Deirdre Shoemaker, Ph.D.

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I. Earned Degrees

B.S.	Astronomy & Astrophysics with Honors and Physics	1990-1994	Pennsylvania State University
Ph.D.	Physics	1995-1999	University of Texas at Austin (advisor: R. Matzner)

II. Employment History

1999-2002	Postdoctoral Fellow, Center for Gravitational Wave Physics, Penn State (advisor: S. Finn and J. Pullin)
2002-2004	Research Associate, Center for Radiophysics and Space Research, Cornell (advisor: S. Teukolsky)
2004-2008	Assistant Professor, Physics, Penn State
2008-2011	Assistant Professor, Physics, Georgia Institute of Technology
2009-2011	Adjunct Assistant Professor, School of Computational Science and Engineering, Georgia Institute of Technology
2011-2016	Associate Professor, Physics, Georgia Institute of Technology
2011-2016	Adjunct Associate Professor, School of Computational Science and Engineering, Georgia Institute of Technology
2013-2020	Director, Center for Relativistic Astrophysics
2016-2020	Professor, Physics, Georgia Institute of Technology
2016-2020	Adjunct Professor, School of Computational Science and Engineering, Georgia Institute of Technology
2017-2020	Associate Director of Research and Strategic Initiatives, Institute of Data, Engineering and Science, Georgia Institute of Technology
2020-Present	Professor, Physics, University of Texas at Austin
2020-Present	Director, Center for Gravitational Physics, University of Texas at Austin
2021-Present	Affiliated Faculty Member, Oden Institute for Computation Engineering and Sciences, University of Texas at Austin

III. Honors and Awards

2024	ESA/NASA mission LISA Science Team Member
2024	Deputy Chair of the LISA Consortium Constituent Council
2024	Councilor of the APS Division of Gravitational Physics
2022	Member of European Gravitational Observatory Scientific and Technical Advisory Committee (EGO-STAC)
2020-2022	Convenor of the Snowmass Cosmic Frontier 5
2020	Endowed Professor #1 at University of Texas at Austin
2020-2021	APS April Meeting Program Chair
2019-2022	Member of the Astronomy and Astrophysics Advisory Committee (AAAC)

2019 Elected USA Representative to the International Society of General Relativity and Gravity
2019 Member of the Nominating Committee Elections International Society of General Relativity and Gravity
2018-2024 Co-chair of the LISA Waveform Working Group
2018-2024 Lead of LISA Consortium Waveform SubPackage 1.3.1 for NR BBH waveforms
2018 Invited to the SAG
2017-2022 Member of the NASA LISA Study Team
2017-2020 Dunn Family Professor of Physics, Endowed Professorship
2017 Nominated GA Power Professor of Excellence
2016 Provost Emerging Leader's Program , Georgia Tech
2016 Special Breakthrough Prize in Fundamental Physics, LIGO Scientific Collaboration
2016 Gruber Cosmology Prize awards to LIGO Team
2015 Cullen Peck Fellow, Georgia Tech
2014 Nominated for Georgia Tech Diversity Champion Awards
2014 Elected Fellow of the American Physical Society
2014 Editorial Board of Classical and Quantum Gravity Journal
2013 Elected Chair-line of APS Topical Group on Gravitation
2013-2016 Editorial Board International Journal of Modern Physics D
2012 Hesburgh Teaching Fellow (Georgia Tech)
2010 Elected Member at Large APS Division of Computational Physics
2010 National Science Foundation (NSF) CAREER award
2009 PRL Editor's suggestion *Physical Review Letters* vol 103, 131101 (2009).
1999 Distinguished Dissertation Award, The University of Texas at Austin
1999 Professional Development Award, The University of Texas at Austin
1994 Sigma Pi Sigma Undergraduate Research Award

IV. Research, Scholarship, and Creative Activities

A. Published Books, Parts of Books, and Edited Volumes

A1. Books

No data

A2. Refereed Book Chapters

No data

A3. Other Parts of Books

No data

A4. Edited Volumes

1. P. Sutton and D. Shoemaker, Editors, "Special Issue: Proceedings of the 2008 Numerical Relativity Data Analysis Meeting," *Classical and Quantum Gravity* vol. 26 (2009).
2. P. Shawhan and D, Shoemaker, Editors, "Focus Issue: Gravitational Waves," Classical Quantum Gravity (2016)

B. Refereed Publications and Submitted Articles

B1. Published and Accepted Journal Articles

Note: I have not listed all LVC papers on which I am on author

3. LISA Waveform Working Group, Waveform Modeling for the LASER Interferometer Space Antenna, accepted by Living Reviews (2025)
4. Aasim Jan, Richard O'Shaughnessy, Deirdre Shoemaker, and Jacob Lange, Adapting a novel framework for rapid inference of massive black hole
5. binaries for LISA, Phys. Rev. D 111 064079 (2025)
6. Aasim Jan, Deborah Ferguson, Jacob Lange, Deirdre Shoemaker, and Aaron Zimmerman, Accuracy limitations of existing numerical relativity waveforms on the data analysis of current and future ground-based detectors, Phys. Rev. D 110 (2) 024023 (2024)
7. Ferguson, D et al, Second MAYA Catalog of Binary Black Hole Numerical Relativity Waveforms, submitted to Physical Review D (2024)
8. Monical Colpi et al, LISA Definition Study Report, arXiv:2402.07571(2024)
9. Iglesias, Hector et al, Eccentricity estimation for five binary black hole mergers with higher-order gravitational wave modes, *Astrophys.J.* 972 1, 65 (2024)
10. Yu-Peng Zhang, Miguel Gracia-Linares, Pablo Laguna, Deirdre Shoemaker, Yu-Xiao Liu, Gravitational recoil from binary black hole mergers in scalar field clouds, Physical Review D 107 (4), 044039 (2023)
11. Aaron S. Chou, Marcelle Soares-Santos, Tim M.P. Tait, Rana X. Adhikari, Luis A. Anchordoqui, James Annis, Clarence L. Chang, Jodi Cooley, Alex Drlica-Wagner, Ke Fang, Brenna Flaugher, Joerg Jaeckel, W. Hugh Lippincott, Vivian Miranda, Laura Newburgh, Jeffrey A. Newman, Chanda Prescod-Weinstein, Gray Rybka, B. S. Sathyaprakash, David J. Schlegel, Deirdre M. Shoemaker Tracy R. Slatyer, Anze Slosar, Kirsten Tollefson, Lindley Winslow, Hai-Bo Yu, Tien-Tien Yu, Kristi Engel, Susan Gardner, Tiffany R. Lewis, Bibhushan Shakya, Phillip Tanedo, Snowmass Cosmic Frontier Report (2022)
12. K. Arun et al, ``New Horizons for Fundamental Physics with LISA, '' Living Reviews of Relativity 25 (2022) 1, 4
13. LIGO, Virgo and KAGRA Collaborations, ``Tests of General Relativity with GWTC-3'' accepted for publication in Physical Review D (2022)
14. D. Ferguson, K. Jani, P. Laguna, and D. Shoemaker, ``Assessing the Readiness of Numerical Relativity for LISA and 3G Detectors', Physical Review D 104, 044037 (2021) arXiv:2004.08342
15. LIGO Scientific and Virgo Collaboration, ``Tests of General Relativity with Binary Black Holes with the Second LIGO-Virgo Gravitational-Wave Transient Catalog,'' Physical Review D 103, 122002, (2021)
16. LIGO Scientific and Virgo Collaboration, ``GW190521: A Binary Black Hole Merger with a Total Mass of 150M,'' Physical Review Letters 125 101102 (2020)
17. J. Calderon Bustillo, C. Evans. J. Clark, P. Laguna, and D. Shoemaker, ``Gravitational-wave imaging of black hole horizons: Post-merger chirps from binary black hole post-mergers", Communications Physics vol. 3, 1 (2020)
18. R. Udall, K. Jani, J. Lange, R. O'Shaughnessy, J. Clark, L. Cadonati, D. Shoemaker and K. Holley-Bockelmann, ``Inferring parameters of the loudest intermediate mass black hole trigger in LIGO's O1/O2 data'' Astrophysics Journal 900, 80 (2020)
19. LIGO Scientific and Virgo Collaborations, ``GW190521: A Binary Black Hole Merger with a Total Mass of 150 M", , Physical Review Letters 125, 101102 (2020)

20. C. Evans, D. Ferguson, B. Khamesra, P. Laguna and D. Shoemaker, ``Inside the final black hole: puncture and trapped surface dynamics", Classical and Quantum Gravity 37, 15LT02 (2020)
21. K. Jani, D. Shoemaker, and C. Cutler, `` Detectability of Intermediate-Mass Black Holes in Multiband Gravitational Wave Astronomy,'' Nature Astronomy 4 (3), 250-265 (2020)
22. D. Ferguson, S. Ghonge, J. Clark, P. Laguna, and D. Shoemaker, ``Measuring Spin of the Remnant Black Hole from Maximum Amplitude'', Physical Review Letters 123, 151101 (2019)
23. K. Higginbotham, B. Khamesra, J. McInerney, K. Jani, Karan, D. Shoemaker, and P. Laguna, ``Coping with spurious radiation in binary black hole simulations,'' Physical Review D 100, (2019)
24. K. Chatziioannou et al, ``On the properties of the massive binary black hole merger GW17072," Physical Review D 100, 104015 (2019)
25. LIGO Scientific and Virgo Collaborations, ``Properties of the Binary Neutron Star Merger GW170817,'' *Physical Review X* 9, 011001 (2019)
26. J. Calderon Bustillo, J. Clark, P. Laguna and D. Shoemaker, ``Tracking Black Hole Kicks from Gravitational Wave Observations'', *Physical Review Letters* 121, 191102 (2018)
27. J. Healy, J. Lange, R. O'Shaughnessy, C. Lousto, M. Campanelli, A. Williamson Y. Zlochower, J. Calderon Bustillo, J. Clark, C. Evans, D. Ferguson, S. Ghonge, K. Jani, B. Khamesra, P. Laguna, D. Shoemaker, A. Garcia, M. Boyle, D. Hemberger, L. Kidder, P. Kumar, G. Lovelace, H. Pfeiffer, M. Scheel, and S, Teukolsky ``Targeted numerical simulations of binary black holes for GW170104," *Physical Review D* 97, 064027 (2018)
28. LIGO Scientific and Virgo Collaborations, ``Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817," *Astrophysics Journal* 851, no. 1, L16 (2017)
29. J. Lange et al, `` Parameter estimation method that directly compares gravitational wave observations to numerical relativity,'' Physical Review D 96 (2017)
30. LIGO Scientific, Virgo, Fermi GBM, INTEGRAL, IceCube, IPN, Insight-Hxmt, ANTARES, Swift, Dark Energy Camera GW-EM, Dark Energy Survey, DLT40, GRAWITA, Fermi-LAT, ATCA, ASKAP, OzGrav, DWF (Deeper Wider Faster Program), AST3, CAASTRO, VINROUGE, MASTER, J-GEM, GROWTH, JAGWAR, CaltechNRAO, TTU-NRAO, NuSTAR, Pan-STARRS, KU, Nordic Optical Telescope, ePESSTO, GROND, Texas Tech University, TOROS, BOOTES, MWA, CALET, IKI-GW Follow-up, H.E.S.S., LOFAR, LWA, HAWC, Pierre Auger, ALMA, Pi of Sky, DFN, ATLAS Telescopes, High Time Resolution Universe Survey, RIMAS, RATIR, SKA South Africa/MeerKAT Collaborations, AstroSat Cadmium Zinc Telluride Imager Team, AGILE Team, 1M2H Team, Las Cumbres Observatory Group, MAXI Team, TZAC Consortium, SALT Group, Euro VLBI Team, Chandra Team at McGill University, ``Multi-messenger Observations of a Binary Neutron Star Merger," *Astrophysics Journal* 848, no. 2, L12 (2017)
31. LIGO Scientific and Virgo Collaborations, ``GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral,'' *Physical Review Letters* 119, 16, 161101 (2017)
32. J. Calderon Bustillo, P. Laguna and D. Shoemaker, ``Detectability of gravitational waves from binary black holes: Impact of precession and higher modes", *Physical Review D*95, no. 10 104038 (2017)

33. LIGO Scientific and VIRGO Collaborations, ``GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2,'' *Physical Review Letters* 118, no. 22, 221101 (2017)
34. LIGO Scientific and Virgo Collaborations, ``GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence,'' *Physical Review Letters* 119, no. 14, 141101 (2017)
35. LIGO Scientific and Virgo Collaborations, ``Search for intermediate mass black hole binaries in the first observing run of Advanced LIGO,'' *Physical Review D* 96, no. 2, 022001 (2017)
36. LIGO Scientific and Virgo Collaborations, ``Effects of waveform model systematics on the interpretation of GW150914,'' *Classical Quantum Gravity* 34, no. 10, 104002 (2017
37. J. Lange, R. O'Shaughnessy, M. Boyle, J. Calderon Bustillo, M. Campanelli, T. Chu, J. Clark, J. Demos, H. Fong, J. Healy, D. Hemberger, I. Hinder, K. Jani, B. Khamesra, A. Williamson Y. Zlochower, J. Clark, C. Evans, D. Ferguson, S. Ghonge, K. Jani, L. Kidder, P. Kumar, P. Laguna, C. Lousto, G. Lovelace, S. Ossokine, H. Pfeiffer, M. Scheel, B. Szilagyi, D. Shoemaker, S, Teukolsky, Y. Zlochower, `` Parameter estimation method that directly compares gravitational wave observations to numerical relativity, " Physical Review D 96 104041 (2017)
38. K. Jani, J. Healy, J, Clark, L. London, P. Laguna and D. Shoemaker, ``Georgia Tech Catalog of Waveforms,'' *Classical and Quantum Gravity* 33, 204001 (2016)
39. LIGO Scientific and Virgo Collaborations, ``Binary Black Hole Mergers in the first Advanced LIGO Observing Run,'' Phys. Rev. X 6, 041015 (2016)
40. LIGO Scientific and Virgo Collaborations, ``Directly comparing GW150914 with numerical solutions of Einstein's equations for binary black hole coalescence,'' *Physical Review D* 94 064035 (2016)
41. LIGO Scientific and Virgo Collaborations, ``An improved analysis of GW150914 using a fully spin-precessing waveform model,'' *Physical Review X* 6, 041014 (2016)
42. LIGO Scientific and Virgo Collaborations, ``GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence,'' *Physical Review Letters* vol. 116, 241103 (2016)
43. LIGO Scientific and Virgo Collaborations, ``Astrophysical Implications of the Binary Black Hole Merger GW150914," Astrophysical Journal Letters*, vol 818 (2016).*
44. *LIGO Scientific Collaboration*; the Virgo Collaboration. "Tests of General Relativity with GW150914", " *Physical Review Letters* vol/ 116, 221101 (2016).
45. LIGO Scientific Collaboration; the Virgo Collaboration, "Observing gravitational-wave transient GW150914 with minimal assumptions", *Physical Review D* vol 93, 122004 (2016)
46. LIGO Scientific and Virgo Collaborations, ``GW150914: First results from the search for binary black hole coalescence with Advanced LIGO*," Physical Review D* vol. 93, 22003 (2016)
47. LIGO Scientific and Virgo Collaborations, ``Properties of the Binary Black Hole Merger GW150914, *Physical Review Letters* vol. 116, 241102 (2016)
48. The LIGO Scientific and Virgo Collaborations, "Observation of Gravitational Waves from Binary Black Hole Merger," *Physical Review Letters* 116, 061102 (2016)
49. J. Healy, P. Laguna and D. Shoemaker, ``Decoding the final state in Binary Black Hole Mergers'', *Classical and Quantum Gravit*y vol. 31 no. 21, 212001 (2014).
50. L. London, D. Shoemaker and J. Healy, ``Modeling Ringdown: Beyond the Fundamental Quasi-Normal Modes,'' *Physical Review D* vol. 90, no. 12, 124032 (2014).

51. J. Aasi and The LIGO Scientific and the Virgo and the NINJA-2 Collaborations, ``The NINJA-2 project: Detecting and characterizing gravitational waveforms modeled using numerical binary black hole simulations,'' *Classical and Quantum Gravity* vol. 31, 115004 (2014).
52. Hinder and the NRAR collaboration, ``Error-analysis and comparison to analytical models of numerical waveforms produced by the NRAR Collaboration,'' *Classical Quantum Gravity* vol. 31 025012 (2014).
53. N. Andersson et al, "The Transient Gravitational-Wave Sky," *Classical and Quantum Gravity* vol. 30 193002 (2013).
54. L. Pekowsky, R. O'Shaughnessy, J. Healy and D. Shoemaker, ``Comparing gravitational waves from nonprecessing and precessing black hole binaries in the corotating frame,'' *Physical Review D* vol. 88 024040 (2013).
55. J. Healy, P. Laguna, L. Pekowsky and D. Shoemaker, ``Template Mode Hierarchies for Binary Black Hole Mergers,'' *Physical Review D* vol. 88 no. 2 024034 (2013).
56. L. Pekowsky, J. Healy, D. Shoemaker and P. Laguna, ``Impact of Higher-order Modes on the Detection of Binary Black Hole Coalescences,'' *Physical Review D* vol. 87 084008 (2013).
57. R. O'Shaughnessy, L. London, J. Healy and D. Shoemaker, ``Precession during merger 1: Strong polarization changes are observationally accessible features of strong-field gravity during binary black hole merger,'' *Physical Review D* vol. 87 044038 (2013).
58. P. Ajith and the NINJA collaboration, "The NINJA-2 catalog of hybrid post-Newtonian/numerical-relativity waveforms for non-precessing black-hole binaries," *Classical Quantum Gravity* vol. 29 124001 (2012).
59. R. O'Shaughnessy, J Healy, L. London, Z. Meeks and D. Shoemaker, "Is J enough? Comparison of gravitational waves emitted along the total angular momentum direction with other preferred orientations," *Physical Review D* vol. 85 084003 (2012)
60. T. Bode, T. Bogdanovic, R. Haas, J. Healy, P. Laguna and D. Shoemaker, "Mergers of Supermassive Black Holes in Astrophysical Environments," *Astrophysics Journal* vol. 45 744 (2012).
61. R. O'Shaughnessy, B. Vaishnav, Z. Meeks and D. Shoemaker, "Efficient asymptotic frame selection for binary black hole spacetimes using asymptotic radiation," *Physical Review D* vol. 84 124002 (2011).
62. T. Bogdanovic, T. Bode, R. Haas, P. Laguna and D. Shoemaker, "Properties of Accretion Flows Around Coalescing Supermassive Black Holes," *Classical and Quantum Gravity* vol. 28 094020 (2011).
63. S. Fischetti, J. Healy, L. Cadonati, L. London, S. Mohapatra and D. Shoemaker, "Exploring Use of Numerical Relativity Waveforms in Burst Analysis of Precessing Black Hole Mergers," *Physical Review D* vol. 83 044019 (2011).
64. R. O'Shaughnessy, B. Vaishnav, J Healy and D. Shoemaker, "Intrinsic selection biases of ground-based gravitational wave searches for high-mass BH-BH mergers," *Physical Review D* vol. 82 104006 (2010).
65. Hinder, F. Herrmann, P. Laguna and D. Shoemaker, "Comparisons of Eccentric Binary Black Hole Simulations with Post-Newtonian Models," *Physical Review D* vol. 82 024033 (2010).
66. T. Bode, R. Haas, T. Bogdanovic, P. Laguna and D. Shoemaker, "Relativistic Mergers of Supermassive Black Holes and their Electromagnetic Signatures," *Astrophysical Journal* vol. 715, 1117-1131 (2010).
67. J. Healy, P. Laguna, R. Matzner and D. Shoemaker, "Final Mass and Spin of Merged Black Holes and the Golden Black Hole," *Physical Review* D vol. 81, 081501(R) (2010).
68. J. Healy, J Levin and D. Shoemaker, "Zoom-Whirl Orbits in Black Hole Binaries," *Physical Review Letters* vol. 103, 131101 (2009).

69. B. Vaishnav, I. Hinder, F. Herrmann and D. Shoemaker, "Gravitational Waves from Eccentric Intermediate Mass Binary Black Hole Mergers," *Classical and Quantum Gravity* vol. 26, 204008 (2009).
70. M. Hannam, S. Husa, J. Baker, M. Boyle, B. Bruegmann, T. Chu, N. Dorband, F. Herrmann, I. Hinder, B. Kelly, L. Kidder, P. Laguna, K. Matthews, J. van Meter, H. Pfeiffer, D. Pollney, C. Reisswig, M. Scheel and D. Shoemaker, "The Samurai Project: Verifying the Consistency of Black-Hole-Binary Waveforms for Gravitational-Wave Detection," *Physical Review D* vol. 79, 084025 (2009).
71. T. Bode, P. Laguna, D. Shoemaker, I. Hinder, F. Herrmann and B. Vaishnav, "Binary Black Hole Evolutions of Approximate Puncture Initial Data," *Physical Review D* vol. 80 024008 (2009).
72. B. Aylott and the NINJA collaboration, "Testing Gravitational-Wave Searches with Numerical Relativity Waveforms: Results from the First Numerical INJection Analysis (NINJA) Project," *Classical and Quantum Gravity* vol. 26, 165008 (2009).
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74. J. Healy, F. Herrmann, I. Hinder, D. Shoemaker, P. Laguna and R. Matzner, "Superkicks in Hyperbolic Encounters of Binary Black Holes," *Physical Review Letters* vol. 102, 041101 (2009).
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76. M. Washik, J. Healy, F. Herrmann, I. Hinder, D. Shoemaker, P. Laguna and R. Matzner, "Binary Black Hole Encounters, Gravitational Bursts and Maximum Final Spin," *Physical Review Letter*s vol. 101, 061102 (2008).
77. E. Bentivegna, D. Shoemaker, F. Herrmann and I. Hinder, "Probing Binary Black Hole Mergers with Scalar Waves," *Physical Review D* vol. 77, 124016 (2008).
78. K. Holley-Bockelmann, K. Gultekin, D. Shoemaker, and N. Yunes, "Gravitational Wave Recoil and the Retention of Intermediate Mass Black Holes," *Astrophysical Journal* vol. 686 pp. 829-837 (2008).
79. T. Bode, D. Shoemaker, F. Herrmann and I. Hinder, "Robustness of Binary Black Hole Mergers in Presence of Spurious Radiation," *Physical Review D* vol. 77, 044027 (2008).
80. I Hinder, B. Vaishnav, F. Herrmann, D. Shoemaker, and P. Laguna, "Circularization and Final Spin in Eccentric Binary Black Hole Inspirals," *Physical Review D* vol. 77, 081502, (2008).
81. F. Herrmann, I. Hinder, D. Shoemaker, P. Laguna and R. Matzner, "Binary Black Holes: Spin Dynamics and Gravitational Recoil," *Physical Review D* vol. 76, 084032, (2007).
82. B. Vaishnav, I. Hinder, F. Herrmann, and D. Shoemaker, "Matched Filtering of Numerical Relativity Templates of Spinning Binary Black Holes," *Physical Review D* vol. 76, 084020 (2007).
83. F. Herrmann, I. Hinder, D. Shoemaker, P. Laguna and R. Matzner, "Gravitational Recoil from Spinning Binary Black Hole Mergers," *Astrophysical Journal* vol. 661, pp. 430-436 (2007).
84. F. Herrmann, I. Hinder, D. Shoemaker, and P. Laguna, "Unequal-Mass Binary Black Hole Plunges and Gravitational Recoil," *Classical and Quantum Gravity* vol. 24, pp. S33-S42 (2007).
85. H. Pfeiffer, L. Kidder, M. Scheel and D. Shoemaker, "Initial Data for Einstein's Equations with Superposed Gravitational Waves," *Physical Review D* vol. 71, 024020 (2005).
86. L. Lindblom, M. Scheel, L. Kidder, H. Pfeiffer, D. Shoemaker, and S. Teukolsky, "Controlling the Growth of Constraints in Hyperbolic Evolution Systems," *Physical Review D* vol. 69, 124025 (2004).

87. M. Alcubierre, G. Allen, C. Bona, D. Fiske, T. Goodale, F. Guzman, I. Hawke, S. Hawley, S. Husa, M. Koppitz, C. Lechner, D. Pollney, D. Rideout, M. Salgado, E. Schnetter, E. Seidel, H. Shinkai, B. Szilagyi, D. Shoemaker, R. Takahashi, J. Winicour, "Toward Standard Testbeds for Numerical Relativity," *Classical and Quantum Gravity* vol. 21, pp. 589-608 (2004).
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90. O. Dreyer, B. Krishnan, E. Schnetter, D. Shoemaker, "Introducing Isolated Horizons in Numerical Relativity," *Physical Review D* vol. 67, 024018 (2003)
91. P. Laguna and D. Shoemaker, "Numerical Stability of a New Conformal-Traceless 3+1 Formulation of the Einstein Equation," *Classical and Quantum Gravity* vol. 19, pp. 3679-3686 (2002).
92. B. Kelly, P. Laguna, K. Lockitch, J. Pullin, E. Schnetter, D. Shoemaker, M. Tiglio, "A Cure for Unstable Numerical Evolutions of Single Black Holes: Adjusting the Standard ADM Equations," *Physical Review D* vol. 64, 084013 (2001).
93. Gentle, D. Holz, A. Kheyfets, P. Laguna, W. Miller and D. Shoemaker, "Constant Crunch Coordinates for Black Hole Simulations," *Physical Review D* vol. 63, 064024 (2001).
94. S. Brandt, R. Correll, R. Gomez, M. Huq, P. Laguna, L. Lehner, P. Marronetti, R. Matzner, D. Neilsen, J. Pullin, E. Schnetter, D. Shoemaker and J. Winicour, "Grazing Collisions of Black Holes via the Excision of Singularities," *Physical Review Letters* vol. 85, pp. 5496-5499 (2000).
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99. Cook, G.B., M. F. Huq, S. Klasky, M. A. Scheel, A. M. Abrahams, A. Anderson, P. Anninos, T. W. Baumgarte, N. T. Bishop, S. R. Brandt, J. C. Browne, K. Camarda, M. W. Choptuik, C. R. Evans, L. S. Finn, G. Fox, R. Gomez, T. Haupt, L. E. Kidder, P. Laguna, W. Landry, L. Lehner, J. Lenaghan, R. L. Marsa, J. Masso, R. A. Matzner, S. Mitra, P. Papadopoulos, M. Parashar, L. Rezzolla, M. E. Rupright, F. Saied, P. E. Saylor, E. Seidel, S. L. Shapiro, D. Shoemaker, L. Smarr, B. Szilagyi, S. A. Teukolsky, M. H. P. M. van Putten, P. Walker, J. Winicour, J. W. York Jr, "Boosted Three-Dimensional Black-Hole Evolutions with Singularity Excision," *Physical Review Letters* vol. 80, pp. 2512-2516 (1998) .
100. Gomez, R., L. Lehner, R. L. Marsa, J. Winicour, A. M. Abrahams, A. Anderson, P. Anninos, T. W. Baumgarte, N. T Bishop, S. R. Brandt, J. C. Browne, K. Camarda, M. W. Choptuik, G. B. Cook, C. R. Evans, L. S. Finn, G. Fox, T. Haupt, M. F. Huq, L. E. Kidder, S. Klasky, P. Laguna, W. Landry, J. Lenaghan, J. Masso, R. A. Matzner, S. Mitra, P.

Papadopoulos, M. Parashar, L. Rezzolla, M. E. Rupright, F. Saied, P. E. Saylor, M. A. Scheel, E. Seidel, S. L. Shapiro, D. Shoemaker, L. Smarr, B. Szilagyi, S. A. Teukolsky, M. H. P. M. van Putten, P. Walker, J. W. York Jr, ``Stable Characteristic Evolution of Three-Dimensional Single-Black-Hole Space-Times,'' *Physical Review Letters* vol. 80, pp. 3915-3918 (1998).

101. R. Matzner, M. Huq, A. Botero, D. Choi, U. Kask, J. Lara, S. Liebling, D. Neilsen, P. Premadi and D. Shoemaker. "Analysis of 'Gauge Modes' in Linearized Relativity," *Classical and Quantum Gravity* vol. 14, pp. L21-L25 (1997).

B2. Conference Presentations with Proceedings (Refereed)

102. J. Clark, L. Cadonati, J. Healy, I. S. Heng, J. Logue, N. Mangini, L. London and L. Pekowsky and D. Shoemaker, ``Investigating Binary Black Hole Mergers with Principal Component Analysis,'' Proceedings of the Third Session of the Sant Cugat Forum on Astrophysics, Astrophysics and Space Science Proceedings, vol. 40, 281 (2015).
103. D. Shoemaker, K. Jani, L. London and L. Pekowsky, ``Connecting Numerical Relativity and Data Analysis of Gravitational Wave Detectors'', Proceedings of the Third Session of the Sant Cugat Forum on Astrophysics, Astrophysics and Space Science Proceedings, vol. 40, 245 (2015).
104. R. Sturani, S. Fischetti, L. Cadonati, G. Guidi, J. Healy D. Shoemaker and A. Vicere, "Complete phenomenological gravitational waveforms from spinning coalescing binaries," *Journal of Physics Conference Series* vol. 243 012007 (2010).
105. D. Shoemaker, H. Pfeiffer, L. E. Kidder, P. Laguna, L. Lindblom, M. A. Scheel and S. A. Teukolsky, "Mining for Observables: A New Challenge in Numerical Relativity," Recent Advances in Astronomy and Astrophysics 7th International Conference of the Hellenic Astronomical Society 2005, AIP Conference Proceedings vol. 848 Solomos, edited by H. Nikolaos (2007).
106. F. Herrmann, I. Hinder, D. Shoemaker, and P. Laguna, "Binary Black Hole Inspirals," LISA: Sixth International LISA Symposium, AIP Conference Proceedings, vol. 873, Springer Press, edited by S. Merkowitz and J. Livas (2006).
107. B. Vaishnav, D. Shoemaker, and S. Larson, "The Impact of Finite-Differencing Errors on Binary Black Hole Merger Templates," LISA: Sixth International LISA Symposium, AIP Conference Proceedings, vol. 873, Springer Press, edited by S. Merkowitz and J. Livas (2006).
108. E. Bentivegna, P. Laguna and D. Shoemaker, "The Effect of Gauge Conditions on Waveforms from Binary Black Hole Coalescence," LISA: Sixth International LISA Symposium, AIP Conference Proceedings, vol. 873, Springer Press, edited by S. Merkowitz and J. Livas (2006).
109. P. Laguna and **D. Shoemaker**, "Computational Black Hole Dynamics,'' in Proceeding of the Second Aegean Summer School on the Early Universe, Ermoupoli, Syros, Greece (2005).

B3. Other Refereed Material

No Data

B4. Submitted Journal Articles (with date of submission)

110. Deborah Ferguson, Evelyn Allsup, Surendra Anne, Galina Bouyer, Miguel Gracia-Linares, Hector Iglesias, Aasim Jan, Pablo Laguna, Jacob Lange, Erick Martinez, Filippo Meoni, Ryan Nowicki, Deirdre Shoemaker, Blake Steadham, Max L. Trostel, Bing-Jyun

Tsao, Finny Valorz, ``Second MAYA Catalog of Binary Black Hole Numerical Relativity Waveforms'', submitted to PRD August 2023

111. H. L. Iglesias, J. Lange, I. Bartos, S. Bhaumik, R. Gamba, V. Gayathri, A. Jan, R. Nowicki, R. O'Shaughnessy, D. Shoemaker, R. Venkataramanan, K. Wagner, ``Reassessing candidate eccentric binary black holes: Results with a model including higher-order modes'' arXiv:2208.01766
112. A. Jan, D. Ferguson, J. Lange D. Shoemaker, and A. Zimmerman, Aaron, Accuracy limitations of existing numerical relativity waveforms on the data analysis of current and future ground-based detectors, arXiv:2312.10241, submitted to Physical Review D (2024)
113. LISA Consortium Waveform Working Group, Waveform Modelling for the Laser Interferometer Space Antenna, arXiv:2311.01300, submitted to Living Reviews (2024)

B5. In Preparation

114. A. Medina-Díez, J. Llobera Querol, D. Shoemaker and T. Bogdanovíc, ''Discerning the importance of the secondary black-hole spin from measurements of gravitational wave recoil,'' in preparation

C. Other Publications

115. NASA LISA Study Team, ``Getting Ready for LISA: The Data, Support and Preparation Needed to Maximize US Participation in Space-Based Gravitational Wave Science arXiv:2012.02650 (Feb 28, 2020)
116. LISA Collaboration, ``Prospects for Fundamental Physics with LISA'', arXiv:2001.09793
117. K. Holley-Bockelmann et al, ``Building a Field: The Future of Astronomy with Gravitational Waves A State of the Profession Consideration for Astro2020,'' arxiv:1912.07642
118. S. Teukolsky et al, ``The Architect of the LISA Science Analysis, '' Keck Institute for Space Studies (2019)
119. J. Baker et al, ``Space Based Gravitational Wave Astronomy Beyond LISA,'' arxiv:1907.11305 (2019)
120. J. Baker et al, ``The Laser Interferometer Space Antenna: unveiling the millihertz gravitational wave sky,'' arxv:1907.06482
121. E. Berti et al, `` Tests of General Relativity and Fundamental Physics with Space-based Gravitational Wave Detectors,'' White Paper submitted to Astro2020 Decadal Survey (2019)
122. P. Natarajan et al, ``Disentangling Nature from Nurture: Tracing the Origin of Seed Black Holes," Astro2020 Decadal Survey White Paper (2019)
123. J. Baker et al, ``The Laser Interferometer Space Antenna: Unveiling the Millihertz Gravitational Wave Sky,'' White Paper submitted to Astro2020 Decadal Survey (2019)
124. D. Shoemaker, "AstroIdeas: What is making waves in gravity?" Astronomy Magazine vol. 37 (2009).
125. D. Shoemaker, ``Reminiscences of an Undergraduate Astronomy Researcher,'' Science Journal, vol. 10, no. 1, (1992).

D. Presentations

Invited presentations at conferences:

1. ``Using Gravitational Waves to Make Discoveries", Second Annual Workshop on Machine Learning, Oden Institute, UT Austin, October 3, 2024
2. ``Massive Black Hole Binaries Waveform Modeling'' LISA Data Generation Workshop, Paris France, November 15 2023.
3. ``Waveforms'', Fundamental Physics Working Group of LISA face to face meeting, Copenhagen, Denmark, August 11 2023
4. ``Waveforms for LISA and 3G Gravitational Wave Detectors,'' Plenary at the LISA Symposium, July 29 2022
5. ``Snowmass'', Ist International workshop for gravitational wave detection of the moon, Cascina Italy, October 15 2021
6. ``Cosmic Frontier CF5'' update during the CMBS4 conference, August 12 2021, online
7. ``Waveforms,'' Gravitational Waves – A new window to the Universe at the Institut Physique de l'Univers, Aix Marseille Université, July 7 2021
8. ``Black Holes Never Die, They Merge,'' European Astronomical Society 2021, July 13 2021
9. ``Numerical Relativity in the Era of Gravitational Waves, '' VII Leopoldo Garcia-Colin Mexican Meeting on Mathematical and Experimental Physics, Mexico City, Mexico February 2020
10. ``Numerical Relativity in the Era of Gravitational Waves, '' Structure Preservation and General Relativity, Isaac Newton Institute, Cambridge, England, October 2020
11. ``Numerical Relativity and Gravitational Waves, '' Taj Alexander Meeting, Alajar, Spain August 2019
12. ``Numerical Relativity in the Era of Precision Gravity,'' SCIMMA Conference, University of California Berkeley May 2019
13. ``Numerical Relativity in the Gravitational Wave Era,'' EinsteinToolkit Meeting, June 20 2018
14. ``Probing Merging Dynamics with Scalar Waves,'' Focus Session on Dynamical Horizons, Penn State July 2018
15. ``Binary Black Holes: Sources of Nonlinear Gravity,'' Sackler Conference, Harvard University, May 7 2018
16. ``Black Holes, Neutron Stars and the Birth of Gravitational Wave Astronomy,'' IceCube Collaboration Meeting, Atlanta GA May 11 2018.
17. ``Black Holes, Neutron Stars and the Birth of Gravitational Wave Astronomy,'' Veritas Collaboration Meeting, Atlanta GA February 2 2018
18. ``Analytical and Numerical Modeling of Binary Sources: State of the Art and Prospects,'' Keck Institute of Space Sciences Architecture of LISA Workshop January 16 2018
19. NBI Kavli Summer School, University of Copenhagen, Denmark July 10-14 2017
20. ``Binary Black Holes,'' Black Hole Initiative Inaugural Conference, May 8 2017 Boston, MA
21. ``Black Hole Basics," American Association of Physics Teachers, Atlanta GA February 20 2017
22. 2nd Fudan Winter School on Astrophysical Black Holes 4 Lectures on Gravitational Waves January 9-14 2017, Shanghai China.
23. "Numerical Relativity and the first Detection of Gravitational Waves," Invited Plenary speaker at NEB-17, Recent Developments in Gravity, in Mykonos, Greece, during 19-22 September 2016.
24. "Numerical Relativity and the first Detection of Gravitational Waves", Invited Keynote

Speaker at Conference on Computational Interdisciplinary Sciences (CCIS) November 7-10 2016, National Institute for Space Research, São José dos Campos, Brazil.

25. ``Numerical Relativity in the first Detections of Gravitational Waves", Invited Plenary NEB 17 Hellenic Society on Relativity, Gravitation and Cosmology, September 19 2016.
26. "Beyond Gravitational Wave Detection," Invited Panelists at the GR@100++ Conference in Princeton, NJ April 7, 2016.
27. "Role of Numerical Relativity in the Hunt for Gravitational Waves," Invited Talk at the American Physical Society Bouchet Award Session, April 17 2016
28. ''Testing Gravitational Wave Searches with Numerical Relativity,'' Gravitational Waves: From Theory to Observations, 8th Aegean Summer School, July 1, 2015.
29. ``Confronting Theory with Data: Are we Ready?" Invited Plenary, 11th Edoardo Amaldi Conference on Gravitational Waves, Korea, June 25, 2015.
30. ``Beyond the first detections,'' Workshop on Black Holes and Gravitational Waves, Wales, May 12, 2015.
31. ``Connecting Numerical Relativity and Data Analysis of gravitational wave detectors,'' Plenary talk 3rd Session of the Sant Cugat Forum on Astrophysics (Sant Cugat, Barcelona, Spain; April 22nd to April 25th, 2014.
32. Invited talk at the XXVI IUPAP Conference on Computational Physics, Boston MA August 11-14 2014
33. ``Lessons From and About Gravitational Waves from the Merger of Intermediate Mass Black Holes," Invited talk at Astro-GR@Atlanta 19 November 2013.
34. ``The Hunt for Gravitational Waves and Black Holes,'' Plenary Talk at "Connections for Women Mathematical General Relativity, September 4, 2013 at the MSRI, Berkeley CA.
35. "Black Holes and Gravitational Waves: The quest to verify Einstein's predictions," Plenary talk at the NEB 15 Recent Developments in Gravity 23 June 2012.
36. "Challenges in Numerical Simulations of Gen. Rel. Collapse," invited talk at Exploring New Horizons with Gravitational Waves, Hannover, Germany 8 June 2012.
37. "Numerical Relativity," Plenary Talk at the 9th LISA Symposium in Paris, France 25 May 2012.
38. "Mano-a-mano," inviting joint talk with Steve Liebling at the Gravitational Wave Burst meeting in Tobermory, Scotland 28 May 2012.
39. "Numerical Relativity and the Hunt for Gravitational Waves", Atlanta Meets Tuebingen, Tuebingen, Germany, 19 July 2011.
40. "Introducing NINJA: A Gravitational Wave Community Project," invited talk at the Southeast APS Meeting, Baton Rouge LA, 21 Oct 2010.
41. "Gravity's Strongest Grip: A Computing Challenge," invited talk at the Gravity Mini-Symposium at the NSF, Washington D.C., 8 Oct 2010.
42. "Computing Gravity's Strongest Grip for Gravitational Wave Astronomy", Southeastern APS meeting, Atlanta GA, 12 November 2009.
43. "Science Goals for NINJA 2 - NR-BBH Perspective," joint talk with Husa, Pfeiffer and Shoemaker, NRDA 2009 meeting in AEI, Golm, Germany July 9, 2009.
44. "A New Era in Gravity," Supercomputing 2008, Austin, TX, Nov 19, 2008.
45. "Coupling Simulations to Data Analysis Observations," invited talk at Post Newtonian meets Numerical Relativity 2008 in Jena, Germany, June 2008.
46. "Computing Gravity's Strongest Grip," invited talk at APS meeting, April 15 2008.
47. "Numerical Relativity and Data Analysis: Are We There Yet?" RAMFest in honor of Richard Matzner's 65th Birthday, University of Texas at Austin, June 8,2007.
48. "Binary Black Holes and Their Echoes in the Universe," Institute for Strings, Cosmology and Astroparticle Physics Seminar, Columbia University, May 11, 2007.
49. "Binary Black Hole Mergers," Saul Teukolsky Symposium in Honor of his 60th Birthday, Cornell University, June 2, 2007.

50. “Numerical Relativity @ PSU,” Astrophysical Applications of Numerical Relativity Workshop in Guanajuato, Mexico, May 7, 2006.
51. “Gravitational Waves”, **Plenary Talk**, Kavli Institute Inaugural Symposium in Honor of David Schramm, University of Chicago, December 10, 2005.
52. “Numerical Relativity”, Second Gravitational Wave Phenomenology Workshop, November 6-8 2003.
53. “Simulating a Distorted Black Hole”, Gravitational Interactions of Compact Objects Workshop, Kavli Institute for Theoretical Physics, University of California at Santa Barbara, CA July 10, 2003.
54. “Black Hole Excision”, A Decennial Perspective, Penn State, University Park, PA. June 8, 2003.
55. “Computation of Horizons and Excision”, Hot Topics Workshop on Numerical Relativity, Institute for Mathematics and Its Applications, University of Minnesota, Minneapolis, Minnesota, June 27, 2002.
56. “Numerical stability of a new conformal-traceless 3+1 formulation of the Einstein equation”, Workshop on Formulations of Einstein Equations for Numerical Relativity, Mexico City, Mexico, May 15, 2002.

Invited presentations at universities & institutes:

1. ``Numerical Relativity’s Continued Impact on Gravitational Waves,'' February 6 2025 APS Division of Gravitational Physics Seminar Series
2. ``The LISA consortium: vision on its role going forward and how to get involved,'' Gravitational Wave Science Interest Group Summer Webinar Series, June 35 2025
3. ``Brave New World of Numerical Relativity,'' Physics Colloquium, UIUC October 5 2022
4. ``Brave New World of Numerical Relativity`, Princeton Physics and Astronomy Colloquium September 20, 2022.
5. `Brave New World of Numerical Relativity'', Texas Tech Department of Physics and Astronomy Colloquium, March 22, 2022
6. ``Brave New Worlds of Numerical Relativity'', UT Dallas Department of Physics and Astronomy Colloquium, December 1, 2021
7. ``Gravitational Waves, Black holes and Relativity,'' Oden Institute Seminar, September 23 2021
8. ``Future Prospects for NR in Gravitational Wave Astronomy,'' ICERM Workshop Advances and Challenges in Computational Relativity, September 16 2021
9. ``Numerical Relativity in the Age of Gravitational Wave Detection,'' University of Tennessee Colloquium, Knoxville TN October 12 2020.
10. Numerical Relativity in the Age of Gravitational Wave Detection,'' ICERM Workshop on Mathematical and Computational Approaches for Solving the Source- Free Einstein Field Equations, Brown University, Providence RI, October 5 2020.
11. ``The Birth of Gravitational Wave Astronomy'' University of Burgos, Spain, December 2019
12. `` Black Holes Across the Gravitational Wave Sky” Physics Colloquium at University of Texas at Austin September 2019
13. ``Black Holes Across the Gravitational Wave Sky,'' Steward Observatory/NOAO joint colloquium, University of Arizona, October 11 2018.
14. ``Prospects for Strong Field gravity in Gravitational Wave Astronomy,'' Astronomy Seminar, Los Alamos National Lab, April 17 2018.
15. `` Prospects for Strong Field gravity in Gravitational Wave Astronomy,'' University of Mississippi, April 24, 2018.
16. `` Numerical Relativity and the first Detection of Gravitational Waves,'' Institute for

Gravitation and the Cosmos Seminar, Penn State April 28 2017
17. “Numerical Relativity and the first Detection of Gravitational Waves,” Colloquium at the Institute for Theory and Computing at Harvard University, February 23, 2017.
18. ``Numerical Relativity in the first detections of gravitational waves,” Invited Seminar at the Brazilian Center for Research in Physics November 3, 2016.
19. ``Numerical Relativity in the first detections of gravitational waves,” Colloquium at the University of Alabama Oct 45 2016.
20. ``The Promise of Strong-Field General Relativity with Black Hole Binaries,'' Caltech TAPIR Seminar, March 20, 2015.
21. “The Hunt for Gravitational Waves and Black Holes: Were Einstein's Predictions Right?” Colloquium at University of North Carolina, Chapel Hill, NC 28 January 2013.
22. “The Hunt for Gravitational Waves and Black Holes: Were Einstein's Predictions Right?” Colloquium at University of Alberta 2 Nov 2012.
23. “Black Holes and Gravitational Waves: The Quest to Verify Einstein’s Predictions,” Physics & Astronomy Department Colloquium, University of Georgia, 1 December 2011.
24. “Black Holes and Gravitational Waves: The Quest to Verify Einstein’s Predictions,” Physics Department Colloquium, Lehigh University, 17, November 2011.
25. “Frontier’s of Numerical Relativity,” Colloquium at Vanderbilt University on 14 April, 2011.
26. “Gravity’s Strongest Grip: A Computational Challenge”, CSE Seminar at Georgia Tech, 22 Oct 2010.
27. “Numerical Relativity as a Tool for Gravitational Wave Astronomy,” Astrophysics Colloquium, Stanford University, 18 March 2010.
28. “Numerical Relativity as a Tool for Gravitational Wave Astronomy” Physics Department Colloquium, Florida Atlantic University, 6 November 2009.
29. “Lessons on Astrophysics from Numerical Relativity”, Physics Department Colloquium The University of Mississippi, October 20, 2009.
30. “Simplicity of Binary Black Hole Coalescence and its Implications for Detection,” Caltech-JPL Association for Gravitational Wave Research Seminar, Caltech, Feb 10, 2009.
31. “Simplicity of Binary Black Hole Coalescence and its Implications for Detection,” Center for Relativity Seminar, University of Texas at Austin, Nov. 18. 2008.
32. “Binary Black Holes and Their Echoes in the Universe” Seminar at University of Maryland, MD, March 27 2008.
33. “Three Lessons on Astrophysics by Numerical Relativity,” Colloquium at the School of Physics, Georgia Institute of Technology, Nov 14, 2007.
34. “Complexity in Gravitational Waveforms from BH Mergers”, Numerical Relativity 2005, Goddard Space Flight Center, MD, November 2, 2005.
35. “Mining for Observables: A New Challenge for Numerical Relativity”, Astrophysics Seminar, Northwestern University, March 1 2005.
36. “Building Bridges to Data: A New Challenge in Numerical Relativity”, Institute for Gravitational Physics and Geometry Seminar, Penn State, October 4, 2004.
37. “The Elusive Binary Black Hole Coalescence”, Seminar at Center for Cosmological Physics, University of Chicago, Chicago, IL, May 30, 2003.
38. “Horizons: Unveiling Physics of Gravitational Wave Source Simulations” Seminar at Center for Gravitational Physics and Geometry Penn State, University Park, PA February 23, 2003.
39. “Bouncing Black Holes and Isolated Horizons”, Colloquium, NASA Goddard Space Flight Center, Maryland, November 27, 2001.

Contributed presentations at conferences:

40. ``Merging Intermediate Mass Black Holes in LIGO and LISA'', AAS, Seattle, WA, January 2019
41. ``The Impact of Junk Radiation on Numerical Relativity Waves,'' Amaldi/GR22, July 2019
42. ``Numerical Relativity in the LISA Era,'' APS April Meeting, April 2019
43. ``Merging Intermediate Mass Black Holes in LIGO and LISA'', AAS, Seattle, WA January 2019
44. ``From NR to GWs for BBHs", Workshop on Astrophysics and Relativity: Astro-GR 2015, Brazil, August 2015.
45. ''BBH Classification Using Principal Component Analysis,'' April APS 2015 Meeting, April 13, 2015 Baltimore MD.
46. Binary Black Holes and Gravitational Waves," NEB16, Recent Developments in Gravity, Greece Sep 17 2014 (cancelled due to family emergency)
47. ``Identification of BBH Merger Phenomenology Through Principal Component Analysis," APS April Meeting 2014
48. ``Binary Black Hole Gravitational Waves: Simple or Complex?" Gravitational Waves Revolution in Astronomy and Astrophysics, Kyoto Japan, 6 June 2013.
49. `` BBH GWs: Simple of Complex, '' 3rd Iberian Gravitational-Wave Meeting, 21 March 2013, Valencia Spain.
50. "Choosing Precessing Black Holes Simulations" NRDA-Amadli 2011, Cardiff, Wales, 11 July 2011.
51. "Understanding Merging Black Holes as Burst Sources of Gravitational Waves," GR19, 19th International Conference on General Relativity and Gravitation in Mexico City, Mexico, July, 2010.
52. "Using Numerical Relativity for Gravitational Wave Astrophysics," NRDA 2009 meeting, AEI, Golm, Germany July 6, 2009.
53. "Exploring Use of NR Waveforms in Burst Analyses of BBH Mergers," APS April meeting, Denver, CO, May 5, 2009.
54. "BBH Merger and Gravitational Wave Detection," Numerical Relativity and Data Analysis Meeting 2008, Syracuse, NY, August 2008.
55. "Coupling Simulations with Data Analysis and Observations," 7th International LISA Symposium, Barcelona, Spain, June 2008.
56. "NRmDA: Spinning BBH Case," 7th Edoardo Amaldi Conference on Gravitational Waves, Sydney, Australia, July 2007.
57. "Spurious Radiation in BBH Evolutions," 18th International Conference on General Relativity and Gravitation, Sydney, Australia, July 2007.
58. "Matched Filtering and Convergence of Numerical Relativity Templates," American Physical Society, Jacksonville FL, April 16, 2007.
59. "Spinning Black Holes, Kicks and Match," Numerical Relativity meets Post Newtonian Meeting, St. Louis MO, February 10 2007.
60. "Unequal Mass Binary Black Hole Mergers \& Kicks," American Physical Society, Dallas TX, April 24, 2006.
61. "Binary Black Holes Through the Eyepiece of Data Analysis," VII Mexican School on Gravitation and Mathematical Physics, Playa del Carmen, Mexico, November 30, 2006.
62. "Mining for Observables: A New Challenge in Numerical Relativity", 7th Helas Conference, Kefallinia, Greece, September 8, 2005.
63. "Dynamics of a Scalar Field on the Frozen Background of a Binary Black-Hole Spacetime", GR17, Dublin, Ireland, July 2004.
64. "Nonlinear generation of harmonics in highly distorted black holes", Advanced School and Conference on Sources of Gravitational Waves, Trieste, Italy, September 2003.

65. “Nonlinear generation of harmonics in highly distorted black holes”, American Physical Society, Philadelphia, PA April 2003
66. “A Dancing Black Hole”, American Physical Society, Albuquerque, New Mexico, April 2002.
67. “Bouncing Black Holes”, 11th Midwest Gravity Meeting, Waterloo, Ontario, October 2001.
68. “Numerical Simulations of Black Holes with Excision”. American Physical Society, Washington D.C., April 2001.
69. “Supercomputers as Black Hole Colliders”, Board of Visitors, Department of Astronomy and Astrophysics, April 2001.
70. “From Binary Black Holes to a Single Black Hole: Back to Basics”, Texas Symposium, Austin TX, December 2000.
71. “Single Black Holes: Back to Basics”, NSF Site Visit to the Center for Gravitational Physics and Geometry, Penn State, October 2000.
72. “Apparent Horizons: From Merger Toward Ringdown”, Marcel Grossman IX, Rome, Italy, July 2000.
73. “A Black Hole Grazing Collision”, Marcel Grossman IX, Rome, Italy, July 2000.
74. “Apparent Horizons: From Merger toward Ringdown”, American Physical Society, Long Beach, California, April 2000.
75. “A Black Hole Grazing Collision”, East Coast Gravity Meeting, Pittsburgh, PA, March 2000.
76. “Tracking Multiple Apparent Horizons using Level Flow”, Seminar at the Center for Gravitational Physics and Geometry, Penn State, September 1999.
77. “Apparent Horizons in a Binary Black Hole Merger”, Final Defense, The University of Texas at Austin, Department of Physics, August 1999.
78. “Apparent Horizons in Black Hole Space-times”, American Physical Society Centennial Meeting Session, Atlanta, Georgia, March 1999.
79. “Apparent Horizons in the Grand Challenge”, Apparent Horizons Boundary Conditions Workshop, Max-Planck-Instituet fuer Gravitationphysik Potsdam, Germany, December 1998.
80. “Apparent Horizons in the Grand Challenge” Binary Black Hole Conference Austin, TX, November 1998.
81. “Apparent Horizon Tracking”, Center for Relativity Seminar, The University of Texas at Austin, October 1998.
82. “Development of the Mean Curvature Flow Method for Tracking Apparent Horizon”, Center for Relativity Seminar, The University of Texas at Austin, November 1997.

H. Other Professional Activities

Chair of the APS Division for Gravitational Physics
Member of the LISA Scientific Consortium
Member of the LIGO Scientific Collaboration since 2014
Chair of the APS April Meeting 2020
Member of the XSEDE User Advisor Committee
Member of the International Society of Gravitation Nominating Committee
Member of the LIGO Scientific Speakers Board and Diversity, Equity and Inclusion Committee
Member of the LISA User Group
Member of the European Gravitational Observatory Scientific and Technical Advisory Committee

B. PhD Students

Deborah Ferguson	Ph.D. Georgia Tech 2020
Karan Jani	Ph.D. Georgia Tech 2017
Lionel London	Ph.D. Georgia Tech 2015
Tanja Bode	Ph.D. Penn State 2009
Elisa Bentivegna	Ph.D. Penn State 2008
Birjoo Vaishnav	Ph.D. Penn State 2008

VI. Service

A. Professional Contributions

Conference Organizing:

MLSE 2018@ Carnegie Mellon
MLSE 2019@ Georgia Tech
LISA Consortium 2022
Intermediate Mass Black Holes: New Science from Stellar Evolution to Cosmology 2022

Professional Societies:

Elected member of the Weber Prize Committee, AAS (2019)
International Astronomical Union
International Astronomical Union Commission on Gravitational Wave Astrophysics
APS Division of Gravitational Physics
APS Division of Computational Physics
APS Division of Astrophysics
American Physical Society
American Astronomical Society
International Society on General Relativity and Gravitation
Phi Beta Kappa National Honor Society
Sigma Pi Sigma National Honor Society
Golden Key National Honor Society

Editorial Board Memberships:

Editorial Board of Classical and Quantum Gravity Journal (2014 – present)
Editorial Board International Journal of Modern Physics D (2013-2018)

Peer Reviewing:

Manuscripts reviewed (~25 per year total) for:
Physical Review, Classical Quantum Gravity, Astrophysical Journal, Monthly Notices of the Royal Society

Proposals reviewed for:
NSF, NASA, DFB (Deutsche Forschungsmeinschaft, Germany), Cottrell DiRAC (Distributed Research Utilising Advanced Computing, UK), NMW (Netherlends)

B. Public and Community Service

1. ``How are gravitational waves advancing our understanding of the universe?", Duncan Lecture, Auburn University, March 12 2021
2. Georgia Regional Astronomy Meeting Keynote ``Black Holes and Gravitational Waves: Einstein's Legacy'' October 27 2017
3. NYC Pioneer Works Outreach Talk August 13 2017
4. TedX GT Talk on April 22 2017
5. Featured in GT's Creating the Next video 2017

6. Public Talk “Rips and Ripples: Our Amazing Universe,” University of Alabama, Oct 4 2016.
7. Family Weekend at Georgia Tech, “Rips and Ripples: Our Amazing Universe”, Sept 30, 2016.
8. Featured in Atlanta Magazine, September 2016 Issue, “Making Waves”
9. Quoted by CNN, “Gravitational Waves Detected – and that’s creating waves in science” February 11 2016
10. Interviewed for the Whistle, 2016
11. Atlanta Science Tavern Gravitational Wave Event February 2016
12. Quoted inn Sky and Telescope Magazine, December 2015 issue.
13. Filmed GT YouTube video, “Lightspeed” December 17 2015
14. Atlanta Science Festival Event ``Celebrating Gravity, Light and Einstein'' on March 25, 2015.
15. CRA Distinguished Lecture George Efstathiou April 7, 2015
16. CRA Distinguished Lecture Naoki Yoshida December 5, 2014
17. Interviewed by Ms. Beatriz Mora for school project at MIT July 21 2014
18. MCRI Youth Entrepreneurship Club Mentor (2014 -- present)
19. Supervising High School Student Sarayu Narayan (2014 -- present)
20. First Atlanta Astro jamboree with Mike Eracleous January 2014
21. Judge for Tech Talks Atlanta Science Festival March 26 2014
22. CRA visit with Neil Degrasse Tyson “Ambassadors of Science” April 1, 2014
23. CRA “Science at the Bistro” event March 11, 2014
24. ``Electromagnetic & Gravitational Waves: Messengers of the Cosmos," lecture for middle school teachers of Fulton County (15 June 2011) and DeKalb County (28 June 2011) at Georgia Tech
25. WitsonMentor October 11 2012
26. D2D outreach activities 2012 and 2013
27. Interviewed for the Whistle 2011
28. Started Google+ and CRA with Jim Richards
29. Initiated CRA talks at Public Night with Jim Sowell