teukolsky), (Princeton University Press, 1975).
- “Gravitational Collapse,” *McGraw-Hill Yearbook of Science & Technology of 1975*. (McGraw-Hill Inc., 1975).
- “Cygnus X-1: An Interpretation of the Spectrum and its Variability,” (with Kip S. Thorne), *Astrophys. J.* **195**, L101 (1975).
- “Accretion Disk Coronas and Cygnus X-1,” (with E.P.T. Liang), *Astrophys. J.* **218**, 247 (1977).
- “A Paradox and Resolution in Electrostatics,” (with James Ball), *Am. J. Phys.* **45**, 645 (1977).
- “Accretion Onto Pregalactic Black Holes,” (with James Ipser), *Astrophys. J.* **216**, 579 (1977).
- C. T. Cunningham, R. H. Price, and V. Moncrief, “Radiation from Collapsing Relativistic Stars. I. Linearized Odd-Parity Radiation,” *Astrophys. J.* **224**, 643–667 (1978).
- “The Spectrum of Radiation at Low Frequencies,” (with R.J. Bontz), *Astrophys. J.* **228**, 560 (1979).
- “Radiation from Collapsing Relativistic Stars. II. Linearized Even-Parity Radiation,” (with C.T. Cunningham and V. Moncrief) *Astrophys. J.* **230**, 870 (1979).
- “Radiation from Slightly Nonspherical Models of Gravitational Collapse” (with C.T. Cunningham and V. Moncrief) “Sources of Gravitational Radiation,” editor: L. Smarr (Cambridge University Press, 1979).
- “Radiation from Collapsing Relativistic Stars. III. Second Order Perturbations of collapse with Rotation,” (with C.T. Cunningham and V. Moncrief) *Astrophys. J.* **236**, 674 (1980).
- “Implications of the Deviations in the Spectrum of the Cosmic Background Radiation,” (with R.J. Bontz and M.P. Haugan) *Astrophys. J.* **246**, 592 (1981).
- “Synchrotron Radiation from Spherically Accreting Black Holes,” (with James Ipser) *Astrophys. J.* **225**, 654 (1982).
- “Event Horizon Area in a Slowly Changing Weyl Geometry,” (with B.E. Brumbaugh) *Can. J. Phys.* **60**, 1155 (1982).

- “A General Relativity Primer,” *Amer. J. Phys.* **50**, 300 (1982).
- “Comptonization Effects in Spherical Accretion onto Black Holes,” (with James Ipser) *Astrophys. J.* **267**, 371 (1983).
- “Formation of Population III Stars and Galaxies with Primordial Planetary Mass Black Holes,” with K. Freese and D.N. Schramm, *Astrophys. J.* **275**, 405 (1983).
- “Pair Production in Spherical Accretion onto Black Holes,” (with A.L. Schultz) *Astrophysical Journal* **291**, 1 (1985).
- “The Lightning Rod Fallacy,” (with R.J. Crowley) *Amer. J. Phys.* **53**, 834 (1985).
- Black Holes: The Membrane Paradigm (with K.S. Thorne and D.A. Macdonald), (Yale University Press, 1986).
- “The Membrane Viewpoint on Black Holes: Properties and Evolution of the Stretched Horizon,” (with K.S. Thorne) *Phys. Rev. D***33**, 915 (1986).
- “The Membrane Paradigm: Gravitational Perturbations,” (with W.-M. Suen, I.H. Redmount). *Phys. Rev. D***37**, 2761 (1988).
- “The Physics of Black Holes: in the Proceedings of the Japan-U.S. Seminar on Compact Galactic and Extragalactic X-Ray Sources, eds. Y. Tanaka and W.H.G. Lewin (Institute of Space and Astronautical Science; Tokyo, 1985).
- “The Impossibility of a Simple Derivation of the Schwarzschild Metric,” (with R.P. Gruber, S.M. Matthews, W.R. Cordwell, and L.F. Wagner) *Am. J. Phys.* **56**, 265 (1988).
- “Magnetic Fields Around Black Holes,” Cargese Workshop on Magnetic Fields and Extragalactic Objects, June 1987, pp. 207–222.
- S. C. Jacobsen, P. S. Khanwilkar, and R. H. Price “Oscillatory Stabilization of Micromechanical Systems,” *Proc. IEEE MicroRobots and Teleoperators Workshop*, November 1987.
- “The Excitation of Quasinormal Ringing of a Schwarzschild Black Hole,” (with Y. Sun) *Phys. Rev. D***38**, 1040 (1988)
- Richard H. Price and Kip S. Thorne, “The Membrane Paradigm for Black Holes,” *Scientific American* **256**, 69 (April 1988).
- “The Modelling of Electrostatic Forces in Small Electrostatic Actuators” (with J. Wood and S. Jacobsen) *Proc. IEEE Solid-State Sensor and Actuator Workshop*, Hilton Head, South Carolina, June 1988.
- “Field-Based Uni-Axial Strain Measurements,” (with S. Jacobsen, N. Clayton, J. Wood, and W. Lee) *Proceedings of the ASME Winter Annual Meeting*, Chicago, IL, November 1988.
- S. C. Jacobsen, R. H. Price, and J. E. Wood, T. H. Rytting, and M. Rafaelof, “A design overview of an eccentric-motion electrostatic microractuator (the wobble motor),” “The Wobble Motor: Design, Fabrication and Testing of an Eccentric-Motion Electrostatic Microactuator,” *Sensors and Actuators*, 20 Nos. 1 & 2, pp. 1–16 (Nov. 1989).
- Richard H. Price, John E. Wood, and Stephen C. Jacobsen, “Modelling Considerations for Electrostatic Forces in Electrostatic Microactuators,” *Sensors and Actuators*, 20 Nos. 1 & 2, pp. 107–114 (Nov. 1989).
- “Field-Based State Sensing in Micro Motion Systems,” (with S. C. Jacobsen, S. A. Jeglinski, J. E. Wood, R. P. Phillips) in the *Proceedings of the Third Toyota Conference on Integrated*

- Micromotion, Micromachining Controls, and Applications, Aichi-ken, Japan, October 22–25, 1989.
- “The Force Between Two Charged Wires,” (with R. Phillips) *Am. J. Phys.* **58**, 534–539 (June 1990).
- “Excitation of Schwarzschild Quasinormal Modes by Collapse,” (with Y. Sun) *Phys. Rev.* **D41**, 2492–2506 (April 1990).
- “Micromotors Split Hairs,” (with S. C. Jacobsen and J. E. Wood) *Potentials Magazine* Vol. 10, February 1991, p.12.
- “Nonradial Pulsations of Stellar Models in General Relativity,” (with J. R. Ipser) *Phys. Rev.* **D43**, 1768 (March 1991).
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- Richard H. Price and James R. Ipser, “Relation of Gauge Formalisms for Pulsations of General Relativistic Stellar Models,” *Phys. Rev.* **D44**, 307–313 (July 1991).
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- “The Conductor Limit of Dielectrics,” *European Journal of Physics* **13**, 95 (March 1992).
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- “Embedding Initial Data for Black Hole Collisions,” (with Joseph Romano) *Classical and Quantum Gravity* **12**, pp. 875–893 (1995).
- Peter Anninos, Richard H. Price, Jorge Pullin, Edward Seidel, and Wai-Mo Suen, “Head-on collision of two black holes: comparison of different approaches,” *Phys. Rev. D* **52**, 4462 (1995).
- Andrew M. Abrahams and Richard H. Price, “Applying black hole perturbation theory to numerically generated spacetimes,” *Phys. Rev. D* **53**, 1963 (1996).
- Andrew M. Abrahams and Richard H. Price, “Black-hole collisions from Brill-Lindquist initial data: predictions of perturbation theory,” *Phys. Rev. D* **53**, 1972 (1996).
- Articles on Mach’s principle, tachyons, gravitational waves, and weightlessness, in “*Macmillan Encyclopedia of Physics*” (Simon&Schuster Macmillan 1996).
- “The Conical Resistor Conundrum: A Potential Solution,” (with Joseph Romano) *American Journal of Physics* **64**, 1150 (September 1996).
- “Analytic approximations to the spacetime of a critical gravitational collapse,” (with J. Pullin) *Phys. Rev. D* **54**, 3792 (September 1996).
- “Paradoxical twins and their special relatives,” (with R. Gruber) *American Journal of Physics* **64**, 1004 (August 1996).
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- Carlos O. Lousto and Richard H. Price, “Head-on collisions of black holes: the particle limit,” *Phys. Rev. D* **55**, 2124–2138 (1997).
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- Carlos O. Lousto and Richard H. Price, “Understanding initial data for black hole collisions,” *Phys. Rev. D* **56**, 6439–6457, (1997).
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- “In-depth problems for collaborative learning,” in the *Proceedings of the International Conference on Undergraduate Physics Education* U. Maryland, July 31–Aug. 3, 1996, (AIP, Woodbury, New York, 1997) p.831.
- “Zero time dilation in an accelerating rocket,” with R. Gruber, *American Journal of Physics*, **65**, 979 (Oct. 1997).
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- “Comment on ‘On the optimal angle of projection in general media,’ by C. W. Groetsch,” (with Joseph Romano) *American Journal of Physics*, **66**, 114 (February 1998).
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- Carlos O. Nicasio, Reinaldo J. Gleiser, Richard H. Price, and Jorge Pullin, “The collision of boosted black holes: second order close limit calculations,” *Phys.Rev. D***59**, 044024 (1999).
- “The Weight of Time” (with I. H. Redmount), *The Physics Teacher*, **36**, 432-434 (1998).
- William Krivan and Richard H. Price, “Initial data for superposed rotating black holes,” *Phys. Rev. D.* **58**, 104003 (1998).
- Reinaldo Gleiser, Carlos Nicasio, Richard Price, Jorge Pullin, “Gravitational radiation from Schwarzschild black holes; the second order perturbation formalism,” *Physics Reports*, **325**, 41-81 (2000).
- Hans-Peter Nollert and Richard H. Price “Quantifying excitations of quasinormal mode system,” *Journal of Mathematical Physics* **40**, pp. 980-1010, (1999).
- William Krivan and Richard H. Price, “Formation of a rotating hole from a close limit head-on collision,” *Phys. Rev. Letters* **82**, 1358–1361 (1999).
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- Gaurav Khanna, John Baker, Reinaldo J. Gleiser, Pablo Laguna, Carlos O. Nicasio, Hans-Peter Nollert, Richard Price, and Jorge Pullin, “Inspiralling black holes: the close limit,” *Phys. Rev. Letters.* **83** pp. 3581-3584 (1999); gr-qc/990508.
- Zeferino Andrade and Richard H. Price, “Excitation of the odd parity quasi-normal modes of compact objects,” *Phys. Rev. D***61**, p. 104037 (1999).
- Alcides Garat and Richard H. Price, “Gauge invariant formalism for second order perturbations of Schwarzschild spacetimes,” *Phys. Rev. D* **61**, p. 044006 (2000).
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- John T. Whelan, William Krivan, and Richard H. Price, “Quasi-stationary binary inspiral II: Radiation balanced boundary conditions,” *Class.Quant.Grav* **17**, 4895-4912 (2000).
- “A circular twin paradox” (with M. Cranor and E. Heider), *American Journal of Physics*, **68**, pp.1016–1020, November 2000.
- Richard H. Price and Elizabeth Grover, “Cosmological expansion in the classroom, “Expand your students’ universe” *American Journal of Physics* **69**, pp.125-128, February 2001.

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- Alcides Garat and Richard H. Price, “Nonexistence of conformally flat slices of the Kerr spacetime” *Phys. Rev. D* **61**, p. 124011 (2000).
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- “Field just outside a long solenoid,” Jason Farley and Richard H. Price, *American Journal of Physics* **69**, 751(2001).
- Richard H. Price and John T. Whelan, “Tidal interaction in binary black hole inspiral,” *Phys. Rev. Lett.* **87**, 231101 (2001).
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- R. H. Price, “Binary inspiral: Finding the right approximation,” in *Spacetime Safari: Essays in Honor of Vincent Moncrief on the Classical Physics of Strong Gravitational Fields* eds. B. Berger and J. Isenberg, *Classical and Quantum Gravity* **21**, S281–S293 (2004). [Selected by the editors as one of the “Research Highlight” papers of 2003/2004.]
- Z. Andrade, C. Beetle, A. Blinov, B. Bromley, L. M. Burko, M. Cranor, R. Owen, and Richard H. Price, “The Periodic Standing-Wave Approximation: Overview and Three Dimensional Scalar Models” *Phys. Rev. D.*, **70** 064001, September 2004; preprint gr-qc/0310001.
- Richard H. Price, “Projectiles, pendula and special relativity” *American Journal of Physics*, **73**, pp. 433-438 (May 2005); Preprint gr-qc/0501023.
- L. M. Burko and R. H. Price, “Ballistic trajectory: parabola, ellipse, or what?” *American Journal of Physics*, **73**, pp. 517-520 (June 2005);
- C. O. Lousto and Richard H. Price, “Radiation content of conformally flat initial data,” *Phys. Rev. D.*, **69**, 087503 (2004). Preprint gr-qc/0401045
- Elsbeth W. Allen, Elizabeth Buckmiller, Lior M. Burko and Richard H. Price, “Radiation tails and boundary conditions for black hole evolutions,” *Phys. Rev. D.*, **70**, 044038 (2004). Preprint gr-qc/0401092.
- Richard H. Price, “Normal forces in stationary spacetimes,” *GRG* **36**, pp. 2171-2173, September 2004. Preprint gr-qc/0401123
- R. H. Price and L. M. Burko, “Late time tails from momentarily stationary, compact initial data in Schwarzschild spacetimes,” *Phys. Rev. D.*, **70**, 084039 (2004).
- Benjamin Bromley, Robert Owen, and Richard H. Price, “The periodic standing-wave approximation: nonlinear scalar fields, adapted coordinates, and the eigenspectral method,” *Phys. Rev. D.*, vol 71, p. 104017 (2005). gr-qc/0502034
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- Richard H. Price “In an expanding universe, what doesn’t expand?” submitted to *American Journal of Physics*, Preprint gr-qc/0508052. In revision.
- Christopher Beetle, Benjamin Bromley, and Richard H. Price, “The periodic standing-wave approximation: eigenspectral computations for linear gravity and nonlinear toy models,” *Phys Rev D* vol 74, 024013 (2006), preprint gr-qc/0602027.
- Stephen R. Lau and Richard H. Price “Multidomain Spectral Method for the Helically Reduced Wave Equation,” *Journal of Computational Physics*, **227**, pp.1126-1161 (2007). preprint gr-qc/0702050.
- Christopher Beetle, Benjamin Bromley, Napoleon Hernandez and Richard H. Price, “The periodic standing-wave approximation: post-Minkowski computations,” *Phys. Rev. D* vol 76, 084016 (2007). preprint gr-qc/0708.1141
- Yasushi Mino and Richard H. Price, “Two-timescale adiabatic expansion of a scalar field model,” *Phys. Rev. D*, **77**, 064001 (2008). arXiv:0801.0179
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- Richard H. Price and Yan Wang, “The transverse traceless gauge and quadrupole sources,” *American Journal of Physics*, **76**, 930-933 (2008). 10.1119/1.2937908
- Teviet Creighton and Richard H. Price “Black Holes” Invited article in *Scholarpedia*, a spin-off of Wikipedia with invited, refereed articles; January, 2008.
See: http://www.scholarpedia.org/article/Black_holes
- K. J. Lee, F. A. Jenet and Richard H. Price, “Pulsar timing as a probe of non-Einsteinian polarizations of gravitational waves,” *Astrophysical Journal*, **685**, 1304-1319 (2008).
- Teviet Creighton, Fredrick Jenet, and Richard H. Price, “Pulsar Timing and Space Time Curvature,” *Astrophysical Journal*, **693**, 1113-1117 (2009)
- Yan Wang, Fredrick A. Jenet, Teviet Creighton and Richard H. Price, “Strong field effects on pulsar arrival times: circular orbits and equatorial beams,” *Astrophysical Journal*, **697**, 237-246 (2009) arXiv:0812.2302
- Napoléon Hernández and Richard H. Price, “The periodic standing-wave approximation: computation in full general relativity,” *Phys. Rev. D* **79** 064008 (2009). arXiv: 0812.4443 DOI 10.1103/PhysRevD.79.064008
- Richard H. Price, John L. Friedman, and Charalampos Markakis, “Iteration stability for simple Newtonian systems,” *Journal of Mathematical Physics* **50**, 073505 (2009); arXiv: 0903.3074.
- Ezra T. Newman and Richard H. Price, “The Lorentz transformation: simplification through complexification,” *American Journal of Physics*, **78**, pp.14-19 (2010).
- Yan Wang, Teviet Creighton, Richard H. Price and Fredrick A. Jenet, “Strong field effects on pulsar arrival times: general orientations” *Astrophysical Journal* **705**, 1252-1259 (2009).

Kejia Lee, Fredrick A. Jenet, Richard H. Price, Norbert Wex, and Michael Kramer, “Detecting massive gravitons using pulsar timing arrays,” *Astrophysical Journal* **722** 1589-1597 (2010); [arXiv: 1008.2561](#).

Ezra T. Newman and Richard H. Price, “NP Stokes fields for radio astronomy,” *Phys. Rev. D* **82** 083516 (2010); [arXiv: 1007.4351](#)

Kevin Stovall, Teviet Creighton, Richard H. Price, and Fredrick A. Jenet, “Observability of pulsar beam bending by the Sgr A* black hole” submitted to *Astrophysical Journal* Feb 25, 2011; [arXiv:1102.5470](#).

Richard H. Price, Gaurav Khanna, and Scott Hughes, “Systematics of black hole binary inspiral kicks and the slowness approximation,” to appear in *Phys. Rev. D* [arXiv:1104.0387](#)

Talks since 1995

“Is Innovative Teaching Better ... and What Does Better Mean?” invited address to the faculty of the Stevens Institute of Technology, Hoboken, NJ, April 13, 1995.

“Innovations in Physics Teaching,” invited seminar at Rutgers University, New Brunswick, NJ, April 14, 1995.

“Black Hole Collisions without Supercomputers,” Physics Dept Seminar, NYU, April 14, 1995.

“Workshop on Collaborative Learning,” University of Utah Psychology Department, October 26, 1995.

“Computing the binary coalescence template for LIGO: Preliminary notions,” seminar at Penn State Center for Gravitational Physics and Geometry, Nov. 27, 1995

“Black Hole Collisions: The Petit Challenge,” at the Twelfth Pacific Coast Gravity Conference, Salt Lake City, Utah, March 22–23, 1996

“Black Hole Collisions without Supercomputers,” seminar Syracuse University Physics Dept., April 13, 1996.

“Black Hole Collisions without Supercomputers,” seminar, Cornell Astronomy Dept. April 15, 1996.

“The ABP2S Method,” at the Caltech Intermediate Binary Black Hole workshop, July 27, 1996.

“In-depth problems for collaborative learning,” poster presentation at the International Conference on Undergraduate Physics Education, University of Maryland, Jul. 31–Aug. 3, 1996

“Black holes, gravitational waves, lasers and supercomputers” Departmental Colloquium, Utah Valley State College, March 20, 2003.

“Approximation Methods for Black Hole Collisions,” U. of Illinois Relativity seminar, Dept of Physics, U of IL, Champaign-Urbana, September 12, 1996.

“Black Hole Collisions without Supercomputers,” Physics Department colloquium, National University in Buenos Aires, AR; November 27, 1996.

“Gravitational Waves from Black Hole Collisions,” Colloquium in the Faculty of Mathematics, Astronomy, and Physics, National University in Cordoba, AR; Dec. 5, 1996.

“Black Hole Collisions: What can we learn from analytic methods?” Seminar, Institut für Astronomie und Astrophysik, Universität Tübingen, Tübingen, Germany; March 25, 1997.

- “Approximation Methods for Black Hole Collisions,” Invited plenary talk at the 7th Canadian Conference on General Relativity and Relativistic Astrophysics, University of Calgary, June 5-7, 1997.
- “Black Holes and Gravitational Waves,” Invited plenary talk at the Second Edoardo Amaldi Conference on Gravitational Waves, CERN, Geneva, July 1-4, 1997.
- “Recent Progress in the Analysis of Black Hole Collisions,” at the 14th Pacific Coast Gravity Meeting, University of Oregon, March 20-21, 1998.
- “Black Hole Collisions and Gravitational Wave Detectors,” invited focus session talk at the meeting of the American Physical Society, April 18-21, 1998, Columbus, Ohio.
- “Surprises of Simple Physics” The Institute colloquium at the Facultad de Matematica Astronomia y Fisica, Córdoba Argentina, June 10, 1998.
- “The Intermediate Binary Black Hole Problem” Penn State Relativity Seminar, Nov 16, 1998.
- “Black Hole Coalescence” U. of Pittsburgh relativity seminar, Nov 19, 1998.
- “Colliding Rotating Black Holes; the Kerr Close Limit” 15th Pacific Coast Gravity Conference, UC Santa Barbara, February 26, 1999.
- “Initial Data for Superposed Rotating Black holes” Albert Einstein Institute workshop on initial data for numerical relativity, June 6-9, 1999, Golm Germany.
- ”Collisions of Black Holes” invited talk at the ITP Conference on Strong Gravitational Fields, June 22-26, 1999. (Available as http://www.itp.ucsb.edu/online/gravity_c99/price/)
- “Gravitational Waves from Black-Hole and Neutron-Star Mergers: Status Report,” invited talk at the Amaldi Conference, Sources Session, Caltech, Pasadena, CA, July 12, 1999.
- “The Periodic Approximation for Black Hole Inspiral” Department Seminar at Theoretical Astrophysics, University of Tübingen, Germany, November 5, 1999.
- “Gravitational Waves from Neutron Stars: Is a Relativistic Analysis Necessary” (with Zeferino Andrade) Pacific Coast Gravity Meeting 16, Caltech, Pasadena, CA March 24-25, 2000.
- “Disturbed Black Holes” KipFest Scientific Symposium, June 1-2, 2000, Caltech, Pasadena, CA.
- “The quasiperiodic approximation,” Penn State Relativity Center Seminar, January 22, 2001.
- “Black hole inspiral: can it be approximated,” Colloquium, University of Texas at Brownsville, February 26, 2001.
- “PMT, a new kind of undergraduate physics degree,” seminar, University of Texas at Brownsville, February 26, 2001.
- “The role of tidal torque in binary black hole inspiral,” seminar at the Albert Einstein/Max Planck Institut, April 3, 2001.
- “The quasiperiodic approximation,” contributed talk at GR16 15-21 July 2001, Durban, South Africa.
- “Black Holes, Gravitational Waves, Lasers and Supercomputers,” Physics Department colloquium at Brigham Young University, September 26, 2001.
- “Black Holes, Gravitational Waves, Lasers and Supercomputers,” Physics Department colloquium at Utah State University, February 12, 2002.
- ”The Standing Wave Approximation for Relativistic Binary Orbits” Caltech Numerical Relativity Seminar, June 6, 2002.

- “Future Directions” Discussion leader for the conclusion of the “Hot Topics” Workshop on numerical relativity, Institute for Mathematics and its Applications, U. of Minnesota, June 24 – 29, 2002.
- “Gravitational waves, lasers, black holes, supercomputers and approximations” Department Colloquium, U. Illinois Urbana-Champaign. November 6, 2003.
- “Gravitational waves, lasers, black holes, supercomputers and approximations” Department Colloquium, University of Guelph, Dec. 9, 2003.
- “The inspiralling black hole problem: Can it be approximated?” Invited talk at the inauguration of the Center for Gravitational Wave Astronomy, Brownsville TX, Dec. 15, 2003.
- “An Innovative Course in Technical Communication and More,” with Maria B. Cranor. Contributed talk at April 2004 APS Meeting, Denver, May 1, 2004. Talk given by M. Cranor.
- “Numerical Approaches to the standing wave approximation for black hole binary inspiral,” Richard H. Price, Benjamin Bromley and Robert Owen. Contributed talk at April 2004 APS Meeting, Denver, May 1, 2004.
- “Einstein Experts for Interested Nonexperts,” Contributed talk given at the 129th meeting of the AAPT, Sacramento, CA, Aug. 3, 2004.
- “An Innovative Course in Technical Communication and More,” with Maria B. Cranor (talk given jointly). Contributed talk given at the 129th meeting of the AAPT, Sacramento, CA, Aug. 4, 2004.
- “The Universe – the beginning of time, the extent of space” Public talk at the International Museum of Art and Science, McAllen Texas, September 23, 2004.
- Holiday address to the UTB Development Board, Dec 15, 2005.
- “Computational results from nonlinear periodic standing wave models.” First Gulf Coast Gravity Conference, UTB, February 12, 2005
- “The Periodic Standing Wave Approximation” seminar to NASA numerical relativity group at Goddard Space Flight Center, Washington DC, April 4, 2005.
- “Numerical Methods and the Periodic Standing Wave Approximation for BBH Inspiral” seminar for Physics Dept at Florida Atlantic University, April 14, 2005.
- “Technical Communication and Scientific Judgment” Department Colloquium at Florida Atlantic University, given jointly with Maria Cranor, April 15, 2005.
- “The Helically Symmetric Compact Binary Approximation” at “Friedman Fest” Oakland University, Oct 16, 2005.
- “The Periodic Standing Wave Approximation: Linearized Gravity” Gulf Coast Gravity Conference II, Boca Raton FL, March 17-18, 2006.
- “Gravitational Waves and Black Holes” Astronomy Department Colloquium, Peking University, July 21, 2006.
- “Strong Field Sources of Gravitational Waves,” 7 lectures in the Nanjing University Summer School on Gravitational Wave Astronomy, August 1-11, 2006
- “Binary Black Hole Inspiral: the Periodic Standing Wave Approximation.” Talk at the Nanjing University Workshop on Relativistic Astrophysics, August 11,12 2006.
- “Einstein’s Curved Spacetime: An Obvious Way to Describe Gravity” Department Colloquium Seattle University October 19, 2006

- “Periodic Standing-Wave Post-Minkowski Approximation” Midwest Relativity Meeting, Nov 17,18, 2007, Washington University, St. Louis.,
- “Overview of the periodic standing wave approach to the binary inspiral of compact objects: progress, promises, and problems” Invited talk at the Workshop on Helically Symmetric Systems, the Albert Einstein/Max Planck Institut fuer Gravitationphysik, Golm, Germany, January 10-12, 2007.
- “Late time radiative tails in the Kerr geometry” at the 3rd Gulf Coast Gravity Conference, March 23-24, 2007, Huntsville, Alabama.
- “Black Holes, Gravitational Waves and the Art of Approximations,” Physics Department Colloquium, Washington State University, Pullman WA, March 27, 2007.
- ”Iteration stability of neutron star structure calculations,” 10th Eastern Gravity Conference, Cornell University, June 1, 2007.
- “Radiative Tails and the Teukolsky Equation,” invited talk at the Saul Teukolsky Birthday Symposium on Relativity and Astrophysics, Cornell University, June 2, 2007.
- During the 2007 Chinese Summer School on Gravitational Wave Astrophysics, four invited lectures on: “Relativistic Gravitation,” ”Gravitational Waves,” “The Physics of Gravitational Wave Sources,” and “Astrophysical Sources of Gravitational Waves,” June 13-29, 2007 at China West Normal University, Nanchong, Sichuan province, China.
- “Radiative Tails in the Kerr Spacetime,” invited talk at University of Wisconsin, Milwaukee, October 12, 2007.
- “Curved Spacetime, Black Holes, 21st Century Astronomy and Brownsville,” invited talk in the distinguished lecture series sponsored by the Club Padre, SPIRIT, and the town of SPI, October 18, 2007.
- “Late time tails around Kerr black holes: the plot thickens” invited seminar for the LSU relativity group, November 8, 2007.
- “Iteration stability and the continuum,” UTB math seminar, March 19, 2008.
- “Stability of Iterative Algorithms for Rotating Neutron Stars” (with Charalampos Markakis and John Friedman of UW-Milwaukee) contributed talk delivered by Markakis, APS meeting, April 12, 2008.
- “Power-law tails in the Kerr spacetime” (with Reinaldo Gleiser and Jorge Pullin) contributed talk delivered by Price, APS meeting, April 12, 2008.
- “Helical symmetry and gravitational waves” UTB math seminar, April 22, 2008.
- “Issues in Science Education,” invited talk to the University of Utah Science-Math Education Task Force, August 14, 2008.
- “Helically symmetric spacetimes and supermassive black holes,” invited talk in the Distinguished Lecture Series of the Department of Mathematics of the University of Texas Pan American, November 17, 2008.
- “Strong field effects in pulsar timing” (work with Wang, Creighton, Jenet), Pacific Coast Gravity Meeting 25, U. of Oregon, March 27, 28 (2009).
- “Reflections in a mirror moving at the speed of light,” invited after dinner talk at the Pacific Coast Gravity Meeting 25, U. of Oregon, March 27, 28 (2009).

“New numerics for the helically symmetric standing wave approximation” Gulf Coast Gravity Meeting 5, LSU, Baton Rouge LA, April 17-18, 2009.

“An industrial problem involving a nonlinear PDE,” UTB Math seminar, November 16, 2010.

“Strong Antikicks in Binary Inspiral” Pacific Coast Gravity Conference, Caltech, March 18, 2011

“Teaching university physics: What are we doing? What do we think we are doing? What should we be doing?” Invited Physics Education Research talk at U. Mass. Dartmouth, May 23, 2011.

Other Professional Activities since 1990

Consultant to Center for Engineering Design.

Consultant to Time-Life Books 1990.

Invited member of NSF panel to review proposals for the micromechanical Emerging Technology Initiation Program. June 12, 1989.

Invited participant in the NSF Workshop on Computational Microdynamics. May 15, 1990.

Helped to write script, and appeared in, a movie biography of Einstein, to be distributed as part of the “Audio-Visual Encyclopedia,” October 1991.

Organizer of Pacific Coast Gravity Conference 8, Salt Lake City UT, March 6–7, 1992.

Chair of Relativistic Astrophysics Workshop at GR13, Cordoba, Argentina June 28–July 4, 1992.

Member of the “Committee of Visitors” to review the Physics Division of the National Science Foundation, August 1994.

Reviewer of educational programs for Physics Academic Software, 1995.

Organizer of Pacific Coast Gravity Conference 12, to be held in Salt Lake City, March 22, 23, 1996.

On International Advisory Committee for forthcoming Pisa meeting on Black Holes and Gravitational Waves.

Organizer of Pacific Coast Gravity Conference 12, Salt Lake City, March 22–23, 1996.

Head of Special Advisory Panel for the Binary Black Hole Grand Challenge; April–May 1996.

Member of the “Committee of Visitors” to review the Physics Division of the National Science Foundation, July 23-25, 1997.

Chair, Topical Group in Gravitation (TGG) of the APS, April 2002-April 2003

Member, Board of Editors of *New Journal of Physics*; Divisional Associate Editor (for gravitation) of *Physical Review Letters*; Member (starting January 2003) Editorial Board of *American Journal of Physics*.

Member, panel of reviewers of the NSF LIGO project, October 2002.

Member of panel on “Did Shakespeare already understand all of this gray matter?” during the second annual Utah Symposium in Science and Literature, October 10, 2003.

Chair, panel to review LIGO outreach proposal, November 4, 2003.

Chair, Task force for 2005 World Year of Physics activities for Topical Group in Gravitation, of the APS

Member of the Selection Committee of the Einstein Prize of the American Physical Society, 2005-2006.

NASA panel to review the Gravitational Wave Group (LISA activities) at Goddard Space Flight Center, April, 25-26, 2005.

Member of the NSF panel to review the NSF Frontier Center at Penn State, December 7-9, 2005.

Reviewer of Physics program at Denison University, April 3,4, 2006.

Organizer of the 2008 China summer school on gravitational waves, Morningside Center of the Chinese Academy of Sciences, June 2008.

Co-director of the UTB/TSC Professional Development Certification Program in Assigning and Assessing Student Writing; spring and fall 2010.

Member of the Deutsche Forschungsgemeinschaft international panel to judge the Transregio Sonderforschungsbereich in Gravitational Wave Astronomy, June 23-24, 2010.

Member of the external advisory board for the pulsar timing array's PIRE collaboration, 2010- .

Patents

1. "Micropositioner Systems and Methods," patent 4789803 issued Dec. 6, 1988 to Jacobsen, Wood, and Price.
2. "Systems and Methods for Sensing Position and Movement," patent 4767973 issued Aug. 30, 1988 to Jacobsen, Wood and Price.
3. "Eccentric Motion Motor ('Wobble Motor')" patent 4922164 issued May 1, 1990 to Jacobsen, Wood, and Price.

Honors

University Distinguished Teaching Award 1991

Selected Fellow of the American Physical Society, 1991

Selected to give the 53rd Reynolds Lecture, May 1993

Physics SAC Outstanding Teacher Award June 1994

Physics SAC Outstanding Teacher Award June 1996

Inaugural recipient of Outstanding Referee award, APS 2008

Recent Courses Taught

1984-85	Physics 711-712-713
1985-86	Physics 674-675-676
1986-87	Physics 674-675-676
1987-88	Fall, winter: On leave; Spring: Phys. 713i
1988-89	Physics 674-675-676
1989-90	Physics 674-675-676
1990-91	Fall, winter: Ph. 674-675; spr: 791/795 Mdrn Cosmo.
1991-92	Fall: sabbatical; winter, spr: Ph. 675-676
1992-93	Fall: Ph. 674, winter: sbbtcl;
1993-94	Winter, spring: Ph. 301, 302 (two sections)
1994-95	Winter, spring: Ph. 301, 302 (two sections)
1995-96	Fall, Winter: Ph. 221-222

1996–97 Winter, Spring: Ph. 221-222 (two sections)
 1997–98 Winter, Spring: Ph. 573-574
 1998–99 Spring: Ph: 3310
 1999–00 Spring: Ph: 3310 and 6910
 2000–01 Fall: Ph: 2220
 2000–01 Fall: Ph: 4910
 2002–03 Fall: Ph 4910; Spring: Ph 3920
 2003–04 Sabbatical leave
 Courses at UTB-TSC:
 2004–05 Fall: Phys 5325; Spring: Phys 5441 (Electro I)
 2005–06 Fall: Phys 5425/UTD 5401 (Math Meth I) Spring: Phys 5426/UTD 5402 (Math Meth II)
 2006–07 Fall: Phys 5425 (Math Methods I) Spring: Phys 5426 (Math Methods II)
 2007–08 Fall: Phys 5425 (Math Methods I) Spring: Phys 3490 (Math Methods I)
 2008–09 Fall: Phys 2325 (University Physics I); Spring: Phys 2326 (University Physics II)
 2009–10 Fall: Phys 2325 (University Physics I); Spring: Phys 2326 (University Physics II)
 2010–11 Fall: Phys 2325 (University Physics I) and Phys 6350 (Mathematical Physics)