

Appointments:

- ▷ **Current Position:** Professor of Physics and Astronomy, Louisiana State University, from August 2009.
- ▷ **Current Position:** Observatory Head, LIGO Livingston, California Institute of Technology, from November 2006.
- ▷ Associate Professor, Department of Physics and Astronomy, Louisiana State University, from 2005–2009
- ▷ Chief Scientist at LIGO Livingston, 2004–2006.
- ▷ Visiting Scholar, Ginzton Laboratory, Stanford University, 2003–2008.
- ▷ Assistant Professor, Department of Physics and Astronomy, Louisiana State University, 1999–2005.
- ▷ Research Scientist, MIT Center for Space Research, 1998–1999.
- ▷ Senior Research Associate, JILA, 1997-1998. (JILA is a joint institute of the University of Colorado at Boulder and the National Institute of Standards and Technology.)
- ▷ Research Associate, JILA. 1995-1997.
- ▷ Graduate Research Assistant, MIT Physics Department, 1987–1995.
- ▷ Technical Instructor, MIT Physics Department, 1986-1987.

Education:

Massachusetts Institute of Technology
Cambridge, MA

S.B. in Physics, June 1986
Ph.D. in Physics, June 1995

JILA/University of Colorado
Boulder, CO

Postdoctoral work in Physics, 1995–1997

Scientific societies and awards:

- ▷ Fellow, American Physical Society, elected 2009.
- ▷ Member, The International Society on General Relativity & Gravitation.
- ▷ Special Breakthrough Prize in Fundamental Physics, awarded to Ronald W. P. Drever, Kip S. Thorne and Rainer Weiss and 1012 contributors to the discovery.
- ▷ Gruber Foundation, 2016 Cosmology Prize, awarded to Ronald Drever, Kip Thorne, and Rainer Weiss, along with the entire Laser Interferometer Gravitational-Wave Observatory (LIGO) discovery team for the first detection of gravitational waves.

Activities:

- ▷ Research related to the observation of gravitational waves from astrophysical sources at the Laser Interferometer Gravitational-wave Observatory (LIGO); day-to-day management of LIGO Livingston.
- ▷ Chair of LIGO Science Education Center Partnership, which consists of collaborators at LIGO, Southern University, the Baton Rouge Area Foundation, and the San Francisco Exploratorium. The partnership carries out education and outreach activities in Louisiana relevant to LIGO science.
- ▷ Member of the LIGO Scientific Collaboration (LSC) Executive Committee; Past chair of the LSC's Suspension, Seismic Isolation and Thermal Noise Working Group.

Publications:

- [1] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914. *Classical and Quantum Gravity*, 33(13):134001, Jul 2016. ISSN 0264-9381. doi: 10.1088/0264-9381/33/13/134001.
- [2] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). GW150914: First results from the search for binary black hole coalescence with Advanced LIGO. *Physical Review D*, 93(12):122003, Jun 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.122003.
- [3] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). GW151226: Observation of gravitational waves from a 22-solar-mass binary black hole coalescence. *Physical Review Letters*, 116(24):241103, Jun 2016. ISSN 0031-9007. doi: 10.1103/PhysRevLett.116.241103.
- [4] S. Adrián-Martínez *et al.* (Antares Collaboration, IceCube Collaboration, LIGO Scientific Collaboration, and Virgo Collaboration). High-energy neutrino follow-up search of gravitational wave event GW150914 with antares and icecube. *Physical Review D*, 93(12):122010, Jun 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.122010.
- [5] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Observing gravitational-wave transient GW150914 with minimal assumptions. *Physical Review D*, 93(12):122004, Jun 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.122004.
- [6] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Properties of the binary black hole merger GW150914. *Physical Review Letters*, 116(24):241102, Jun 2016. ISSN 0031-9007. doi: 10.1103/PhysRevLett.116.241102.
- [7] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Search for transient gravitational waves in coincidence with short-duration radio transients during 2007-2013. *Physical Review D*, 93(12):122008, Jun 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.122008.
- [8] D. V. Martynov, E. D. Hall, B. P. Abbott, R. Abbott, T. D. Abbott, C. Adams, R. X. Adhikari, R. A. Anderson, S. B. Anderson, K. Arai, M. A. Arain, S. M. Aston, L. Austin, S. W. Ballmer, M. Barbet, D. Barker, B. Barr, L. Barsotti, J. Bartlett, M. A. Barton, I. Bartos, J. C. Batch, A. S. Bell, I. Belopolski, J. Bergman, J. Betzwieser, G. Billingsley, J. Birch, S. Biscans, C. Biwer, E. Black, C. D. Blair, C. Bogan, R. Bork, D. O. Bridges, A. F. Brooks, C. Celerier, G. Ciani, F. Clara, D. Cook, S. T. Countryman, M. J. Cowart, D. C. Coyne, A. Cumming, L. Cunningham, M. Damjanic, R. Dannenberg, K. Danzmann, C. F. D. S. Costa, E. J. Daw, D. DeBra, R. T. DeRosa, R. DeSalvo, K. L. Dooley, S. Doravari, J. C. Driggers, S. E. Dwyer, A. Effler, T. Etzel, M. Evans, T. M. Evans, M. Factourovich, H. Fair, D. Feldbaum, R. P. Fisher, S. Foley, M. Frede, P. Fritschel, V. V. Frolov, P. Fulda, M. Fyffe, V. Galdi, J. A. Giaime, K. D. Giardino, J. R. Gleason, R. Goetz, S. Gras, C. Gray, R. J. S. Greenhalgh, H. Grote, C. J. Guido, K. E. Gushwa, E. K. Gustafson, R. Gustafson, G. Hammond, J. Hanks, J. Hanson, T. Hardwick, G. M. Harry, J. Heefner, M. C. Heintze, A. W. Heptonstall, D. Hoak, J. Hough, A. Ivanov, K. Izumi, M. Jacobson, E. James, R. Jones, S. Kandhasamy, S. Karki, M. Kasprzack, S. Kaufer, K. Kawabe, W. Kells, N. Kijbunchoo, E. J. King, P. J. King, D. L. Kinzel, J. S. Kissel, K. Kokeyama, W. Z. Korth, G. Kuehn, P. Kwee, M. Landry, B. Lantz, A. Le Roux, B. M. Levine, J. B. Lewis, V. Lhuillier, N. A. Lockerbie, M. Lormand, M. J. Lubinski, A. P. Lundgren, T. MacDonald, M. MacInnis, D. M. Macleod, M. Mageswaran, K. Mailand, S. Marka, Z. Marka, A. S. Markosyan, E. Maros, I. W. Martin, R. M. Martin, J. N. Marx, K. Mason, T. J. Massinger, F. Matichard, N. Mavalvala, R. McCarthy, D. E. McClelland, S. McCormick, G. McIntyre, J. McIver, E. L. Merilh, M. S. Meyer, P. M. Meyers, J. Miller, R. Mittleman, G. Moreno, C. L. Mueller, G. Mueller, A. Mullavey, J. Munch, L. K. Nuttall, J. Oberling, J. O'Dell, P. Oppermann, R. J. Oram, B. O'Reilly, C. Osthelder, D. J. Ottaway, H. Overmier, J. R. Palamos, H. R. Paris, W. Parker, Z. Patrick, A. Pele, S. Penn, M. Phelps, M. Pickenpack, V. Pierro, I. Pinto, J. Poeld, M. Principe, L. Prokhorov, O. Puncken, V. Quetschke, E. A. Quintero, F. J. Raab, H. Radkins, P. Raffai, C. R. Ramet, C. M. Reed, S. Reid, D. H. Reitze, N. A. Robertson, J. G. Rollins, V. J. Roma, J. H. Romie, S. Rowan, K. Ryan,

- T. Sadecki, E. J. Sanchez, V. Sandberg, V. Sannibale, R. L. Savage, R. M. S. Schofield, B. Schultz, P. Schwinberg, D. Sellers, A. Seigny, D. A. Shaddock, Z. Shao, B. Shapiro, P. Shawhan, D. H. Shoemaker, D. Sigg, B. J. J. Slagmolen, J. R. Smith, M. R. Smith, N. D. Smith-Lefebvre, B. Sorazu, A. Staley, A. J. Stein, A. Stochino, K. A. Strain, R. Taylor, M. Thomas, P. Thomas, K. A. Thorne, E. Thrane, C. I. Torrie, G. Traylor, G. Vajente, G. Valdes, A. A. van Veggel, M. Vargas, A. Vecchio, P. J. Veitch, K. Venkateswara, T. Vo, C. Vorvick, S. J. Waldman, M. Walker, R. L. Ward, J. Warner, B. Weaver, R. Weiss, T. Welborn, P. Wessls, C. Wilkinson, P. A. Willems, L. Williams, B. Willke, L. Winkelmann, C. C. Wipf, J. Worden, G. Wu, H. Yamamoto, C. C. Yancey, H. Yu, L. Zhang, M. E. Zucker, and J. Zweizig. Sensitivity of the Advanced LIGO detectors at the beginning of gravitational wave astronomy. *Physical Review D*, 93(11):112004, Jun 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.112004.
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- [10] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). GW150914: Implications for the stochastic gravitational-wave background from binary black holes. *Physical Review Letters*, 116(13):131102, Mar 2016. ISSN 0031-9007. doi: 10.1103/PhysRevLett.116.131102.
- [11] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). GW150914: the Advanced LIGO detectors in the era of first discoveries. *Physical Review Letters*, 116(13):131103, Mar 2016. ISSN 0031-9007. doi: 10.1103/PhysRevLett.116.131103.
- [12] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). All-sky search for long-duration gravitational wave transients with initial LIGO. *Physical Review D*, 93(4):042005, Feb 2016. ISSN 2470-0010. doi: 10.1103/PhysRevD.93.042005.
- [13] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Astrophysical implications of the binary black hole merger GW150914. *Astrophysical Journal Letters*, 818(2):L22, Feb 2016. ISSN 2041-8205. doi: 10.3847/2041-8205/818/2/L22.
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- [15] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Observation of gravitational waves from a binary black hole merger. *Physical Review Letters*, 116(6):061102, Feb 2016. ISSN 0031-9007. doi: 10.1103/PhysRevLett.116.061102.
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- [17] Abbott, B. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Prospects for observing and localizing gravitational-wave transients with Advanced LIGO and Advanced Virgo. *Living Reviews In Relativity*, 19:1–+, 2016. ISSN 1433-8351. doi: 10.1007/lrr-2016-1.
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- P. Sarin, D. Shoemaker, A. Stein, J. Thomas, M. Vargas, K. Venkateswara, J. Warner, and S. Wen. Seismic isolation of Advanced LIGO: Review of strategy, instrumentation and performance. *Classical And Quantum Gravity*, 32(18):185003, Sep 2015. ISSN 0264-9381. doi: 10.1088/0264-9381/32/18/185003.
- [20] Aasi, J. *et al.* (LIGO Scientific Collaboration and Virgo Collaboration). Characterization of the LIGO detectors during their sixth science run. *Classical And Quantum Gravity*, 32(11):115012, Jun 2015. ISSN 0264-9381. doi: 10.1088/0264-9381/32/11/115012.
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- [23] F. Matichard, B. Lantz, K. Mason, R. Mittleman, B. Abbott, S. Abbott, E. Allwine, S. Barnum, J. Birch, S. Biscans, D. Clark, D. Coyne, D. DeBra, R. DeRosa, S. Foley, P. Fritschel, J. A. Giaime, C. Gray, G. Grabeel, J. Hanson, M. Hillard, J. Kissel, C. Kucharczyk, A. Le Roux, V. L’huillier, M. Macinnis, B. O’Reilly, D. Ottaway, H. Paris, M. Puma, H. Radkins, C. Ramet, M. Robinson, L. Ruet, P. Sareen, D. Shoemaker, A. Stein, J. Thomas, M. Vargas, and J. Warner. Advanced LIGO two-stage twelve-axis vibration isolation and positioning platform. part 2: Experimental investigation and tests results. *Precision Engineering—Journal Of The International Societies For Precision Engineering And Nanotechnology*, 40:287–297, Apr 2015. ISSN 0141-6359. doi: 10.1016/j.precisioneng.2014.11.010.
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- [29] Aasi, J. *et al.* (IceCube Collaboration, LIGO Scientific Collaboration and Virgo Collaboration). Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube. *Physical Review D*, 90(10):UNSP 102002, Nov 2014. ISSN 1550-7998. doi: 10.1103/PhysRevD.90.102002.

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Technical talks and professional meetings:

- [1] “Observation of gravitational waves from binary black holes using ultra-high precision laser interferometers,” invited plenary lecture at the V Congreso Nacional de Ingeniería Física CNIF in Medellín, Colombia, September 27, 2016.

- [2] "Hearing Black Holes Collide, with LIGO," invited lecture at the 2016 British Science Festival in Swansea, Wales, U.K., September 7, 2016.
- [3] "Observation of Gravitational Waves from a Binary Black Hole Merger," Physics and Astronomy seminar at the University of California Davis, May 2, 2016.
- [4] "Observation of Gravitational Waves," Louisiana State University College of Science seminar, March 11, 2016. (with G. González)
- [5] "LIGO: science, technology and expectations in the Advanced LIGO era," seminar at the University of Louisiana, Lafayette, February 26, 2014.
- [6] Host and Chair of local committee, Southeastern Section of American Physical Society, annual meeting, Baton Rouge, LA, October 20-23, 2010.
- [7] "The LIGO detector, past present and future," invited talk at Multi-Messenger Relativistic Astrophysics; inaugural conference of the Center for Relativistic Astrophysics at Georgia Tech, May 20, 2009.
- [8] "Operational Challenges at LIGO," National Science Foundation (NSF) Large Facilities Workshop, Tucson, AZ, April 17, 2009.
- [9] "The Laser Interferometer Gravitational-wave Observatory: present performance and improvements underway," all-hands meeting of Open Science Grid (OSG) Council, Livingston, LA, March 4, 2009.
- [10] "The Science Education Center at the LIGO Livingston Observatory," invited talk at the annual conference of the Association of Science and Technology Centers (ASTC), Los Angeles, October 16, 2007.
- [11] "The Laser Interferometer Gravitational-wave Observatory: present performance and improvements underway," seminar at Tulane University, September 11, 2007.
- [12] "Searching for Gravitational Waves," Chair and organizer of invited session at the November 9–11, 2006, meeting of the Southeast Section of the American Physical Society, held in Williamsburg, Virginia.
- [13] "Improving the LIGO detector," general seminar, Department of Physics, University of Louisiana Lafayette, October 11, 2006.
- [14] "The Advanced LIGO detector," invited talk, 6th Edoardo Amaldi Conference on Gravitational Waves, Okinawa, Japan, June 24, 2005.
- [15] "Improving the LIGO detector," invited talk, Research Progress Meeting (RPM), Lawrence Berkeley National Laboratory, April 7, 2005.
- [16] "Critical mechanical technologies for future gravitational-wave astronomy," invited talk at Imagining the Future: Gravitational Wave Astronomy, Pennsylvania State University, State College PA, October 29, 2004.
- [17] "Improving the LIGO Detector," general seminar, Department of Physics and Astronomy, Louisiana State University, Baton Rouge LA, October 21, 2004.
- [18] "The Laser Interferometer Gravitational-wave Observatory, early results and technical progress." Physics colloquium at the University of Alabama, Tuscaloosa, October 15, 2003.
- [19] "Seismic Isolation Enhancements for Initial and Advanced LIGO," presented at the 5th Amaldi meeting, Tirrenia, Italy, July 10, 2003.
- [20] "Active seismic isolation for an advanced LIGO gravitational-wave detector," invited talk at the March 2003 APS meeting, Austin, TX.

- [21] "Advanced seismic isolation for LIGO-II," seminar at the Center for Gravitational Physics and Geometry, Penn State, April 10, 2000.
- [22] "The JILA low-frequency seismic isolation platform," with R. Stebbins, P. Bender and J. Faller, at the VIRGO International Workshop on Thermal Noise and Low-Frequency Noise Sources in Gravitational-Wave Detectors, 4-6 June, 1998, Perugia, Italy.
- [23] "Low noise interferometric seismometer readouts in an active vibration isolation system for gravitational wave detectors," with S. Richman, R. Stebbins, P. Bender, and J. Faller, presented at the 1997 Joint April meeting of the APS and the AAPT. *Bull. APS*, **42:2**, 1106.
- [24] "An analysis of interferometric gravitational wave detector design using MAPLE," presented at the 1996 East Coast Computer Algebra Day, April 13, 1996, Yorktown Heights, NY.
- [25] "Test of a candidate interferometer configuration for LIGO," (with D. Shoemaker), presented at the 1994 Joint April meeting of the APS and the AAPT. *Bull. APS*, **39:2**, session J11 PMTG.

Public lectures:

- [1] "Hearing Black Holes Collide, with LIGO," Rotary Club of Baton Rouge, October 19, 2016.
- [2] "Hearing Black Holes Collide in Louisiana," Baton Rouge Press Club, September 12, 2016.
- [3] "Hearing Black Holes Collide, with LIGO," David Elder Lecture, Glasgow Science Centre, Glasgow, Scotland, U.K., August 29, 2016.
- [4] "Hearing Black Holes Collide," Sunrise Rotary, Baton Rouge, LA, May 19, 2016.
- [5] "Hearing Black Holes Collide," lecture for the general public at University of California, Davis, CA, May 3, 2016.
- [6] "Hearing Black Holes Collide in Louisiana," *Einstein Week* public lecture, University of New Orleans, LA, April 21, 2016.
- [7] "Hearing Black Holes Collide in Louisiana," lecture to Baton Rouge Astronomical Society, April 11, 2016.
- [8] "The Science Education Center and the LIGO Livingston Observatory," Denham Springs Kiwanis, July 24, 2008.
- [9] "The Laser Interferometer Gravitational-wave Observatory, and the new Science Education Center," seminar at the Baton Rouge Area Foundation, August 27, 2007.
- [10] "Searching for Gravitational Waves with LIGO," invited talk to the Baton Rouge Rotary, May 9, 2007.
- [11] "The LIGO Detector," Baton Rouge Amateur Radio Club, April 25, 2006.
- [12] "LIGO and the Search for Gravitational Waves," LSU Saturday Science, February 2003.