

Leo C. Stein

CONTACT INFORMATION	205 Lewis Hall University of Mississippi University, MS 38677-1848 USA	lcstein@olemiss.edu duetosymmetry.com 1-662-915-1941
EDUCATION	Ph.D., Physics , Massachusetts Institute of Technology, Cambridge, MA, USA Dissertation Advisor: Prof. Scott Hughes Dissertation Title: <i>Probes of strong-field gravity</i> May 2012 B.S., Physics , California Institute of Technology, Pasadena, CA, USA Degree conferred with honor. Senior Thesis Advisors: Dr. Patrick Sutton and Prof. Alan Weinstein June 2006	
EMPLOYMENT	Associate Professor , University of Mississippi, Oxford, MS USA Assistant Professor , University of Mississippi, Oxford, MS USA Senior Postdoctoral Researcher , Caltech, Pasadena, CA USA NASA Einstein Fellow , Cornell, Ithaca NY, USA Research and Teaching Assistant , MIT, Cambridge MA, USA Teaching Assistant , Caltech, Pasadena, CA, USA Summer Research Fellow , Caltech, Pasadena, CA, USA	July 2024–Present August 2018–June 2024 September 2015–August 2018 September 2012–August 2015 September 2006–May 2012 Fall 2004, Spring 2005 June–September 2003/2005
RESEARCH INTERESTS	General relativity (GR), gravitation, and astrophysical phenomena which can elucidate gravity. One major theme is pushing numerical and analytical gravitational-wave (GW) predictions to the precision frontier in advance of next-generation observatories. A second major theme is using GWs to test GR against beyond-GR models, in both theory-independent and theory-dependent models. This involves numerical relativity and renormalization methods applied to specific effective field models for beyond-GR theories.	
HONORS AND AWARDS	Kavli Fellow , National Academy of Sciences, Sloan Research Fellowship , Alfred P. Sloan Foundation, CAREER Award , NSF Einstein Postdoctoral Fellow , NASA Henry Kendall Teaching Award , Massachusetts Institute of Technology Upperclass Merit Scholarship , California Institute of Technology	2025 2023–2025 2021–2026 2012–2015 2011 2005–2006

TEACHING
EXPERIENCE**Professor**, University of Mississippi

Phys. 213, General physics I	Spring 2021
Phys. 401, Electromagnetism I	Falls 2019–2022
Phys. 402, Electromagnetism II	Springs 2019–2021
Phys. 436, Intro to cosmology	Falls 2023, 2025
Phys. 463/4, Senior research project	Fall 2020, Spring 2021, Fall 2023
Phys. 503/630, Graduate reading course	Spring 2019, Falls 2020–2021
Phys. 709, Graduate classical dynamics I	Fall 2018
Phys. 721, Graduate electrodynamics I	Springs 2022–2025
Phys. 722, Graduate electrodynamics II	Falls 2022–2025
Phys. 735, General relativity	Fall 2024
Phys. 750, General relativity II	Spring 2020

Guest Lecturer, California Institute of Technology

Ph236, General relativity	Fall 2017
Ph237, Gravitational Waves	Spring 2016

Guest Lecturer, Massachusetts Institute of Technology

8.901, Graduate Astrophysics I	Spring 2011
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Teaching Assistant, Massachusetts Institute of Technology

8.942, Cosmology	Fall 2011
8.901, Graduate Astrophysics I	Spring 2011
8.286, The Early Universe	Fall 2009

Teaching Assistant, California Institute of Technology

Ph 7, Nuclear and Quantum Physics Lab	Spring 2005
Ph 5, Analog Electronics for Physicists	Fall 2004

MENTORING/
SUPERVISION**Postdoctoral researchers**

Károly Csukás	Fall 2021–Summer 2024
José Tomás Gálvez Gherzi	Fall 2019–Spring 2021
Now faculty at Universidad de Ingeniería y Tecnología, Peru	

Graduate students

David Bronicki, University of Mississippi	Fall 2019–Summer 2023
Subhayu Bagchi, University of Mississippi	Fall 2019–present
Aniket Khairnar, University of Mississippi	Fall 2019–present
Akshay Khadse, University of Mississippi	Fall 2018–Summer 2024
Lorena Magaña Zertuche, University of Mississippi	Fall 2018–Summer 2024
Now a postdoc at NBI, Copenhagen, Denmark	
Joe Rivest, University of Mississippi	Fall 2018–Summer 2024
Sashwat Tanay, University of Mississippi	Fall 2018–Summer 2022
Now a postdoc at LUTH, Meudon, France	

Maria (Masha) Okounkova, Caltech	Fall 2015–Summer 2019
Now faculty at Pasadena City College	
Baoyi Chen, Caltech	Fall 2016–Summer 2018

Undergraduate students

Wayne Zhao, Harvard	Summer 2016
Now a graduate student at Princeton	

PROFESSIONAL
ACTIVITIES,
OUTREACH, AND
SERVICE

LISA Consortium, Full member	2020–Present
UMiss LISA Group leader	2020–Present

Simulating eXtreme Spacetimes collaboration	2015–Present
Executive committee member	2018–Present

American Physical Society, member	2010–Present
Division of Gravitational Physics	

Secretary/Treasurer	2023–2026
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Executive Committee Member-at-Large	2016–2019
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Division of Astrophysics	
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Conference organizer

Nonlinear Black Hole Perturbation Theory , U of Nottingham	September 2025
Three day workshop, ~ 70 participants	

11th Gulf Coast Gravity Meeting (GCGM) , UMiss	April 2025
Two day conference, ~ 50 participants	

Simulating Extreme Spacetimes with SpEC and SpECTRE , ICERM	August 2024
Week-long international workshop, ~85 participants	

New frontiers in strong gravity , Benasque, Spain	July 2024
Two week international conference, ~70 participants	

Nonlinear Aspects of General Relativity , Princeton PCTS	October 2023
Four day workshop, ~100 participants	

Numerical Relativity Community Summer School , ICERM	August 2022
Week-long international summer school, 150 participants	

New frontiers in strong gravity , Benasque, Spain	July 2022
Two week international conference, 100 participants	

Numerical Relativity beyond General Relativity , Benasque, Spain	June 2018
Week-long international workshop, 59 participants	

34th Pacific Coast Gravity Meeting (PCGM) , Caltech	March 2018
Two day conference, ~ 125 participants	

Unifying Tests of General Relativity , Caltech	July 2016
Three day workshop, 52 participants	

Seminar organizer

TAPIR seminar, Caltech	Fall 2015–Spring 2018
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General Relativity Informal Tea-Time Series (GRITTS), MIT	Fall 2011–Spring 2012
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MKI Journal Club, MIT	Fall 2007–Spring 2010
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Conference session chair; Judge for best student speaker award

April APS meeting, NY, NY	April 2022
Midwest relativity meeting, Grand Rapids, MI	October 2019
April APS meeting, Columbus, OH	April 2018
34 th Pacific Coast Gravity Meeting (PCGM), Caltech	March 2018
33 rd Pacific Coast Gravity Meeting (PCGM), UCSB	March 2017
“April” APS meeting, Washington D.C.	January 2017
32 nd Pacific Coast Gravity Meeting (PCGM), CSU Fullerton	April 2016
Theoretical Astrophysics in Southern California (TASC), CSU Fullerton	November 2015

Journal referee

American Journal of Physics, Classical and Quantum Gravity, Journal of Cosmology and Astroparticle Physics, Journal of Open Source Software, General Relativity and Gravitation, Monthly Notices of the Royal Astronomical Society, Physics Letters B, Physical Review D, Physical Review Letters, Physical Review X, Reviews of Modern Physics, The Astrophysical Journal Letters, The Physics Teacher

Agency work

Reviewer for NSF, NASA

Outreach

CLA Lectures on Tap	October 2025
Lecture: “Black Holes: The spooky truth about the ghosts of dead stars”	
Oxford Science Café	April 2019
Lecture: “The truth about black holes”	
Guest on the <i>Starts With a Bang</i> podcast	March 25, 2019
Episode 42: Black holes and gravitation	
Invited speaker for Latin American Webinar on Physics	March 13, 2019
Webinar 75: “Testing Einstein with numerical relativity”	
Caltech astronomy public lecture series speaker	March 2018
Lecture: “The truth about black holes”	
Astronomy on Tap public lecture series speaker and volunteer	2016–2018
Close to a monthly basis	
Caltech astronomy public lecture series panelist and emcee	2016–2018
Approximately every three months	
Invited guest lecture on black holes and gravitational waves	November 2017
<i>Science of Space and Time</i> , Hampshire College	
Invited video Q&A session, public high school physics class	June 2017
<i>The Nova Project</i> school, Seattle	
Guest on <i>The Titanium Physicists Podcast</i>	
Episode 80: Picturing the Bach Hole	August 21, 2019
Episode 64: The edges of Einstein	April 25, 2016
Episode 62: Black Bells	February 1, 2016
Quora Q&A Session on gravitational waves and first detection	February 17, 2016
83.9k+ views, 20.8k+ followers	

Invited guest host, public screening of <i>COSMOS</i> with Q&A, Science Cabaret/Cornell	March/June 2014
Invited public talk at <i>Frontiers of Cornell Astronomy</i> , Cornell Friends of Astronomy	November 2013
Invited video chat, <i>Topics in Physics</i> course, Stanford Education Program for Gifted Youth	July 2013

COMPUTER SKILLS Expert in MATHEMATICA, C/C++, Python, Bash. Proficient in Javascript. Experience in Haskell, Java, Julia. Expert at *nix and HPC. Markup languages: L^AT_EX, HTML, CSS, Markdown.

Software—Most contributions can be found at <https://github.com/duetosymmetry>. Member of the *Simulating eXtreme Spacetimes* (SXS) collaboration, contributor to the Spectral Einstein Code (SpEC). Member of the *Black Hole Perturbation Toolkit*. Author of `qnm` python package (<https://github.com/duetosymmetry/qnm>). Core collaborator on xACT (<http://xact.es>) abstract tensor calculus package for MATHEMATICA. Coauthor of xTERIOR package for exterior differential geometry under xACT. Co-maintainer of community contributions at <http://contrib.xact.es>. Developed `arXiv-keys` browser extension/add-on for Chrome/Firefox. Author of `orcidlink` and coauthor of `gridpapers` packages for L^AT_EX.

INVITED TALKS	54. Natl. U. of Singapore, “Math. Methods for the GR Two-body Problem” workshop	August 2025
	53. URI physics department colloquium	November 2024
	52. UNC physics department colloquium	February 2024
	51. UIUC astrophysics seminar	December 2023
	50. Harvard CMSA GR seminar	October 2023
	49. UMass Amherst, Amherst Center for Fundamental Interactions seminar	September 2023
	48. Albert Einstein Institute, “Connecting the Dots” panel discussion	June 2023
	47. Queen Mary Univ. of London, Gravitational memory workshop	June 2023
	46. Utah State University, Theoretical Physics Talks,	March 2023
	45. Iowa State, Physics and astronomy department colloquium,	October 2022
	44. UT Austin, Weinberg Institute seminar,	October 2022
	43. Vanderbilt, Physics and astronomy department colloquium,	September 2022
	42. ICERM, Advances in CS Classical and Quantum Gravity,	May 2022
	41. Flatiron CCA, Ringdown workshop, invited overview talk,	February 2022
	40. DAMTP (University of Cambridge), HEP/GR colloquium,	January 2022
	39. SISSA, Current challenges in gravitational physics workshop,	April 2021
	38. Flatiron CCA, Gravitational wave astronomy group seminar,	January 2021
	37. University of Birmingham, astrophysics seminar	September 2020
	36. Albert Einstein Institute, ACR division seminar	July 2020
	35. Black Hole Perturbation Toolkit, Spring 2020 workshop	May 2020
	34. American Physical Society Meeting	April 2020
	33. UVA, physics department colloquium	November 2019
	32. UT Dallas, physics department colloquium	October 2019
	31. Northwestern University, CIERA astrophysics seminar	May 2019
	30. ETH-ITS Zurich, “New horizons for gravity” workshop	May 2018

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| 29. UC San Diego, astrophysics seminar | March 2018 |
| 28. UC Berkeley, 4D particle physics seminar | March 2018 |
| 27. Kyoto University, YKIS2018a Symposium | February 2018 |
| 26. Oakland University physics seminar | February 2018 |
| 25. University of Wisconsin-Milwaukee gravity seminar | January 2018 |
| 24. Caltech/JPL Gravitational-Wave (CaJAGWR) seminar | January 2018 |
| 23. ICN UNAM, Relativity seminar | December 2017 |
| 22. University of Mississippi, Astrophysics seminar | November 2017 |
| 21. University of Florida, Astrophysics seminar | November 2017 |
| 20. University of Nottingham, Mathematical Physics seminar | July 2017 |
| 19. Sapienza University of Rome, New Frontiers in Gravitational-Wave Astrophysics | June 2017 |
| 18. Rochester Institute of Technology, CCRG seminar | March 2017 |
| 17. Penn State, IGC seminar | March 2017 |
| 16. University of Mississippi, Strong Gravity/Binary Dynamics workshop | February/March 2017 |
| 15. SUNY Stony Brook, “The universe through gravitational waves” | December 2016 |
| 14. University of Pennsylvania, New Frontiers in Gravitational Radiation workshop | December 2016 |
| 13. Cambridge MA, Event Horizon Telescope collaboration meeting | November/December 2016 |
| 12. Northwestern University CIERA, “Fellows at the Frontiers” | August/September 2016 |
| 11. Princeton University, GR@100++ panel discussion | April 2016 |
| 10. Cambridge MA, Einstein fellows symposium | October 2014 |
| 9. Perimeter Institute, Strong gravity seminar | October 2014 |
| 8. Cornell University, Friends of astronomy outreach event | November 2013 |
| 7. Cambridge MA, Einstein fellows symposium | October 2013 |
| 6. SUNY Geneseo, Physics colloquium | October 2013 |
| 5. University of Maryland, UMD gravity seminar | October 2013 |
| 4. Yale University, YCAA seminar | September 2013 |
| 3. Kyoto University, YITP long-term workshop | June 2013 |
| 2. Cambridge MA, Einstein fellows symposium | October 2012 |
| 1. Cornell University, Relativity lunch | November 2011 |

CONTRIBUTED TALKS (SELECTED)	25. 28 th Capra Meeting on Radiation Reaction in General Relativity	July 2025
	24. 24 th International meeting on GR (GR24)	July 2025
	23. American Physical Society Meeting	April 2024
	22. American Physical Society Meeting	April 2023
	21. LISA Symposium XIV	July 2022
	20. American Physical Society Meeting	April 2021
	19. American Physical Society Meeting	April 2019
	18. American Physical Society Meeting	April 2018
	17. Pacific Coast Gravity Meeting	March 2017
	16. American Physical Society Meeting	April January 2017
	15. Testing Gravity 2017	January 2017
	14. 21 st International meeting on GR (GR21)	July 2016
	13. American Physical Society Meeting	April 2016
	12. Eastern Gravity Meeting	May 2015
	11. American Physical Society Meeting	April 2015
	10. NEB 16 Recent developments in gravity	September 2014
	9. American Physical Society Meeting	April 2014
	8. XXVII Texas symposium on relativistic astrophysics	December 2013
	7. 20 th International meeting on GR (GR20)	July 2013
	6. Eastern Gravity Meeting	June 2013
	5. American Physical Society Meeting	April 2013
	4. Caltech TAPIR Seminar	December 2011
	3. Eastern Gravity Meeting	June 2011
	2. American Physical Society Meeting	April 2011
	1. American Physical Society Meeting	April 2010

REFERENCES

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