# September 2019

Deirdre Shoemaker, Ph.D.

Dunn Family Professor of Physics

Director of the Center for Relativistic Astrophysics

Associate Director of the Institute of Data and Engineering Science

School of Physics

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**I. Earned Degrees**

B.S. Astronomy & Astrophysics 1990-1994 Pennsylvania State University

with Honors and Physics

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-present Director, Center for Relativistic Astrophysics

2016-present Professor, Physics, Georgia Institute of Technology

2016-present Adjunct Professor, School of Computational Science and Engineering, Georgia Institute of Technology

2017-present Associate Director of Research and Strategic Initiatives, Institute of Data , Engineering and Science, Georgia Institute of Technology

**III. Honors and Awards**

2019 Elected International Society of General Relativity and Gravitation USA Committee Member

2019 Elected to the Astronomy and Astrophysics Advisory Council (AAAC)

2019 Nominating Committee Elections International Society of General Relativity and Gravity

2018 Named Co-chair of the LISA waveform Working Group

2018 Asked to Lead LISA Consortium waveform package 1.3.1 for NR BBH waveforms

2018 Named to F1000Prime Section Head of Theory, Modeling, and Astrophysics

2018 Invited to the Great Observatories Science Analysis Group (SAG)

2017 Named to the NASA LISA Study Team

2017 Named to APS April Program Committee

2017 Dunn Family Professor of Physics, Endowed Professorship

2016 Provost Emerging Leader’s Program

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 Editorial Board International Journal of Modern Physics D (2013-present)

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

1. K. Jani, D. Shoemaker, and C. Cutler, ``Detectability of Intermediate-Mass Black Holes in Multiband Gravitational Wave Astronomy’’, accepted in *Nature Astronomy* (2019)
2. K. Higginbotham, B. Khamesra, J. McInerney, K. Jani, D. Shoemaker, and P. Laguna, `Coping with Spurious Radiation in Binary Black Hole Simulations,’’ accepted in *Physical* *Review D* (2019)
3. D. Ferguson, S. Ghonge, J. Clark, J. Calderon Bustillo, P. Laguna, and D. Shoemaker, ``Measuring Spin of the Remnant Black hOle from Maximum Amplitude,’’ accepted in *Physical Review Letters* (2019)

1. LIGO Scientific and Virgo Collaborations, ``Properties of the Binary Neutron Star Merger GW170817,’’ *Physical Review X* 9, 011001 (2019)
2. J. Calderon Bustillo, J. Clark, P. Laguna and D. Shoemaker, ``Tracking Black Hole Kicks from Gravitational Wave Observations’’, *Physical Review Letters* 121, 191102 (2018)
3. 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)
4. 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)
5. 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)
6. LIGO Scientific and Virgo Collaborations, ``GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral,’’ *Physical Review Letters* 119, 16, 161101 (2017)
7. 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)
8. 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)
9. 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)
10. 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)
11. LIGO Scientific and Virgo Collaborations, ``Effects of waveform model systematics on the interpretation of GW150914,'' *Classical Quantum Gravity* 34, no. 10, 104002 (2017
12. 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)
13. 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)
14. LIGO Scientific and Virgo Collaborations, ``Binary Black Hole Mergers in the first Advanced LIGO Observing Run,'' Phys. Rev. X 6, 041015 (2016)
15. 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)
16. LIGO Scientific and Virgo Collaborations, ``An improved analysis of GW150914 using a fully spin-precessing waveform model,'' *Physical Review X* 6, 041014 (2016)
17. 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)
18. LIGO Scientific and Virgo Collaborations, ``Astrophysical Implications of the Binary Black Hole Merger GW150914,” Astrophysical Journal Letters*, vol 818 (2016).*
19. *LIGO Scientific Collaboration*; the Virgo Collaboration. “Tests of General Relativity with GW150914”, '' *Physical Review Letters* vol/ 116, 221101 (2016).
20. LIGO Scientific Collaboration; the Virgo Collaboration, “Observing gravitational-wave transient GW150914 with minimal assumptions”, *Physical Review D* vol 93, 122004 (2016)
21. 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)
22. LIGO Scientific and Virgo Collaborations, ``Properties of the Binary Black Hole Merger GW150914, *Physical Review Letters* vol. 116, 241102 (2016)
23. The LIGO Scientific and Virgo Collaborations, “Observation of Gravitational Waves from Binary Black Hole Merger,” *Physical Review Letters* 116, 061102   (2016)
24. 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).
25. L. London, D. Shoemaker and J. Healy, ``Modeling Ringdown: Beyond the Fundamental Quasi-Normal Modes,’’ *Physical Review D* vol. 90, no. 12, 124032 (2014).
26. 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).
27. 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).
28. N. Andersson et al, “The Transient Gravitational-Wave Sky,” *Classical and Quantum Gravity* vol. 30 193002 (2013).
29. 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).
30. 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).
31. 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).
32. 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).
33. 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).
34. 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)
35. 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).
36. 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).
37. 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).
38. 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).
39. 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).
40. 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).
41. 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).
42. 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).
43. J. Healy, J Levin and D. Shoemaker, “Zoom-Whirl Orbits in Black Hole Binaries,” *Physical Review Letters* vol. 103, 131101 (2009).
44. 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).
45. 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).
46. 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).
47. 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).
48. B. Aylott and the NINJA collaboration, “Status of NINJA: the Numerical INJection Analysis project,” *Classical and Quantum Gravity* vol. 26, 114008 (2009).
49. 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).
50. D. Shoemaker, B. Vaishnav, I. Hinder, and F. Herrmann, “Numerical Relativity meets Data Analysis: Spinning Binary Black Hole Case,’’ *Classical and Quantum Gravity* vol. 25, 114047 (2008).
51. 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).
52. E. Bentivegna, D. Shoemaker, F. Herrmann and I. Hinder, “Probing Binary Black Hole Mergers with Scalar Waves,” *Physical Review D* vol. 77, 124016 (2008).
53. 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).
54. 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).
55. 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).
56. 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).
57. 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).
58. 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).
59. 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).
60. 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).
61. 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).
62. 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).
63. U. Sperhake, K.L. Smith, B. Kelly, P. Laguna and D. Shoemaker, “Impact of Densitized Lapse Slicings on Evolutions of a Wobbling Black Hole,” *Physical Review D* vol. 69, 024012 (2004).
64. D. Shoemaker, K. Smith, E. Schnetter, D. Fiske, P. Laguna, “Moving Black Holes via Singularity Excision,” *Classical and Quantum Gravity* vol. 20, pp. 3729-3744 (2003).
65. O. Dreyer, B. Krishnan, E. Schnetter, D. Shoemaker, “Introducing Isolated Horizons in Numerical Relativity,” *Physical Review D* vol. 67, 024018 (2003) equal co-author and senior author.
66. 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).
67. 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).
68. 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).
69. 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).
70. D. Shoemaker, M. Huq and R. Matzner, “Generic Tracking of Multiple Apparent Horizons with Level Flow,” *Physical Review D* vol. 62, 124005 (2000).
71. P. Marronetti, M. Huq, P. Laguna, L. Lehner, R. Matzner and D. Shoemaker, “Approximate Analytical Solutions to the Initial Data Problem of Black Hole Binary Systems,” *Physical Review D* vol. 62, 024017 (2000).
72. R. Matzner, M. Huq and D. Shoemaker, “Initial Data and Coordinates for Multiple Black Hole Space-Times,” *Physical Review D* vol. 59, 024017 (1999).
73. M. Abrahams, L. Rezzolla, M. E. Rupright, 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, R. Gomez, T. Haupt, M. F. Huq, L. E. Kidder, S. Klasky, P. Laguna, W. Landry, L. Lehner, J. Lenaghan, R. L. Marsa, J. Masso, R. A. Matzner, S. Mitra, P. Papadopoulos, M. Parashar, 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. Winicour and J. W. York Jr, “Gravitational Wave Extraction and Outer Boundary Conditions by Perturbative Matching,” *Physical Review Letters* vol. 80, pp. 1812-1815 (1998).
74. 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) .
75. 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).
76. 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)**

1. 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).
2. 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).
3. 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).
4. 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).
5. 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).
6. 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).
7. 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).
8. 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)**

1. GWTC-1: A Gravitational-Wave Transient Catalog of Compact Binary Mergers Observed by LIGO and Virgo during the First and Second Observing Runs’’, submitted (2018)
2. K. Cahtziiloannou et al, `On the Properties of the Massive Binary Black Hole Merger GW170729’’, submitted (2019)
3. 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 holes”, submitted (2019)

**B5. In Preparation**

1. C. Evans, D. Ferguson, B. Khamesra, P. Laguna and D. Shoemaker, ``Puncture Dynamics”, in preparation

**C. Other Publications**

1. J. Baker et al, ``The LASER Interferometer Space Antenna: Unveiling the Milihertz Gravitational Wave Sky,’’ Astro2020 Decadal Survey White Paper (2019)
2. P. Natarajan et al, ``Disentangling Nature from Nurture: Tracing the Origin of Seed Black Holes,” Astro2020 Decadal Survey White Paper (2019)
3. E. Berti et al, ``Tests of General Relativity and Fundamental Physics with Space-based Gravitational Wave Detectors,’’ Astro2020 Decadal Survey White Paper (2019)
4. D. Shoemaker, “AstroIdeas: What is making waves in gravity?” Astronomy Magazine vol. 37 (2009).
5. D. Shoemaker, ``Reminiscences of an Undergraduate Astronomy Researcher,'' Science Journal, vol. 10, no. 1, (1992).

**D. Presentations**

***Invited presentations at conferences:***

1. ``Numerical Relativity and Gravitational Waves, ‘’ Taj Alexander Meeting, Alajar, Spain August 2019
2. ``Numerical Relativity in the Era of Precision Gravity,’’ SCIMMA Conference, University of California Berkeley May 20198
3. ``Numerical Relativity in the Gravitational Wave Era,’’ EinsteinToolkit Meeting, June 20 2018
4. ``Probing Merging Dynamics with Scalar Waves,’’ Focus Session on Dynamical Horizons, Penn State July 2018
5. ``Binary Black Holes: Sources of Nonlinear Gravity,’’ Sackler Conference, Harvard University, May 7 2018
6. ``Black Holes, Neutron Stars and the Birth of Gravitational Wave Astronomy,’’ IceCube Collaboration Meeting, Atlanta GA May 11 2018.
7. ``Black Holes, Neutron Stars and the Birth of Gravitational Wave Astronomy,’’ Veritas Collaboration Meeting, Atlanta GA February 2 2018
8. ``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
9. NBI Kavli Summer School, University of Copenhagen, Denmark July 10-14 2017
10. ``Binary Black Holes,’’ Black Hole Initiative Inaugural Conference, May 8 2017 Boston, MA
11. ``Black Hole Basics,” American Association of Physics Teachers, Atlanta GA February 20 2017
12. 2nd Fudan Winter School on Astrophysical Black Holes 4 Lectures on Gravitational Waves January 9-14 2017, Shanghai China.
13. “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.
14. “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.
15. ``Numerical Relativity in the first Detections of Gravitational Waves”, Invited Plenary NEB 17 Hellenic Society on Relativity, Gravitation and Cosmology, September 19 2016.
16. “Beyond Gravitational Wave Detection,” Invited Panelists at the GR@100++ Conference in Princeton, NJ April 7, 2016.
17. “Role of Numerical Relativity in the Hunt for Gravitational Waves,” Invited Talk at the American Physical Society Bouchet Award Session, April 17 2016
18. ‘’Testing Gravitational Wave Searches with Numerical Relativity,’’ Gravitational Waves: From Theory to Observations, 8th Aegean Summer School, July 1, 2015.
19. ``Confronting Theory with Data: Are we Ready?" Invited Plenary, 11th Edoardo Amaldi Conference on Gravitational Waves, Korea, June 25, 2015.
20. ``Beyond the first detections,’’ Workshop on Black Holes and Gravitational Waves, Wales, May 12, 2015.
21. ``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.
22. Invited talk at the XXVI IUPAP Conference on Computational Physics, Boston MA August 11-14 2014
23. ``Lessons From and About Gravitational Waves from the Merger of Intermediate Mass Black Holes,” Invited talk at Astro-GR@Atlanta 19 November 2013.
24. ``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.
25. “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.
26. “Challenges in Numerical Simulations of Gen. Rel. Collapse,”invited talk at Exploring New Horizons with Gravitational Waves, Hannover, Germany 8 June 2012.
27. “Numerical Relativity,” Plenary Talk at the 9th LISA Symposium in Paris, France 25 May 2012.
28. “Mano-a-mano,” inviting joint talk with Steve Liebling at the Gravitational Wave Burst meeting in Tobermory, Scotland 28 May 2012.
29. “Numerical Relativity and the Hunt for Gravitational Waves”, Atlanta Meets Tuebingen, Tuebingen, Germany, 19 July 2011.
30. “Introducing NINJA: A Gravitational Wave Community Project,” invited talk at the Southeast APS Meeting, Baton Rouge LA, 21 Oct 2010.
31. “Gravity’s Strongest Grip: A Computing Challenge,” invited talk at the Gravity Mini-Symposium at the NSF, Washington D.C., 8 Oct 2010.
32. “Computing Gravity’s Strongest Grip for Gravitational Wave Astronomy”, Southeastern APS meeting, Atlanta GA, 12 November 2009.
33. “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.
34. “A New Era in Gravity,” Supercomputing 2008, Austin, TX, Nov 19, 2008.
35. “Coupling Simulations to Data Analysis Observations,” invited talk at Post Newtonian meets Numerical Relativity 2008 in Jena, Germany, June 2008.
36. “Computing Gravity's Strongest Grip,” invited talk at APS meeting, April 15 2008.
37. “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.
38. “Binary Black Holes and Their Echoes in the Universe,” Institute for Strings, Cosmology and Astroparticle Physics Seminar, Columbia University, May 11, 2007.
39. “Binary Black Hole Mergers,” Saul Teukolsky Symposium in Honor of his 60th Birthday, Cornell University, June 2, 2007.
40. “Numerical Relativity @ PSU,” Astrophysical Applications of Numerical Relativity Workshop in Guanajuato, Mexico, May 7, 2006.
41. “Gravitational Waves”, **Plenary Talk**, Kavli Institute Inaugural Symposium in Honor of David Schramm, University of Chicago, December 10, 2005.
42. “Numerical Relativity”, Second Gravitational Wave Phenomenology Workshop, November 6-8 2003.
43. “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.
44. “Black Hole Excision”, A Decennial Perspective, Penn State, University Park, PA. June 8, 2003.
45. “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.
46. “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 in the Age of Gravitational Wave Observations,’’ Physics Colloquium, University of Texas at Austin, September 18 2019.
2. ``Black Holes Across the Gravitational Wave Sky,’’ Steward Observatory/NOAO joint colloquium, University of Arizona, October 11 2018.
3. ``Prospects for Strong Field gravity in Gravitational Wave Astronomy,’’ Astronomy Seminar, Los Alamos National Lab, April 17 2018.
4. ``Black Holes, Neutron Stars, and the Birth of Gravitational Wave Astronomy,’’ IceCube Collaboration Meeting, May 11 2019
5. `` Prospects for Strong Field gravity in Gravitational Wave Astronomy,’’ University of Mississippi, April 24, 2018.
6. ``Black Holes, Neutron Stars, and the Birth of Gravitational Wave Astronomy,’’ VERITAS Winter Collaboration Meeting, February 1 2018
7. `` Numerical Relativity and the first Detection of Gravitational Waves,’’ Institute for Gravitation and the Cosmos Seminar, Penn State April 28 2017
8. “Numerical Relativity and the first Detection of Gravitational Waves,” Colloquium at the Institute for Theory and Computing at Harvard University, February 23, 2017.
9. ``Numerical Relativity in the first detections of gravitational waves,” Invited Seminar at the Brazilian Center for Research in Physics November 3, 2016.
10. ``Numerical Relativity in the first detections of gravitational waves,” Colloquium at the University of Alabama Oct 45 2016.
11. ``The Promise of Strong-Field General Relativity with Black Hole Binaries,’’ Caltech TAPIR Seminar, March 20, 2015.
12. “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.
13. “The Hunt for Gravitational Waves and Black Holes: Were Einstein's Predictions Right?” Colloquium at University of Alberta 2 Nov 2012.
14. “Black Holes and Gravitational Waves: The Quest to Verify Einstein’s Predictions,” Physics & Astronomy Department Colloquium, University of Georgia, 1 December 2011.
15. “Black Holes and Gravitational Waves: The Quest to Verify Einstein’s Predictions,” Physics Department Colloquium, Lehigh University, 17, November 2011.
16. “Frontier’s of Numerical Relativity,” Colloquium at Vanderbilt University on 14 April, 2011.
17. “Gravity’s Strongest Grip: A Computational Challenge”, CSE Seminar at Georgia Tech, 22 Oct 2010.
18. “Numerical Relativity as a Tool for Gravitational Wave Astronomy,” Astrophysics Colloquium, Stanford University, 18 March 2010.
19. “Numerical Relativity as a Tool for Gravitational Wave Astronomy” Physics Department Colloquium, Florida Atlantic University, 6 November 2009.
20. “Lessons on Astrophysics from Numerical Relativity”, Physics Department Colloquium The University of Mississippi, October 20, 2009.
21. “Simplicity of Binary Black Hole Coalescence and its Implications for Detection,” Caltech-JPL Association for Gravitational Wave Research Seminar, Caltech, Feb 10, 2009.
22. “Simplicity of Binary Black Hole Coalescence and its Implications for Detection,” Center for Relativity Seminar, University of Texas at Austin, Nov. 18. 2008.
23. “Binary Black Holes and Their Echoes in the Universe” Seminar at University of Maryland, MD, March 27 2008.
24. “Three Lessons on Astrophysics by Numerical Relativity,” Colloquium at the School of Physics, Georgia Institute of Technology, Nov 14, 2007.
25. “Complexity in Gravitational Waveforms from BH Mergers”, Numerical Relativity 2005, Goddard Space Flight Center, MD, November 2, 2005.
26. “Mining for Observables: A New Challenge for Numerical Relativity”, Astrophysics Seminar, Northwestern University, March 1 2005.
27. “Building Bridges to Data: A New Challenge in Numerical Relativity”, Institute for Gravitational Physics and Geometry Seminar, Penn State, October 4, 2004.
28. “The Elusive Binary Black Hole Coalescence”, Seminar at Center for Cosmological Physics, University of Chicago, Chicago, IL, May 30, 2003.
29. “Horizons: Unveiling Physics of Gravitational Wave Source Simulations” Seminar at Center for Gravitational Physics and Geometry Penn State, University Park, PA February 23, 2003.
30. “Bouncing Black Holes and Isolated Horizons”, Colloquium, NASA Goddard Space Flight Center, Maryland, November 27, 2001.

***Contributed presentations at conferences:***

1. ``The Impact of Junk Radiation on Numerical Relativity Waves,’’ Amaldi/GR22, July 2019.
2. ``Numerical Relativity in the LISA Era,’’ APS April Meeting, April 2019
3. ``Merging Intermediate Mass Black Holes in LIGO and LISA’’, AAS, Seattle, WA, January 2019
4. ``From NR to GWs for BBHs”, Workshop on Astrophysics and Relativity: Astro-GR 2015, Brazil, August 2015.
5. ‘’BBH Classification Using Principal Component Analysis,’’ April APS 2015 Meeting, April 13, 2015 Baltimore MD.
6. Binary Black Holes and Gravitational Waves,” NEB16, Recent Developments in Gravity, Greece Sep 17 2014 (cancelled due to family emergency)
7. ``Identification of BBH Merger Phenomenology Through Principal Component Analysis,” APS April Meeting 2014
8. ``Binary Black Hole Gravitational Waves: Simple or Complex?” Gravitational Waves Revolution in Astronomy and Astrophysics, Kyoto Japan, 6 June 2013.
9. `` BBH GWs: Simple of Complex, ‘’ 3rd Iberian Gravitational-Wave Meeting, 21 March 2013, Valencia Spain.
10. “Choosing Precessing Black Holes Simulations” NRDA-Amadli 2011, Cardiff, Wales, 11 July 2011.
11. “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.
12. “Using Numerical Relativity for Gravitational Wave Astrophysics,” NRDA 2009 meeting, AEI, Golm, Germany July 6, 2009.
13. “Exploring Use of NR Waveforms in Burst Analyses of BBH Mergers,” APS April meeting, Denver, CO, May 5, 2009.
14. “BBH Merger and Gravitational Wave Detection,” Numerical Relativity and Data Analysis Meeting 2008, Syracuse, NY, August 2008.
15. “Coupling Simulations with Data Analysis and Observations,” 7th International LISA Symposium, Barcelona, Spain, June 2008.
16. “NRmDA: Spinning BBH Case,” 7th Edoardo Amaldi Conference on Gravitational Waves, Sydney, Australia, July 2007.
17. “Spurious Radiation in BBH Evolutions,” 18th International Conference on General Relativity and Gravitation, Sydney, Australia, July 2007.
18. “Matched Filtering and Convergence of Numerical Relativity Templates,” American Physical Society, Jacksonville FL, April 16, 2007.
19. “Spinning Black Holes, Kicks and Match,” Numerical Relativity meets Post Newtonian Meeting, St. Louis MO, February 10 2007.
20. “Unequal Mass Binary Black Hole Mergers \& Kicks,” American Physical Society, Dallas TX, April 24, 2006.
21. “Binary Black Holes Through the Eyepiece of Data Analysis,” VII Mexican School on Gravitation and Mathematical Physics, Playa del Carmen, Mexico, November 30, 2006.
22. “Mining for Observables: A New Challenge in Numerical Relativity”, 7th Helas Conference, Kefallinia, Greece, September 8, 2005.
23. “Dynamics of a Scalar Field on the Frozen Background of a Binary Black-Hole Spacetime”, GR17, Dublin, Ireland, July 2004.
24. “Nonlinear generation of harmonics in highly distorted black holes”, Advanced School and Conference on Sources of Gravitational Waves, Trieste, Italy, September 2003.
25. “Nonlinear generation of harmonics in highly distorted black holes”, American Physical Society, Philadelphia, PA April 2003
26. “A Dancing Black Hole”, American Physical Society, Albuquerque, New Mexico, April 2002.
27. “Bouncing Black Holes”, 11th Midwest Gravity Meeting, Waterloo, Ontario, October 2001.
28. “Numerical Simulations of Black Holes with Excision”. American Physical Society, Washington D.C., April 2001.
29. “Supercomputers as Black Hole Colliders”, Board of Visitors, Department of Astronomy and Astrophysics, April 2001.
30. “From Binary Black Holes to a Single Black Hole: Back to Basics”, Texas Symposium, Austin TX, December 2000.
31. “Single Black Holes: Back to Basics”, NSF Site Visit to the Center for Gravitational Physics and Geometry, Penn State, October 2000.
32. “Apparent Horizons: From Merger Toward Ringdown”, Marcel Grossman IX, Rome, Italy, July 2000.
33. “A Black Hole Grazing Collision”, Marcel Grossman IX, Rome, Italy, July 2000.
34. “Apparent Horizons: From Merger toward Ringdown”, American Physical Society, Long Beach, California, April 2000.
35. “A Black Hole Grazing Collision”, East Coast Gravity Meeting, Pittsburgh, PA, March 2000.
36. “Tracking Multiple Apparent Horizons using Level Flow”, Seminar at the Center for Gravitational Physics and Geometry, Penn State, September 1999.
37. “Apparent Horizons in a Binary Black Hole Merger”, Final Defense, The University of Texas at Austin, Department of Physics, August 1999.
38. “Apparent Horizons in Black Hole Space-times”, American Physical Society Centennial Meeting Session, Atlanta, Georgia, March 1999.
39. “Apparent Horizons in the Grand Challenge”, Apparent Horizons Boundary Conditions Workshop, Max-Planck-Instituet fuer Gravitationphysik Potsdam, Germany, December 1998.
40. “Apparent Horizons in the Grand Challenge” Binary Black Hole Conference Austin, TX, November 1998.
41. “Apparent Horizon Tracking”, Center for Relativity Seminar, The University of Texas at Austin, October 1998.
42. “Development of the Mean Curvature Flow Method for Tracking Apparent Horizon”, Center for Relativity Seminar, The University of Texas at Austin, November 1997.

**E. Grants and Contracts**

**E1. As Principal Investigator**

**Research Grants and Contracts:**

Currently funded:

09/01/2018 – 08/31/2021 NSF PHY1806580 $600,000; “Compact Objects and Gravitational Radiation”

01/31/2019 – 1/30/2022 NASA $295,295; Black Hole Mergers and Gravitational Radiation in the LISA Era

Pending:  
08/01/2020 - 07/31/2025 NSF $16,249,474 Physics Frontier Center: Center for Windows to the Cosmos

**E2. As Co-Principal Investigator**

Currently funded:

09/01/2018 – 08/31/2021  NSF $1,220,871; Cadonati “Gravitational Wave Transient Astrophysics with LIGO”

09/01/2018 – 08/31/2021 NSF: $3,699,317: Aluru “MRI: Acquisition of an HPC System for Data-Driven Discovery in Computational Astrophysics, Biology, Chemistry and Materials Science”

**F. Other Scholarly Accomplishments**

**G. Societal and Policy Impacts**

No data

**H. Other Professional Activities**

Chair of the APS Division for Gravitational Physics

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

**V. Teaching**

**A. Courses Taught (last 6 years)**

New: VIP Gravitational Wave Astrophysics with Professors Laguna and Cadonati

Relativity Physics 4147

Gravity Physics 7125

**B. Individual Student Guidance**

**B1. PhD Students**

Deborah Ferguson Ph.D. Georgia Tech

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

**B2. M.S. students**

Anissa Zacharias M.S. CSE, Georgia Tech

**B3. Undergraduate Students**

1. Adria Medina (visiting from Universitat Politecnica de Catalunya, Spain)
2. Joan Llobera (visiting from Universitat Politecnica de Catalunya, Spain)
3. Shawn Sanderson
4. Sara Sloman (REU 2019)
5. Paul Miloro
6. Richard Udall
7. Jordi Manyer (visiting from Universitat Politecnica de Catalunya, Spain)
8. YuPeng Zhong, visiting from Lanzhou University, China)
9. Grace Kim
10. Edward Eskew
11. Xzavier Flowers (REU, Summer 2017)
12. Will Hall (REU, Summer 2017)
13. Kenny Higginbotham
14. Will Wills
15. Brian Day (undergraduate thesis)
16. Kate Napier Day (undergraduate thesis)
17. Lorena Zertuche Day (undergraduate thesis)
18. Nicholas Lucas
19. Zhiwei Wang
20. Ilyes Doad
21. Rita Garrido
22. Grace Chambers
23. Brandon Wiles
24. Zachary Meeks
25. Greg Douthit
26. Kristie Patterson
27. Dustin Burns Day (undergraduate thesis)
28. Zac Heacker
29. Samuel Adams
30. Sonia Golemme
31. Ben Gillespie
32. Thomas Osburn
33. Charles Read
34. Jonathan Diaz (GT, physics 2008)
35. Robert Wharton (PSU)
36. Christopher Schmid (PSU)
37. Christian Cruz (PSU)
38. Edward Cazalas (PSU)
39. James Dalessio (PSU)
40. Leah Liu (PSU)
41. Jess Lower (PSU)
42. Leslie Ross (PSU)
43. Taylor Landis (PSU)

**VI. Service**

**A. Professional Contributions**

***Conference Organizing:***

MLSE 2018@ Carnegie Mellon

MLSE 2019@ Georgia Tech

WavWG Face to Face meeting, AEI Berlin 2018

***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)

F1000 Prime

***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. Georgia Regional Astronomy Meeting Keynote ``Black Holes and Gravitational Waves: Einstein’s Legacy’’ October 27 2017
2. NYC Pioneer Works Outreach Talk August 13 2017
3. TedX GT Talk on April 22 2017
4. Featured in GT’s Creating the Next video 2017
5. Public Talk “Rips and Ripples: Our Amazing Universe,” University of Alabama, Oct 4 2016.
6. Family Weekend at Georgia Tech, “Rips and Ripples: Our Amazing Universe”, Sept 30, 2016.
7. Featured in Atlanta Magazine, September 2016 Issue, “Making Waves”
8. Quoted by CNN, “Gravitational Waves Detected – and that’s creating waves in science” February 11 2016
9. Interviewed for the Whistle, 2016
10. Atlanta Science Tavern Gravitational Wave Event February 2016
11. Quoted inn Sky and Telescope Magazine, December 2015 issue.
12. Filmed GT YouTube video, “Lightspeed” December 17 2015
13. Atlanta Science Festival Event ``Celebrating Gravity, Light and Einstein’’ on March 25, 2015.
14. CRA Distinguished Lecture George Efstathiou April 7, 2015
15. CRA Distinguished Lecture Naoki Yoshida December 5, 2014
16. Interviewed by Ms. Beatriz Mora for school project at MIT July 21 2014
17. MCRI Youth Entrepreneurship Club Mentor (2014 -- present)
18. Supervising High School Student Sarayu Narayan (2014 -- present)
19. First Atlanta Astro jamboree with Mike Eracleous January 2014
20. Judge for Tech Talks Atlanta Science Festival March 26 2014
21. CRA visit with Neil Degrasse Tyson “Ambassadors of Science” April 1, 2014
22. CRA “Science at the Bistro” event March 11, 2014
23. ``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
24. WitsonMentor October 11 2012
25. D2D outreach activities 2012 and 2013
26. Interviewed for the Whistle 2011
27. Started Google+ and CRA with Jim Richards
28. Initiated CRA talks at Public Night with Jim Sowell

**Postdoctoral Fellows Supervised:**

Karan Jani, current

James Clark, current

Larne Pekowsky, Syracuse University

Enrique Pazos, Faculty at Universidad de San Carlos de Guatemala

James Healy, Postdoc at Rochester Institute of Technology

Frank Herrmann, Postdoc at University of Maryland

Ian Hinder, Postdoc at the Albert Einstein Institute, Germany

**C. Institute, College and School**

CoC Dean Search Committee (2018-2019)

CoS Promotion and Tenure Committee (2018-2021)

SoP Awards Committee

CTO Searc Committee for Georgia Tech (2019)