Curriculum Vitae

HAL M. HAGGARD **COORDINATES**

Associate Professor
Chair of Physics Program
Bard College
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PROFESSIONAL PREPARATION

Reed College, Physics B.A., 2002
University of California, Berkeley, Physics M.A., 2006
University of California, Berkeley, Physics Ph.D., 2011
Universitá degli studi di Pavia, Italy, Certificate of doctoral studies in physics, 2011
Aix-Marseille University, NSF IRFP Postdoctoral Fellow, 2012-2014

APPOINTMENTS

2014- Associate Professor of Physics, Bard College, Annandale-on-Hudson
2020-2023 Associate Editor, Foundations of Physics
2019-2021 Visiting Fellow, Perimeter Institute for Theoretical Physics, Waterloo, Canada
2017-2018 Visiting Researcher, Perimeter Institute for Theoretical Physics, Waterloo, Canada
2012-2014 NSF IRFP Postdoctoral Fellow, Aix-Marseille University, Marseille, France
2011-2012 Lecturer, University of California, Berkeley

AWARDS

Visiting Fellow, Perimeter Institute	Funding: ∼$50,000	(2019-2021)
Buchalter Cosmology Prize	Funding: $5,000	(2019)
Visiting Researcher, Perimeter Institute	Funding: ∼$20,000	(2017-2018)
Kavli Fellow		(2016)
Co-I, International Space Science Institute team	Funding: $25,000	(2014-2016)
NSF International Research Fellowship	Funding: $160,000	(2012-2014)
Bourses de la Ville de Marseille	Funding: €2,500	(2013)
UC Berkeley Dissertation-Year Fellowship	Funding: $30,000	(2010-2011)
Phi Beta Kappa N. Cal. Ass. Scholarship	Funding: $5,000	(2010)
Physics Student Service Award		(2007)
Graduate Student Instructor 'Everyday Hero'		(2006)
Outstanding Graduate Student Instructor		(2005)

SCIENTIFIC PRODUCTION

— 33 papers, 1000+ citations: 2 *Phys. Rev. Lett.*, 1 *Phys. Lett. B*, 1 *Europhys. Lett.*, 1 *JHEP*, 1 *Nucl. Phys. B*, 1 *New J. Phys.*, 7 *Phys. Rev. D*, 3 *J. Phys. A*, 1 *Ann. H. Poinc.*, 3 *Class. Quant. Grav.*, 1 *ATMP*, 1 *GRG*, 3 *Int. J. Mod. Phys.*, 4 *MNRAS*, 1 *AJ*, 2 preprints; 1 dissertation.
— Preprint "Small Spins of Primordial Black Holes from Random Geometries: Bekenstein-Hawking Entropy and Gravitational Wave Observations" won Buchalter Cosmology Prize (2019).
— 25+ times invited speaker at international conferences & workshops; 75+ seminars worldwide
— Reviewer for 10+ journals, Cambridge Univ. Press, U.S. NSF, Swiss NSF, NSERC

PUBLICATIONS IN PEER REVIEWED JOURNALS

(1000+ citations; Note that not all papers appear on INSPIRE since I also work in semiclassics and astrophysics.)

1. S. K. Asante, B. Dittrich, and H. M. Haggard, *Effective Spin Foam Models for Four-Dimensional Quantum Gravity*, Phys. Rev. Lett. **125**, 231301 (2020) DOI: 10.1103/PhysRevLett.125.231301. 6 citations.

2. H. M. Haggard, M. Han, W. Kamiński, and A. Riello, *SL(2, C) Chern-Simons Theory, Flat Connections, and Four-dimensional Quantum Geometry,* arXiv:1512.07690. Accepted to Advances in Theoretical and Mathematical Physics (Apr 2019). 18 citations.

3. S. K. Asante, B. Dittrich, and H. M. Haggard, *Holographic description of boundary gravitons in (3+1) dimensions,* J. High Energ. Phys. **144** (2019) DOI:10.1007/JHEP01(2019)144. 8 citations.

4. E. Bianchi and H. M. Haggard, *Spin fluctuations and black hole singularities: the onset of quantum gravity is spacelike,* New J. Phys. **20** (2018). DOI:10.1088/1367-2630/aae71d. 3 citations.

5. E. Bianchi, M. Christodoulou, F. D'Ambrosio, H. M. Haggard, and C. Rovelli, *White Holes as Remnants: A Surprising Scenario for the End of a Black Hole,* Class. Quant. Grav. **35** (2018) DOI:10.1088/1361-6382/aae550. 63 citations.

6. B. Farr, W. M. Farr, N. B. Cowan, H. M. Haggard, and T. Robinson, `exocartographer`*: A Bayesian Framework for Mapping Exoplanets in Reflected Light,* AJ **156**, (2018) DOI:10.3847/1538-3881/aad775. 16 citation.

7. S. K. Asante, B. Dittrich, and H. M. Haggard, *The Degrees of Freedom of Area Regge Calculus: Dynamics, Non-metricity, and Broken Diffeomorphisms,* Class. Quant. Grav. **35**, 135009 (2018) DOI:10.1088/1361-6382/aac588. 10 citations.
[Featured on CQGPlus due to high quality referee rating]

8. H. M. Haggard and N. B. Cowan, *Analytic Reflected Lightcurves for Exoplanets,* MNRAS **478**, 371 (2018) DOI:10.1093/mnras/sty1019. 6 citations.

9. E. Bianchi, H. M. Haggard, and C. Rovelli, *The boundary is mixed,* Gen. Relativ. Gravit. **49**, 100 (2017) DOI:10.1007/s10714-017-2263-2. 5 citations.

10. N. B. Cowan, V. Chayes, É. Bouffard, M. Meynig, and H. M. Haggard, *Odd Harmonics in Exoplanet Photometry: Weather or Artifact?,* MNRAS **467**, 747 (2017) DOI:10.1093/mnras/stx133. 15 citation.

11. H. M. Haggard and C. Rovelli, *Quantum Gravity Effects around Sagittarius A*,* Int. J. Mod. Phys. D **25**, 1644021 (2016) DOI: 10.1142/S0218271816440211. 18 citations.
[Honorable mention, Gravity Research Foundation contest]

12. J. C. Schwartz, C. Sekowski, H. M. Haggard, E. Pallé, and N. B. Cowan, *Inferring Planetary Obliquity Using Rotational & Orbital Photometry,* MNRAS **457**, 926 (2016) DOI: 10.1093/mnras/stw068. 34 citations.

13. H. M. Haggard, M. Han, W. Kamiński, and A. Riello, *Four-dimensional Quantum Gravity with a Cosmological Constant from Three-dimensional Holomorphic Blocks,* Phys. Lett. B **752**, 258 (2016) DOI: 10.1016/j.physletb.2015.11.058. 48 citations.

14. H. M. Haggard, M. Han, and A. Riello, *Encoding Curved Tetrahedra in Face Holonomies: a Phase Space of Shapes from Group-Valued Moment Maps,* Annales Henri Poincaré (2016) DOI: 10.1007/s00023-015-0455-4. 42 citations.

15. H. M. Haggard and C. Rovelli, *Quantum-gravity effects outside the horizon spark black to white hole tunneling,* Phys. Rev. D **92**, 104020 (2015) DOI: 10.1103/PhysRevD.92.104020. 179 citations.

16. H. M. Haggard and C. Rovelli, *Black to white hole tunneling: An exact classical solution,* Int. J. Mod. Phys. A **30**, 1545015 (2015) DOI: 10.1142/S0217751X15450153. 11 citations.

17. H. M. Haggard, M. Han, W. Kamiński, and A. Riello, *SL(2,C) Chern-Simons Theory, a non-Planar Graph Operator, and 4D Quantum Gravity with a Cosmological Constant: Semiclassical Geometry,* Nucl. Phys. B **900**, 1 (2015) DOI: 10.1016/j.nuclphysb.2015.08.023. 68 citations.

18. H. M. Haggard, A. Hedeman, E. Kur, and R. G. Littlejohn, *Symplectic and semiclassical aspects of the Schläfli identity,* J. Phys. A: Math. Theor. **48**, 105203 (2015) DOI: 10.1088/1751-8113/48/10/105203. 17 citations.

19. I. Esterlis, H. M. Haggard, A. Hedeman, and R. G. Littlejohn, *Maslov indices, Poisson brackets, and singular differential forms,* Europhys. Lett. **106**, 50002 (2014) DOI: 10.1209/0295-5075/106/50002. 11 citations. [selected as Editor's Choice and 2014 EPL highlight]

20. G. Chirco, H. M. Haggard, A. Riello, and C. Rovelli, *Spacetime thermodynamics without hidden degrees of freedom,* Phys. Rev. D **90**, 044044 (2014) DOI: 10.1103/PhysRevD.90.044044. 35 citations.

21. G. Chirco, H. M. Haggard, and C. Rovelli, *Coupling and thermal equilibrium in general-covariant systems,* Phys. Rev. D **88**, 084027 (2013) DOI: 10.1103/PhysRevD.88.084027. 15 citations.

22. H. M. Haggard and C. Rovelli, *Essay on gravitation: Death and resurrection of the zeroth principle of thermodynamics,* Int. J. Mod. Phys. D **22**, 1342007 (2013) DOI: 10.1142/S0218271813420078. 3 citations. [Honorable mention, Gravity Research Foundation contest]

23. N. B. Cowan, P. A. Fuentes, and H. M. Haggard, *Lightcurves of stars & exoplanets: estimating inclination, obliquity, and albedo,* MNRAS **434**, 2465 (2013) DOI: 10.1093/mnras/stt1191. 44 citations.

24. H. M. Haggard and C. Rovelli, *Death and resurrection of the zeroth principle of thermodynamics,* Phys. Rev. D **87**, 084001 (2013) DOI: 10.1103/PhysRevD.87.084001. 24 citations.

25. H. M. Haggard, *Pentahedral volume, chaos and quantum gravity,* Phys. Rev. D **87**, 044020 (2013) DOI: 10.1103/PhysRevD.87.044020. 21 citations.

26. H. M. Haggard, C. Rovelli, F. Vidotto, and W. Wieland, *Spin connection of twisted geometry,* Phys. Rev. D **87**, 024038 (2013) DOI: 10.1103/PhysRevD.87.024038. 25 citations.

27. E. Bianchi and H. M. Haggard, *Bohr-Sommerfeld quantization of space,* Phys. Rev. D **86**, 124010 (2012) DOI: 10.1103/PhysRevD.86.124010. 39 citations.

28. V. Aquilanti, H. M. Haggard, A. Hedeman, N. Jeevanjee, R. G. Littlejohn and L. Yu, *Semiclassical Mechanics of the Wigner 6j-symbol,* J. Phys. A: Math. Theor. **45**, 065209 (2012) DOI: 10.1088/1751-8113/45/6/065209. 58 citations.

29. E. Bianchi and H. M. Haggard, *Discreteness of the volume of space from Bohr-Sommerfeld quantization,* Phys. Rev. Lett. **107**, 011301 (2011) DOI: 10.1103/PhysRevLett.107.011301. 65 citations.

30. H. M. Haggard and R. G. Littlejohn, *Asymptotics of the Wigner 9j-symbol,* Class. Quant. Grav. **27**, 135010 (2010) DOI: 10.1088/0264-9381/27/13/135010. 28 citations.

31. V. Aquilanti, H. M. Haggard, R. G. Littlejohn and L. Yu, *Semiclassical Analysis of Wigner 3j-symbol,* J. Phys. A: Math. Theor. **40**, 5637 (2007) DOI: 10.1088/1751-8113/40/21/013. 52 citations.

DISSERTATION

1. H. M. Haggard, *Asymptotic Analysis of Spin Networks with Applications to Quantum Gravity* escholarship.org (May 2011). 9 citations.

PREPRINTS

1. S. K. Asante, B. Dittrich, H. M. Haggard, *Discrete gravity dynamics from effective spin foams*, submitted to Class. Quant. Grav. (Nov 2020).

2. E. Bianchi, A. Gupta, H. M. Haggard, and B. S. Sathyaprakash, *Small Spins of Primordial Black Holes from Random Geometries: Bekenstein-Hawking Entropy and Gravitational Wave Observations*, submitted to PRL (Nov 2020). 3 citations. [Won 2nd prize 2019 Buchalter Cosmology Prize]

OTHER SCIENTIFIC PUBLICATIONS

Gibbsing Spacetime: A Group Field Theory Approach to Equilibrium in Quantum Gravity, H. M. Haggard, New Journal of Physics Perspective on Kotecha and D. Oriti *Statistical Equilibrium in Quantum Gravity: Gibbs states in Group Field Theory* New J. Phys. **20**, 071001 (2018)

SELECTED POPULAR COVERAGE OF MY WORK

White Holes: Black Holes' Neglected Twins, C. Wood, space.com/white-holes.html (June 2019)

Viewpoint: Black Hole Evolution Traced Out with Loop Quantum Gravity, C. Rovelli, Physics 11, 127 (December 2018)

Celebrating quantum gravity: the moons craters and conceptual revolutions, H. M. Haggard, CQG-Plus (June 2018)

Quantum Bounce, S. Clark, New Scientist (January 2016)

Black Hole Life Cycles, H. Haggard, Academic Minute, WAMC Northeast Public Radio (July 2015) academicminute.org/2015/07/hal-haggard-bard-college-black-hole-life-cycles/

Are White Holes Real?, M. McKee, Nova's The Nature of Reality (August 2014)

Quantum bounce could make black holes explode, R. Cowen, Nature News (July 2014)

INVITED TALKS AND CONFERENCE PRESENTATIONS

1. *Random Geometries, Gravitational Waves, and the Black Hole Spin Puzzle*, CP3-Origins Seminar, University of Southern Denmark (Dec 2020)
2. *Why do so many black holes measured in gravitational waves have zero spin?*, PAN Seminar, University of Connecticut (Nov 2020)
3. *Snookering Quantum Mechanics: Ronnie "The Rocket" O'Sullivan, Chaos, and Quantum Billiards*, Life Time Learning Institute, Bard College (Oct 2020)
4. *The Black Hole Spin Puzzle, Random Geometries, and Gravitational Wave Observations*, invited Colloquium, Virginia Technical University (Oct 2020)
5. *Revealing the Darkest Secrets of the Universe: The 2020 Nobel Prize in Physics*, Bard College Nobel Talk (joint with Shuo Zhang) (Oct 2020)
6. *Effective Spin Foams & the Flatness Problem*, Invited International Loop Quantum Gravity Seminar, relativity.phys.lsu.edu/ilqgs/ (Sep 2020)
7. *Mapping Alien Worlds: the Art of Exocartography, a Gift from Quantum Gravity, and the Unity of Science*, Invited Colloquium, University of Albany (Aug 2020)
8. *The Black Hole Spin Puzzle, Black Hole Entropy, and Gravitational Wave Observations*, Sheffield CRAG Seminar, University of Sheffield (Jun 2020)
9. *The Black Hole Spin Puzzle*, Mini-Workshop on Quantum Gravity, International Audience (Apr 2020)
10. *A Particle Description of Schwarzschild Black Holes*, American Physics Society's April Meeting, Bard College (Apr 2020)
11. *The Black Hole Spin Puzzle*, Bard Physics Friday, Bard College (Feb 2020)
12. *Typicality of Small Spins in Primordial Black Holes: from Black Hole Entropy to Gravitational Wave Observations*, Invited Colloquium, University of Albany (Jan 2020)

13. *Beholding Black Holes & Quickening Grains of Space*, Invited colloquium at St. John's College, Santa Fe (Oct 2019)

14. *Melting Time: Exploring Black Hole Observations with the Rhythms of Clocks*, Life Time Learning Institute, Bard College (Sep 2019)

15. *Holographic Description of Boundary Gravitons in (3+1) Dimensions*, Loops '19, Pennsylvania State University (Jun 2019)

16. *Sensing Gravity: the Recent Renaissance in Black Hole Observations*, Invited talk for the Mid-Hudson Astronomical Association (May 2019)

17. *Bekenstein-Hawking Entropy & Gravitational Wave Observations*, American Physical Society's April Meeting (Apr 2019)

18. *First Sight of a Black Hole: Recent Results from the Event Horizon Telescope*, Bard College, Science on the Edge Seminar (Apr 2019)

19. *Quantum Gravity and Black Hole Spin in Gravitational Wave Observations: a Test of the Bekenstein-Hawking Entropy*, Invited Speaker, Perimeter Institute Quantum Gravity Seminar (Jan 2019)

20. *Black Holes: A Brief Tour of their Cosmic Genesis, Quantum Hearts, and Entropic Secrets*, Bard Faculty Seminar (Sep 2018)

21. *Being an Assistant Professor at a 4-year Liberal Arts College*, UC Berkeley (Aug 2018)

22. *Curved Polyhedra, Group-Valued Momenta, Curved Polyhedra, Group-Valued Momenta*, Robert-Fest (Aug 2018)

23. *Quantum Gravity Inside and Outside Black Holes*, International loop quantum gravity seminar, `relativity.phys.lsu.edu/ilqgs/` (Apr 2018)

24. *Classical Tools for Quantum Tunneling*, Classical and Quantum Gravity Seminar, Penn State (Feb 2018)

25. *The Route to a Picard-Lefschetz Treatment of Black to White Hole Tunneling*, Invited Speaker, The Path Integral for Quantum Gravity conference, Perimeter Institute (Nov 2017)

26. *Complex Quantum Tunneling, Picard-Lefschetz Theory, & the Decay of Black Holes*, Perimeter Institute Quantum Gravity Seminar (Sep 2017)

27. *Black Hole Fireworks: Quantum-Gravity Effects Outside the Horizon as a Spark for Black to White Hole Tunneling*, Invited Colloquium, Hamilton College (Sep 2017)

28. *Complex Quantum Tunneling & the Decay of Black Holes*, Loops '17, University of Warsaw (Jul 2017)

29. *Black to White Hole Transition & Complex Quantum Tunneling*, University of Connecticut PAN Seminar (Apr 2017)

30. *Complex Quantum Tunneling & Black to White Hole Transitions*, Washington University Theory Seminar (Mar 2017)

31. *Projective Perspectives on the Grains of Space in Quantum Gravity*, American Physical Society's April Meeting (Jan 2017)

32. *New Perspectives on Polyhedra*, International loop quantum gravity seminar, relativity.phys.lsu.edu/ilqgs/ (Nov 2016)

33. *Black to White Hole Tunneling*, Kavli Frontiers of Science, National Academies of Science (Nov 2016)

34. *The Cataclysmic Dancing of Black Holes*, Rostrum Lecture, Bard College (Aug 2016)

35. *Dynamical polyhedra and the atoms of space in quantum gravity*, Invited speaker, Helsinki Quantum Gravity Workshop, University of Helsinki (Jun 2016)

36. *Semiclassical Tunneling*, Invited speaker, CarloFest, Marseille (May 2016)

37. *Four-dimensional Quantum Gravity with a Cosmological Constant from Three-dimensional Holomorphic Blocks*, Invited speaker, Quantum Groups in Quantum Gravity, University of Waterloo (Apr 2016)

38. *Four-dimensional Quantum Gravity with a Cosmological Constant from Three-dimensional Holomorphic Blocks*, American Physical Society's April Meeting (Apr 2016)

39. *Four-dimensional Quantum Gravity with a Cosmological Constant*, Invited speaker, Primordial Universe and Gravitation Seminar, Penn. State University (Mar 2016)

40. *Beauty, Imagination, and the Secret Pleasure of Black Holes*, Rostrum Lecture, Bard College (Aug 2015)

41. *Fast Radio Bursts from Black to White Hole Explosions*, Fourteenth Marcel Grossmann Meeting, University of Rome (Jul 2015)

42. *Black to White Hole Transitions: an Explicit Model*, Fourteenth Marcel Grossmann Meeting, University of Rome (Jul 2015)

43. *A New Decay Mode for Black Holes*, Invited plenary speaker, Loops '15, Friedrich-Alexander University (Jul 2015)

44. *Encoding Curved Tetrahedra in Face Holonomies*, Nottingham Quantum Gravity Seminar, University of Nottingham (Jun 2015)

45. *Symmetry in Spacetimes with a Cosmological Constant*, General Relativity and Gravitation: a Centennial Perspective, Pennsylvania State University (Jun 2015)

46. *SL(2,C) Chern-Simons Theory and Quantum Gravity with a Cosmological Constant*, American Physical Society's April Meeting (Apr 2015)

47. $\mathrm{SL}(2,\mathbb{C})$ *Chern-Simons Theory and Spinfoam Gravity with a Cosmological Constant*, International loop quantum gravity seminar, relativity.phys.lsu.edu/ilqgs/ (Nov 2014)

48. *Black Hole Fireworks*, American Physical Society's Mid-Atlantic Meeting, Pennsylvania State University (Oct 2014)

49. *Black Hole Fireworks*, Invited colloquium, Amherst College (Sep 2014)

50. *Black Hole Fireworks*, String group meeting, University of California, Berkeley (Aug 2014)

51. *Curved Polyhedra*, Symposium on Frontiers of Fundamental Physics, Aix-Marseille University (Jul 2014)

52. *Holonomies, Curved Polyhedra & Gravity*, Invited speaker, Exact Results in QFT and Gravity Seminar, University of Warsaw (May 2014)

53. *The Phase Space of Shapes of Curved Polyhedra*, Invited speaker, Chair of General Relativity Seminar, University of Warsaw (May 2014)

54. *Finite Regions, Spherical Entanglement, and Quantum Gravity*, Invited speaker, Condensed Matter Theory Seminar, University of Regensburg (Feb 2014)

55. *Finite Regions, Entanglement, and Quantum Gravity*, Second EFI winter conference on Quantum Gravity, Tux (Feb 2014)

56. *Space as a Spectral Mosaic: Geometry and Quantum Gravity*, Invited speaker, Grinnell College Physics Seminar (Dec 2013)

57. *Finite Regions, Spherical Entanglement, and Quantum Gravity*, Invited lecturer, Quantum Field Theory for Quantum Information, Complutense University of Madrid (Dec 2013)

58. *General Boundary Field Theory, Thermality, and Entanglement*, Invited lecturer, Quantum Field Theory for Quantum Information, Complutense University of Madrid (Dec 2013)

59. *Space as a Spectral Mosaic: Geometry and Quantum Gravity*, Invited speaker, Bard College Physics Seminar (Nov 2013)

60. *Finite Regions, Spherical Entanglement, and Quantum Gravity*, Invited speaker, Perimeter Institute Quantum Gravity Seminar (Nov 2013)

61. *Reconstructing Spacetime from Entanglement*, Invited speaker, High Energy Physics Seminar, Radboud University (Oct 2013)

62. *Coupling and Thermal Equilibrium in General-Covariant Systems*, Invited speaker, E. Frodden PhD thesis defense conference, CPT Marseille (Oct 2013)

63. *Thermality of Spherical Causal Domains & the Entanglement Spectrum*, Invited speaker, International loop quantum gravity seminar, relativity.phys.lsu.edu/ilqgs/ (Sep 2013)

64. *General Boundary Field Theory, Thermality, and Entanglement*, Loops '13, Perimeter Institute for Theoretical Physics (Jul 2013)

65. *General Boundary Field Theory, Thermality, and Entanglement*, Invited speaker, Relativistic Quantum Information-North, University of Nottingham (Jun 2013)

66. *Death and Resurrection of the Zeroth Principle of Thermodynamics*, Quantum Fields, Gravity & Information, University of Nottingham (Apr 2013) **Won best conference talk.**

67. *Dynamical Chaos and the Volume Gap*, International loop quantum gravity seminar, relativity.phys.lsu.edu/ilqgs/ (Feb 2013)

68. *An Introduction to Semiclassical Physics*, Invited seminar, Quantum information theory group, ETH Zurich (Nov 2012)

69. *Pentahedral Volume, Chaos, and Quantum Gravity*, Invited speaker, GROUPS 29 (Aug 2012)

70. *Pentahedral Volume, Chaos, and Quantum Gravity*, Perimeter Institute (May 2012)

71. *Symmetry Reduction and Polyhedral Dynamics*, Symmetries and Differential Equations: Olver Celebration, University of Minnesota (May 2012)

72. *Volume Dynamics and Quantum Gravity*, American Physical Society's April Meeting (Apr 2012)

73. *An Overview of Results on Spin Networks* Spin Networks in Atomic and Molecular Physics, Quantum Chemistry and Quantum Computing, ETH Zurich (Jun 2011)

74. *Discreteness of the volume of space from Bohr-Sommerfeld quantization*, Loops '11 (May 2011)

75. *Bohr-Sommerfeld Quantization of a Grain of Space*, Invited seminar, University of California, Davis (May 2011)

76. *Volume Spectrum from Bohr-Sommerfeld Quantization*, American Physical Society's April Meeting (May 2011)

77. *Bohr-Sommerfeld Quantization of the Volume*, 3rd School on Quantum Gravity and Quantum Geometry (Mar 2011)

78. *Asymptotics of the Wigner 9j-Symbol*, American Physical Society's April Meeting (Feb 2010)

79. *Compass at Berkeley: Underrepresented Student Retention*, Invited workshop presenter, Diversity in Physics Education, Physics Teacher Education Coalition Conference (Feb 2010)

CONFERENCE ORGANIZATION

Panel Chair, Quantum Gravity 2020, Perimeter Institute (Jul 2020)
Co-chair of the organizing committee for Loops '19 (Jun 2019)
Bard Summer School on Quantum Gravity 2019 (Jun 2019)
Member of the organizing committee for RobertFest (Aug 2018)

JOURNALS, PUBLISHERS, & FOUNDATIONS REVIEWED FOR

CMP: 1 since 2019
JHEP: 1 since 2017
New J. Phys.: 1 since 2018
Phys. Rev. D: 3 since 2013
Class. Quant. Grav.: 2 since 2011
Gen. Rel. Grav.: 3 since 2015
Ann. Henri Poinc.: 1 since 2011
Int. J. Mod. Phys. D: 1 since 2016
Comp.-Rend. Mec.: 1 since 2013
Int. J. Geom. Meth. Mod. Phys.: 1 since 2014
Am. J. Phys.: 4 since 2014

Cambridge University Press: 3 since 2016

U.S. National Science Foundation grant proposals: 3 since 2013
Swiss National Science Foundation grant proposal: 1 since 2017

OUTREACH

Co-founder, in 2006, of the Compass Project at University of California, Berkeley. The Compass Project supports diversity in the physical sciences by bringing together a community of undergraduate and graduate students through exceptional teaching and learning experiences. For the undergraduates, the main focus of Compass is an immersive two-week summer program for incoming freshmen that extends into a semester-long physics problem solving and modeling course, as well as continued mentoring and support throughout their college careers. For the graduate students, Compass provides a unique opportunity to advance their teaching skills and a platform for discussing issues related to physics education and diversity. web: berkeleycompassproject.org

- Compass was featured in the January 2013 Physics Today Editor's online picks.
- In 2012 the Compass Project was awarded one of the American Physical Society's inaugural awards for "improving undergraduate physics education."

TRAINING

Undergraduates
Julia Sheffler (2018-)
Antu Santanu (2018-)
Zak Hait (2019-2021)
Yanpei Deng (2020-2021)
Andrew Poverman (2020-2021)
Cole Cecchetto (2018-2020)
Mac Selesnick (2018-2019)
Victoria Chayes (2016-2017) [Graduate student in Mathematics at Rutgers University]
Max Meynig (2016-2017) [Graduate student in Physics at University of Connecticut]
Noah Schwink-Zanella (2017)
Eleanor Turrell (2016-2017)
Liam Schramm (2015-2016) [Graduate Student in Computer Science at Rutgers University]
Zechen Zhang (2014-2015) [Graduate Student in Cambridge's Mathamatial Tripos Part III, then will continue graduate studies at Harvard University]
Clara Sekowski (2014-2015) [M.A. Boston University; Aerospace engineer, Tethers Unlimited Inc.]
Henry C. Travaglini (2014-2015) [Graduate Student at UC Davis]
Eli Regen (2014-2015) [M.S. Illinois Institute of Technology, working in the technology industry]
Lyla (Carter) Vanderbilt (2014-2015) [Graduate Student at Union Theological Seminary]
Ilya Esterlis (2012-2014) [M.S. Perimeter Institute; Ph.D. Stanford, Postdoctoral Fellow, Harvard]

Postdoctoral Scientists
Joshua Cooperman (2015-2017) [Visiting assistant professor at Bucknell University]
Eleni Kontou (2015-2017) [Marie-Curie Fellow, York University]