

Curriculum Vitae

Marcus Spradlin

Position, Academic Department

Professor, Department of Physics, Brown University

Address

Department of Physics
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Education

A.B. in Physics, Princeton University, 06/1996, summa cum laude
MASt. in Applied Mathematics, Cambridge, 06/1997, with distinction
M.A. in Physics, Harvard University, 03/1999
Ph.D. in Physics, Harvard University, 06/2001
Advisor: Andrew Strominger
Dissertation Topic: *AdS₂ Black Holes and Soliton Moduli Spaces*

Professional Appointments

Research Associate, Princeton University, 09/2001–06/2003
Assistant Research Physicist, Kavli Institute for Theoretical Physics, 07/2003–08/2005
Member, School of Natural Sciences, Institute for Advanced Study, 09/2005–06/2006
Manning Assistant Professor, Brown University, 07/2006–06/2011
Member, School of Natural Sciences, Institute for Advanced Study, 01/2011–03/2011
Scientific Associate, CERN Theory Group, 08/2012–07/2013
Associate Professor, Brown University, 07/2011–06/2017
Professor, Brown University, 07/2017–present
Member, School of Natural Sciences, Institute for Advanced Study, 09/2017–06/2018

Invited Talks

Lectures at Workshops, Conferences and Schools; Colloquia

1. Indian Strings Meeting, Harish-Chandra Research Institute (HRI), Allahabad, India, 12/2002 (declined)
2. Lecturer, *Trieste Spring School on Superstring Theory and Related Topics* International Centre for Theoretical Physics (ICTS), Trieste, Italy, 04/2003
3. *Strings 2003*, Yukawa Institute for Theoretical Physics (YITP), Kyoto, Japan, 07/2003 (declined)
4. *Strings in the Pyrenees*, Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain, 07/2003
5. AMS-IMS-SIAM Joint Summer Research Conference on String Geometry, Snowbird, Utah, 06/2004
6. *Modern Trends in String Theory II*, The Theoretical Physics Center at University of Porto, Porto, Portugal, 06/2004
7. KITP Conference on *QCD and String Theory*, Kavli Institute for Theoretical Physics (KITP), Santa Barbara, California, 11/2004
8. London Mathematical Society Workshop on *Twistor String Theory*, University of Oxford, England, 01/2005
9. Lecturer, International Spring School on String Theory, Zhejiang University, Hangzhou, China, 05/2005
10. Queen Mary University Workshop on *From Twistors to Amplitudes*, London, England, 11/2005 (declined)
11. *Frontiers in String Theory*, Banff International Research Station (BIRS), Canada, 02/2006
12. Aspen Winter Conference on *Particle Physics at the Verge of Discovery*, Colorado, 02/2006
13. *Great Lakes Strings*, University of Michigan, Ann Arbor, 04/2006
14. Plenary speaker, *Continuous Advances in QCD 2006*, University of Minnesota, Minneapolis, 05/2006
15. *Twistors, Strings, Gauge Theory and Gravity*, Perimeter Institute (PI), Waterloo, Canada, 09/2006
16. *Is $\mathcal{N} = 8$ Supergravity Finite?*, University of California, Los Angeles, 12/2006
17. *Twistors, perturbative gauge theories, supergravity and superstrings*, Arnold Sommerfeld Center for Theoretical Physics (ASC), Ludwig Maximilian University of Munich, Germany, 06/2007 (declined)
18. *Ninth Workshop on Non-Perturbative Quantum Chromodynamics*, Institut d'Astrophysique de Paris (IAP), France, 06/2007

19. London Mathematical Society Workshop on *Twistors, Strings and Scattering Amplitudes*, Institute for Particle Physics Phenomenology (IPPP), Durham, England, 08/2007 (declined)
20. *Advancing Collider Physics: From Twistors to Monte Carlos*, Galileo Galilei Institute for Theoretical Physics (GGI), Florence, Italy, 08/2007
21. *Quantum Gravity in the Southern Cone*, Punta del Este, Uruguay, 10/2007
22. *Wonders of Gauge Theory and Supergravity*, Centre CEA de Saclay, France, 06/2008 (declined)
23. *Emerging Directions in String Theory*, Banff International Research Station (BIRS), Canada, 06/2008
24. *QCD and Strings*, Center for Theoretical Studies, Eidgenössische Technische Hochschule (ETH) Zürich, Switzerland, 07/2008 (declined)
25. *Monsoon Workshop on String Theory*, Tata Institute of Fundamental Research (TIFR), Mumbai, India, 07/2008
26. *Hidden Structures in Field Theory Amplitudes*, Niels Bohr Institute (NBI), Copenhagen, Denmark, 09/2008
27. Lecturer, *3rd Asian Winter School on String Theory*, Institute of Theoretical Physics, Peking University, China, 01/2009 (declined)
28. *Gauge Fields, Cosmology and Mathematical String Theory*, Banff International Research Station (BIRS), Canada, 02/2009 (declined)
29. *Amplitudes '09*, Institute for Particle Physics Phenomenology (IPPP), Durham, England, 03/2009 (declined)
30. *Quantum Theory and Symmetries 6*, University of Kentucky, Lexington, 07/2009
31. *Hidden Structures in Field Theory Amplitudes 2009*, Niels Bohr Institute (NBI), Copenhagen, Denmark, 08/2009
32. *Integrability in Gauge and String Theories 2010*, Nordic Institute for Theoretical Physics (NORDITA), Stockholm, Sweden, 06/2010
33. *Quantum Field Theory: Developments and Perspectives*, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany, 09/2010
34. *UK Annual Theory Meeting*, Institute for Particle Physics Phenomenology (IPPP), Durham, England, 12/2010 (declined)
35. *Soft Collinear Effective Theory Workshop 2011*, Carnegie Mellon University, Pennsylvania, 03/2011
36. KITP Workshop on *Harmony of Scattering Amplitudes*, Kavli Institute for Theoretical Physics, Santa Barbara, California, 04/2011
37. KITP Workshop on *Harmony of Scattering Amplitudes*, Kavli Institute for Theoretical Physics, Santa Barbara, California, 06/2011
38. Amplitudes Workshop at the INT program *Frontiers of QCD*, University of Washington, Seattle, 09/2011 (declined)

39. *Integrability and Scattering Amplitudes*, Institut national de physique nucléaire et de physique des particules (IN2P3), Annecy, France, 11/2011 (declined)
40. *Amplitudes 2011*, University of Michigan, Ann Arbor, 11/2011
41. *UK Annual Theory Meeting*, Institute for Particle Physics Phenomenology (IPPP), Durham, England, 12/2011 (declined)
42. Plenary speaker, German Physical Society Spring Conference on Particle Physics, University of Göttingen, Germany, 03/2012
43. *Amplitudes 2012*, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany, 03/2012
44. Nuclear and Particle Physics Colloquium, Massachusetts Institute of Technology (MIT), Boston, 03/2012
45. Isaac Newton Institute Workshop on Scattering Amplitudes, University of Cambridge, England, 04/2012
46. ICMAT Workshop on *Periods and Motives—Modern Perspectives of Perturbative Renormalization*, Institute of Mathematical Sciences, Madrid, Spain, 07/2012
47. *Scattering Amplitudes: from QCD to maximally supersymmetric Yang-Mills theory and back*, European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*), Trento, Italy, 07/2012 (declined)
48. *The Geometry of Scattering Amplitudes*, Banff International Research Station (BIRS), Canada, 08/2012 (declined)
49. Subrahmanian Chandrasekhar Discussion Meeting, International Centre for Theoretical Sciences (ICTS), Bangalore, India, 09/2012 (declined)
50. Joint Theory Colloquium, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany, 11/2012
51. Indian Strings Meeting 2012, Puri, India, 12/2012 (declined)
52. Physics Department Colloquium, University of Siegen, Germany, 01/2013
53. Zürich Physics Colloquium, University of Zürich, Switzerland, 04/2013
54. *Twelfth Workshop on Non-Perturbative Quantum Chromodynamics*, Institut d’Astrophysique de Paris (ASC), France, 06/2013
55. LMS Symposium on *Polylogarithms as a bridge between Number Theory and Particle Physics*, Durham University, England, 07/2013
56. Simons Center for Geometry and Physics (SCGP) Weekly Talk, Stony Brook, New York, 11/2013
57. Colloquium, Arnold Sommerfeld Center for Theoretical Physics (ASC), Ludwig Maximilian University of Munich, Germany, 12/2013
58. Lecturer, Theoretical Advanced Study Institute (TASI) 2014, University of Colorado, Boulder, Colorado, 06/2014
59. *Current Themes in High Energy Physics and Cosmology*, Niels Bohr Institute (NBI), Copenhagen, Denmark, 08/2014 (declined)

60. *New geometric structures in Scattering Amplitudes*, Mathematical Institute, University of Oxford, England, 09/2014 (declined)
61. Colloquium, Mathematics Department, Brown University, Providence, Rhode Island, 10/2014
62. Opening Talk, *Scattering Amplitudes in Hong Kong*, The Hong Kong University of Science and Technology (HKUST), 11/2014
63. *Grassmannian Geometry of Scattering Amplitudes* workshop at Caltech, Pasadena, California, 12/2014 (declined)
64. *Great Lakes Strings*, University of Michigan, Ann Arbor, 03/2015
65. Lecturer, *Geometry and Physics*, Perimeter Institute (PI), Waterloo, Canada, 05/2015
66. *Strings 2015*, International Centre for Theoretical Sciences (ICTS), Bangalore, India, 06/2015
67. Lecturer, International Summer School on *Theoretical Problems of Physics of Fundamental Interactions*, Zelenogorsk, Russia, 07/2015
68. Lecturer, *Amplitudes in Asia 2015*, National Taiwan University (NTU), Taipei, Taiwan, 11/2015
69. Isaac Newton Institute Workshop on Gravity, Twistors and Amplitudes, University of Cambridge, England, 06/2016
70. *Amplitudes 2016*, Nordic Institute for Theoretical Physics (NORDITA), Stockholm, Sweden, 07/2016
71. Berlin joint math-physics meeting, Humboldt University of Berlin, Germany, 07/2016
72. *Current Themes in High Energy Physics and Cosmology*, Niels Bohr Institute (NBI), Copenhagen, Denmark, 08/2016 (declined)
73. *Recent Developments in Fields, Strings, and Gravity*, University of California, Davis, 12/2016
74. Colloquium, Arnold Sommerfeld Center for Theoretical Physics (ASC), Ludwig Maximilian University of Munich, Germany, 12/2016
75. Lecturer, *Trieste Spring School on Superstring Theory and Related Topics*, International Centre for Theoretical Physics (ICTS), Trieste, Italy, 03/2017
76. Lecturer, *SFB School on Cluster Algebras*, Mathematical Institute of the University of Bonn, Germany, 03/2017
77. Lecturer, *Amplitudes 2017 Summer School*, Edinburgh, Scotland, 07/2017

Seminars

1. Harvard University, April 1999
2. Cornell University, December 1999

3. University of Pennsylvania, March 2000
4. Harvard University, October 2000
5. Princeton University, December 2001
6. AT&T Research Headquarters, January 2002
7. University of Michigan, January 2002
8. Rutgers University, September 2002
9. University of Michigan, September 2002
10. University of Texas, October 2002
11. Massachusetts Institute of Technology (MIT), October 2002
12. University of North Carolina at Chapel Hill, November 2002
13. Duke University, November 2002
14. University of California, Berkeley, September 2003
15. Ohio State University, December 2003
16. Yale University, February 2004
17. University of Pennsylvania, February 2004
18. University of Southern California, February 2004
19. University of California, Davis, April 2004
20. Stanford Linear Accelerator Center (SLAC), April 2004
21. DPF (Division of Particles and Fields) Meeting of the APS, August 2004
22. University of Chicago, September 2004
23. Kavli Institute for Theoretical Physics (KITP), Santa Barbara, December 2004
24. University of Amsterdam, January 2005
25. SUNY Stony Brook, January 2005
26. University of California, Davis, February 2005
27. California Institute of Technology (MIT), February 2005
28. Johns Hopkins University, February 2005
29. Cornell University, February 2005
30. University of Maryland, February 2005
31. University of Rochester, March 2005
32. University of California, Los Angeles, March 2005
33. University of Michigan, March 2005
34. University of Washington, May 2005
35. Institute for Advanced Study (IAS), Princeton, December 2005
36. Brown University, February 2006

37. Columbia University, March 2006
38. Massachusetts Institute of Technology (MIT), September 2006
39. SUNY Stony Brook, March 2007
40. Princeton University, April 2007
41. Perimeter Institute (PI), October 2007
42. Stanford University, October 2007
43. Miami 2007 Conference, December 2007
44. Miami 2008 Conference, December 2008
45. Brandeis University, February 2009
46. University of Massachusetts, Amherst, March 2009
47. Miami 2009 Conference, December 2009
48. Yale University, March 2010
49. SLAC National Accelerator Laboratory, October 2010
50. Miami 2010 Conference, December 2010
51. Institute for Advanced Study (IAS), Princeton, January 2011
52. Kavli Institute for Theoretical Physics, Santa Barbara, April 2011
53. DPF (Division of Particles and Fields) Meeting of the APS, August 2011
54. CERN, August 2011
55. Rutgers University, September 2011
56. Miami 2011 Conference, December 2011
57. Southern Connecticut State University, February 2012
58. Brown University Mathematics Department, May 2012
59. Eidgenössische Technische Hochschule (ETH) Zürich, October 2012
60. CERN, June 2013
61. Massachusetts Institute of Technology (MIT), September 2013
62. Institute for Advanced Study (IAS), Princeton, January 2014
63. Harvard University, January 2014
64. Duke University, September 2014
65. Miami 2014 Conference, December 2014
66. Arizona State University, March 2015
67. Brandeis University, April 2015
68. Institute for Advanced Study (IAS), Princeton, January 2016
69. Rutgers University, February 2016
70. Perimeter Institute (PI), May 2016

71. CERN, July 2016

72. SLAC National Accelerator Laboratory, January 2017

Research Grants

1. National Science Foundation (NSF) grant PHY-0638520, *String Theory Applications to Particle and Gravitational Physics*, 07/2006–06/2009, sole PI, total award \$120,000
2. National Science Foundation (NSF) grant PHY-0714747, *Northeast Regional String Theory Conference Program*, 04/2007–03/2009, co-PI with D. Lowe and A. Volovich, total award \$5,000
3. Department of Energy Outstanding Junior Investigator Award (DOE OJI), *Mathematical Structures in Gauge and String Theory*, 06/2007–10/2011, sole PI, total award \$350,000
4. Richard B. Salomon Faculty Research Award, Brown University, 01/2008–06/2009, total award \$15,000
5. Department of Energy (DOE) grant DE-FG02-91ER40688 (Task A), *Program in Theoretical High Energy Physics*, 11/2011–03/2013, co-PI with Profs. Jevicki, Lowe, and Tan, total award \$462,707
6. Department of Energy (DOE) grant DE-SC0010010 (Task A), *Program in Theoretical High Energy Physics*, 05/2013–03/2016, co-PI with Profs. Jevicki, Lowe, and Tan, total award \$946,241
7. Department of Energy (DOE) grant DE-SC0010010 (Task A), *Program in Theoretical High Energy Physics*, 04/2016–03/2019, co-PI with Profs. Fan, Jevicki, Lowe, Tan, and Volovich, total award \$1,380,000

Academic Honors

Barry M. Goldwater Scholarship, 1994–95 and 1995–96

Kusaka Memorial Prize in Physics, Princeton University, 1995 and 1996

Elected to Phi Beta Kappa, 1996

Elected to Sigma Xi, 1996

NSF Graduate Research Fellowship in Theoretical Physics, 1996–1999

Maurice Goldhaber Prize, Harvard University Department of Physics, 2000

Appointed Manning Assistant Professor of Physics, Brown University, 2006

Department of Energy Outstanding Junior Investigator Award, 2007

Richard B. Salomon Faculty Research Award, 2008