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EMPLOYMENT	2019–present Lecturer, University of Liverpool 2016–2019 Postdoctoral Researcher, University of Bern 2013–2016 Postdoctoral Researcher, Syracuse University 2011–2013 Postdoctoral Researcher, University of Colorado Boulder	
EDUCATION	2011 Ph.D., Physics, Boston University 2011 Certificate in Computational Science, Boston University 2008 M.A., Physics, Boston University 2006 B.A. <i>summa cum laude</i> , Physics, History, and Mathematics, Amherst College	
PUBLICATION METRICS	84 publications; 2364 citations; $h = 27$; $g = 46$ See also inspirehep.net/author/profile/D.Schaich.1	
PENDING AND RECENT GRANTS	2024 Science and Technology Facilities Council Conference grant, 6000 GBP <i>41st International Symposium on Lattice Field Theory</i> 2024 DiRAC proposal under review requesting 13.8M core hours <i>Stealth Dark Matter Confinement Transition and Gravitational Waves</i> 2023 UKRI Future Leader Fellowship Renewal MR/X015157/1, 572k GBP <i>New Frontiers of Lattice Field Theory</i> 2023 Science and Technology Facilities Council Consolidated Grant ST/X000699/1 <i>Particles, Fields and Strings at Liverpool</i> , 995k GBP <i>UK Virtual Centre in Lattice Field Theory</i> , 21.3k GBP 2023 DiRAC computing allocation, 10.44M core hours <i>Electroweak S-parameter from lattice strong dynamics</i> 2022 DiRAC computing allocation, 24.04M core hours <i>Lattice studies of 3d super-Yang–Mills and holography</i> 2021 USQCD computing allocation, 15M core hours <i>Composite Higgs model with four light and six heavy flavors</i>	
TEACHING	At U. Liverpool: Statistical Physics (upper-division undergraduate), 2024 Spring ; 2023 Spring ; 2022 Spring ; 2021 Spring ; 2020 Spring Elsewhere: 2022 Summer Lattice Supersymmetric Field Theories (graduate), ICTS Bengaluru 2021 Summer Lattice Field Theory Algorithms (graduate), Bad Honnef Physics School 2017 Autumn New strong dynamics beyond the standard model (graduate), U. Bern 2013–2014 Advanced quantum field theory (graduate, informal), Syracuse U. 2012–2013 Advanced Quantum Field Theory (graduate, informal), U. Colorado	

HONORS AND AWARDS	2019–2026	UK Research & Innovation (UKRI) Future Leader Fellowship
	2007–2009	US National Science Foundation IGERT Fellowship
	2008	Boston University Physics Department Chair’s Book Prize
	2006–2007	Boston University Dean’s Fellowship
	2006–2007	Forris Jewett Moore Fellowship from Amherst College
	2006	Sigma Xi, The Scientific Research Society
	2005	Phi Beta Kappa
SHORT-TERM APPOINTMENTS	2018	International Centre for Theoretical Sciences, Bengaluru, January–February
	2016	Kavli Institute for Theoretical Physics, Santa Barbara, February–March
	2015	Humboldt University, Berlin, November–December
	2015	Kavli Institute for Theoretical Physics, Santa Barbara, August–September
	2015	Aspen Center for Physics, May–June
	2013	Aspen Center for Physics, May–June
	2011	National Center for Theoretical Sciences, Taipei, June–August
	2010	Lawrence Livermore National Lab, January–February
	2005	CERN, June–August
PHD STUDENT SUPERVISION	2020–present	Angel Sherletov <i>Lattice Supersymmetry</i>
	2020–present	Felix Springer <i>First-order phase transitions in $SU(N)$ lattice Yang–Mills theories using the density of states</i>
UNDERGRAD PROJECT SUPERVISION	2023–present	Hubert Radecki <i>Dark matter and primordial black holes</i>
	2022–2023	Sam Godwood <i>Toward Fault-Tolerant Quantum Computing</i> → PhD (U. Liverpool)
	2021–2022	John Kerfoot <i>The Superconducting Transmon Qubit and the Cross-Resonance Interaction</i> Awarded IMA Best Project in the North West second-place prize Awarded U. Liverpool Numerical Analysis Software Prize
	2020–2021	Wesley Richards <i>The Variational Quantum Eigensolver and its Applications in Modern Quantum Computing</i>
PHD STUDENTS MENTORED	2019–2023	James Roscoe (advisor: Kurt Langfeld), U. Liverpool <i>First-principles quantum field theory for cold and dense matter</i>
	2016–2019	Nouman Butt (advisor: Simon Catterall), Syracuse U. <i>Strongly coupled fermions on lattice</i> → Postdoc (Argonne)
	2014–2019	Raghav G. Jha (advisor: Simon Catterall), Syracuse U. <i>Holography, large N, and supersymmetry on the lattice</i> → Postdoc (Perimeter)
	2013–2015	Aarti Veernala (advisor: Simon Catterall), Syracuse U. <i>Looking Beyond the Standard Model from the Lattice</i> → Postdoc (Fermilab)
	2011–2014	Gregory Petropoulos (advisor: Anna Hasenfratz), U. Colorado Boulder <i>Studies with Improved Renormalization Group Techniques</i> → Data science industry (CenturyLink Cognilytics)
	2011–2014	Anqi Cheng (advisor: Anna Hasenfratz), U. Colorado Boulder <i>Lattice Studies of $SU(3)$ Gauge System with Many Fermion Flavors</i> → Data science industry (Rule14)

JOURNAL REFEREE	Physical Review Letters, 9 reviews since 2014 Physical Review D, 8 reviews since 2012 PRX Quantum, 3 reviews since 2020 Physical Review X, 1 review since 2021 Journal of High Energy Physics, 3 reviews since 2017 European Physical Journal Special Topics, 1 review since 2022 Physical Review B, 4 reviews since 2012 Nuclear Physics B, 1 review since 2014 International Journal of Modern Physics A, 3 reviews since 2017
WORKSHOP ORGANIZATION	2024 41st International Symposium on Lattice Field Theory University of Liverpool, 28 July–3 August 2023 52nd British Universities Summer School in Theoretical Elementary Particle Physics University of Liverpool, 29 August–9 September 2022 Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory and Holography International Centre for Theoretical Sciences, Bengaluru, 22 August–2 September 2022 UK Lattice Field Theory Virtual Centre Annual Meeting University of Liverpool, 26–27 May 2021 Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory and Holography International Centre for Theoretical Sciences, Bengaluru, 18–22 January (remote) 2020 Physics of strongly interacting fermions in low-dimensional materials and high-energy physics: a numerical perspective University of Liverpool, 18 March (canceled due to Covid-19 pandemic) 2018 Interdisciplinary approach to QCD-like composite dark matter ECT* Trento, 1–5 October 2018 Numerical approaches to holography, quantum gravity and cosmology Higgs Centre for Theoretical Physics, University of Edinburgh, 21–24 May 2014 Field Theoretic Computer Simulations for Particle Physics and Condensed Matter Boston University, 8–10 May 2012 Lattice Meets Experiment: Beyond the Standard Model , U. Colorado, 26–27 October 2010 QCDNA6: Numerical Analysis for Lattice Gauge Theory , Boston U., 8–10 September 2009 Lattice Gauge Theory for LHC Physics , Boston University, 6–7 November
ADDITIONAL TRAINING	2021 Postgraduate Certificate in Academic Practice, September 2019 through May 2021 2016 Advancing Learning through Evidence-Based STEM Teaching, 1 June–31 July 2015 An Introduction to Evidence-Based Undergraduate STEM Teaching, 28 Sept.–19 Nov. 2009 Les Houches Summer School in Lattice Gauge Theory, 3–28 August 2007 CTEQ Summer School on QCD Analysis and Phenomenology, 30 May–7 June 2005 CERN Summer Students Programme, 6 July–12 August
PROFESSIONAL MEMBERSHIPS	American Physical Society, since 2006 European Physical Society, since 2018 Institute of Physics, since 2018 Institute of Mathematics and its Applications, since 2019 American Association for the Advancement of Science, since 2013 Physicists Coalition for Nuclear Threat Reduction, since 2020 Sigma Xi, The Scientific Research Society, since 2006 Free Software Foundation, since 2010 Liverpool Mathematical Society, since 2020 Swiss Institute of Particle Physics, 2016–2019

U. LIVERPOOL SERVICE	<p>Director of Theoretical Physics BSc, MMath and MPhys Programmes since 2023</p> <p>Member of Mathematical Sciences Board of Studies</p> <p>Member of Mathematical Sciences Curriculum Board</p> <p>Member of Mathematical Sciences Board of Examiners</p> <p>Member of Physics Board of Studies</p> <p>Member of Physics Curriculum Board</p> <p>Physics Open Day presenter</p> <p>Professional Development Reviewer for 2 staff members since 2022</p> <p>Independent Progress Assessment Panel member for 4 PhD students since 2019</p> <p>Academic advisor for 2 MSc students since 2020</p> <p>Academic advisor for 9 undergrad students since 2023</p> <p>MSc project second marker for 1 student since 2021</p> <p>Undergrad project second marker for 5 students since 2019</p> <p>Summer project supervisor for 3 A-level students since 2022</p> <p>Fellowship application support for 3 applicants since 2020</p> <p>Expert reviewer for 2 Research Fellowship applicants since 2023</p> <p>Demand management peer reviewer for 2 proposals since 2020</p> <p>Mock interview panelist on 3 panels since 2021</p> <p>Departmental Research Committee Research Support Group member since 2019</p> <p>School rep on Faculty Research Computing task and finish group, 2021</p> <p>Fixed-term Lecturer search committee member, 2019</p>
OTHER PROFESSIONAL SERVICE	<p>Member, Particle Physics & Nuclear Theory Subpanel, STFC DiRAC Resource Allocation Committee, 2022–2025</p> <p>Member, Selection Committee for the Kenneth G. Wilson Award for Excellence in Lattice Field Theory, 2022–2023</p> <p>Section author, <i>DiRAC Science Case 2024–2028</i> (2023)</p> <p>External PhD examiner, U. Jena (2020) and Swansea U. (2022)</p> <p>Member, STFC DiRAC First Assessment Panel, 2021</p> <p>Scientific reviewer for grant and fellowship applications:</p> <ul style="list-style-type: none"> STFC Ernest Rutherford Fellowships, 2 reviews since 2021 Swiss National Supercomputing Centre, 1 review since 2022 Partnership for Advanced Computing in Europe (PRACE), 1 review since 2019 <p>Member, UK Lattice Field Theory Virtual Centre, since 2019</p> <p>Advisory board or network memberships:</p> <ul style="list-style-type: none"> Irish Research Council Outer International Assessment Board, since 2021 UKRI Talent Peer Review College, since 2019 <p>Conference parallel session chair:</p> <ul style="list-style-type: none"> Lattice 2023 (Quantum Computing and Quantum Information) Lattice 2022 (Particle Physics Beyond the Standard Model) Lattice 2021 (Particle Physics Beyond the Standard Model) Lattice 2018 (Physics Beyond the Standard Model) Lattice 2017 (Applications Beyond QCD) <p>ECT* Trento Associate, since 2018</p> <p>Member, USQCD Software Committee, 2013–2016</p> <p>Contributor to MIMD Lattice Computation (MILC) software, 2012</p> <p>Amherst College alumnus mentor, seven undergraduates mentored, 2013–2017</p>
TECHNICAL EXPERTISE	<p>Programming: C; Python; Bash; Fortran; Perl</p> <p>High-performance computing: MPI-based lattice domain-specific languages (MILC, QDP)</p> <p>Version control: git; svn</p> <p>System administration: GNU/Linux</p> <p>Markup & Web: L^AT_EX; B_IB_TE_X; HTML; PHP; SQL</p>
LANGUAGES	<p>English (native); Spanish (intermediate/B1); German (elementary/A2); Welsh (basic/A1)</p>

Citation metrics

2364 citations; $h = 27$; $g = 46$

See also inspirehep.net/author/profile/D.Schaich.1

Refereed journal articles

84. *Stealth dark matter spectrum using LapH and Irreps*
LSD Collaboration: Richard C. Brower, Christopher Culver, Kimmy K. Cushman, George T. Fleming *et al.*
Submitted to *Physical Review D* (2024) [[arXiv:2312.07836](https://arxiv.org/abs/2312.07836)]
83. *Phase diagram of two-dimensional $SU(N)$ super-Yang–Mills theory with four supercharges*
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph and David Schaich
Submitted to *Journal of High Energy Physics* (2023) [[arXiv:2312.04980](https://arxiv.org/abs/2312.04980)]
82. *First-order bulk transitions in large- N lattice Yang–Mills theories using the density of states*
Felix Springer, Enrico Rinaldi and David Schaich for the Lattice Strong Dynamics (LSD) Collaboration
Submitted to *Physical Review D* (2023) [[arXiv:2311.10243](https://arxiv.org/abs/2311.10243)]
81. *Hidden Conformal Symmetry from the Lattice*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Kimmy K. Cushman, George T. Fleming *et al.*
Physical Review D **109**:L091505 (2023, Letter) [[arXiv:2305.03665](https://arxiv.org/abs/2305.03665)]
80. *Light Scalar Meson and Decay Constant in $SU(3)$ Gauge Theory with Eight Dynamical Flavors*
LSD Collaboration: Richard C. Brower, Evan Owen, Claudio Rebbi, Christopher Culver, David Schaich *et al.*
Submitted to *Physical Review D* (2023) [[arXiv:2306.06095](https://arxiv.org/abs/2306.06095)]
79. *Lattice studies of supersymmetric gauge theories*
David Schaich
European Physical Journal Special Topics **232**:305 (2023) [[arXiv:2208.03580](https://arxiv.org/abs/2208.03580)]
78. *Non-perturbative phase structure of the bosonic BMN matrix model*
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph, Abhishek Samlodia and David Schaich
Journal of High Energy Physics **2205**:169 (2022) [[arXiv:2201.08791](https://arxiv.org/abs/2201.08791)]
Data release at [doi:10.5281/zenodo.6462432](https://doi.org/10.5281/zenodo.6462432)
77. *Goldstone boson scattering with a light composite scalar*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Kimmy K. Cushman, George T. Fleming *et al.*
Physical Review D **105**:034505 (2022, Editors' Suggestion) [[arXiv:2106.13534](https://arxiv.org/abs/2106.13534)]
76. *Eigenvalue spectrum and scaling dimension of lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills*
Georg Bergner and David Schaich
Journal of High Energy Physics **2104**:260 (2021) [[arXiv:2102.06775](https://arxiv.org/abs/2102.06775)]
75. *Stealth dark matter confinement transition and gravitational waves*
LSD Collaboration: Richard C. Brower, Kimmy Cushman, George T. Fleming, Andrew Gasbarro *et al.*
Physical Review D **103**:014505 (2021) [[arXiv:2006.16429](https://arxiv.org/abs/2006.16429)]
Data release at [doi:10.5281/zenodo.3921870](https://doi.org/10.5281/zenodo.3921870)
74. *Near-conformal dynamics in a chirally broken system*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Kimmy K. Cushman, George T. Fleming *et al.*
Physical Review D **103**:014504 (2021) [[arXiv:2007.01810](https://arxiv.org/abs/2007.01810)]
73. *Three-dimensional super-Yang–Mills theory on the lattice and dual black branes*
Simon Catterall, Joel Giedt, Raghav G. Jha, David Schaich and Toby Wiseman
Physical Review D **102**:106009 (2020) [[arXiv:2010.00026](https://arxiv.org/abs/2010.00026)]
Data release at [doi:10.5281/zenodo.4059476](https://doi.org/10.5281/zenodo.4059476)
72. *Nonperturbative investigations of $SU(3)$ gauge theory with eight dynamical flavors*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, George T. Fleming, Andrew Gasbarro *et al.*
Physical Review D **99**:014509 (2019) [[arXiv:1807.08411](https://arxiv.org/abs/1807.08411)]

71. *SO(4) invariant Higgs–Yukawa model with reduced staggered fermions*
 Nouman Butt, Simon Catterall and David Schaich
Physical Review D **98**:114514 (2018) [arXiv:1810.06117]
70. *Linear Sigma EFT for Nearly Conformal Gauge Theories*
 LSD Collaboration: Thomas Appelquist, Richard C. Brower, George T. Fleming, Andrew Gasbarro *et al.*
Physical Review D **98**:114510 (2018, Editors' Suggestion) [arXiv:1809.02624]
69. *Solution of the sign problem in the Potts model at fixed fermion number*
 Andrei Alexandru, Georg Bergner, David Schaich and Urs Wenger
Physical Review D **97**:114503 (2018) [arXiv:1712.07585]
68. *Testing holography using lattice super-Yang–Mills on a 2-torus*
 Simon Catterall, Raghav G. Jha, David Schaich and Toby Wiseman
Physical Review D **97**:086020 (2018) [arXiv:1709.07025]
67. *Nonperturbative β function of twelve-flavor SU(3) gauge theory*
 Anna Hasenfratz and David Schaich
Journal of High Energy Physics **1802**:132 (2018) [arXiv:1610.10004]
66. *Novel phases in strongly coupled four-fermion theories*
 Simon Catterall and David Schaich
Physical Review D **96**:034506 (2017) [arXiv:1609.08541]
65. *Strongly interacting dynamics and the search for new physics at the LHC*
 LSD Collaboration: Thomas Appelquist, Richard C. Brower, George T. Fleming, Anna Hasenfratz *et al.*
Physical Review D **93**:114514 (2016) [arXiv:1601.04027]
64. *Detecting Stealth Dark Matter Directly through Electromagnetic Polarizability*
 LSD Collaboration: Thomas Appelquist, Evan Berkowitz, Richard C. Brower, Michael I. Buchoff *et al.*
Physical Review Letters **115**:171803 (2015, Editors' Suggestion) [arXiv:1503.04205]
63. *Stealth dark matter: Dark scalar baryons through the Higgs portal*
 LSD Collaboration: Thomas Appelquist, Richard C. Brower, Michael I. Buchoff, George T. Fleming *et al.*
Physical Review D **92**:075030 (2015, Editors' Suggestion) [arXiv:1503.04203]
62. *Lifting flat directions in lattice supersymmetry*
 Simon Catterall and David Schaich
Journal of High Energy Physics **1507**:057 (2015) [arXiv:1505.03135]
61. *Nonperturbative β function of eight-flavor SU(3) gauge theory*
 Anna Hasenfratz, David Schaich and Aarti Veernala
Journal of High Energy Physics **1506**:143 (2015) [arXiv:1410.5886]
60. *Parallel software for lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills theory*
 David Schaich and Thomas DeGrand
Computer Physics Communications **190**:200–212 (2015) [arXiv:1410.6971]
59. *Lattice simulations with eight flavors of domain wall fermions in SU(3) gauge theory*
 LSD Collaboration: Thomas Appelquist, Richard C. Brower, George T. Fleming, Joe Kiskis, Meifeng Lin *et al.*
Physical Review D **90**:114502 (2014) [arXiv:1405.4752]
58. *$\mathcal{N} = 4$ supersymmetry on a space-time lattice*
 Simon Catterall, Poul H. Damgaard, Thomas DeGrand, Joel Giedt and David Schaich
Physical Review D **90**:065013 (2014) [arXiv:1405.0644]
57. *Finite size scaling of conformal theories in the presence of a near-marginal operator*
 Anqi Cheng, Anna Hasenfratz, Yuzhi Liu, Gregory Petropoulos and David Schaich
Physical Review D **90**:014509 (2014) [arXiv:1401.0195]
56. *Maximum-likelihood approach to topological charge fluctuations in lattice gauge theory*
 LSD Collaboration: Richard C. Brower, Michael Cheng, George T. Fleming, Meifeng Lin, Ethan T. Neil *et al.*
Physical Review D **90**:014503 (2014) [arXiv:1403.2761]

55. *Composite bosonic baryon dark matter on the lattice: $SU(4)$ baryon spectrum and the effective Higgs interaction*
LSD Collaboration: Thomas Appelquist, Evan Berkowitz, Richard C. Brower, Michael I. Buchoff *et al.*
Physical Review D **89**:094508 (2014) [arXiv:1402.6656]
54. *Improving the continuum limit of gradient flow step scaling*
Anqi Cheng, Anna Hasenfratz, Yuzhi Liu, Gregory Petropoulos and David Schaich
Journal of High Energy Physics **1405**:137 (2014) [arXiv:1404.0984]
53. *Two-Color Gauge Theory with Novel Infrared Behavior*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Michael I. Buchoff, Michael Cheng *et al.*
Physical Review Letters **112**:111601 (2014) [arXiv:1311.4889]
52. *Scale-dependent mass anomalous dimension from Dirac eigenmodes*
Anqi Cheng, Anna Hasenfratz, Gregory Petropoulos and David Schaich
Journal of High Energy Physics **1307**:061 (2013) [arXiv:1301.1355]
51. *Lattice calculation of composite dark matter form factors*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Michael I. Buchoff, Michael Cheng *et al.*
Physical Review D **88**:014502 (2013) [arXiv:1301.1693]
50. *Novel phase in $SU(3)$ lattice gauge theory with 12 light fermions*
Anqi Cheng, Anna Hasenfratz and David Schaich
Physical Review D **85**:094509 (2012) [arXiv:1111.2317]
49. *WW scattering parameters via pseudoscalar phase shifts*
LSD Collaboration: Thomas Appelquist, Ron Babich, Richard Brower, Michael I. Buchoff *et al.*
Physical Review D **85**:074505 (2012) [arXiv:1201.3977]
48. *Exploring strange nucleon form factors on the lattice*
Ronald Babich, Richard Brower, Michael A. Clark, George T. Fleming, James C. Osborn, Claudio Rebbi *et al.*
Physical Review D **85**:054510 (2012) [arXiv:1012.0562]
47. *Lattice simulations and infrared conformality*
Thomas Appelquist, George T. Fleming, Meifeng Lin, Ethan T. Neil and David Schaich
Physical Review D **84**:054501 (2011) [arXiv:1106.2148]
46. *Parity Doubling and the S Parameter below the Conformal Window*
LSD Collaboration: Thomas Appelquist, Ron Babich, Richard Brower, Michael Cheng, Michael A. Clark *et al.*
Physical Review Letters **106**:231601 (2011) [arXiv:1009.5967]
45. *Toward TeV Conformality*
LSD Collaboration: Thomas Appelquist, Adam Avakian, Ron Babich, Richard Brower, Michael Cheng *et al.*
Physical Review Letters **104**:071601 (2010) [arXiv:0910.2224]
44. *Improved lattice measurement of the critical coupling in ϕ_2^4 theory*
David Schaich and Will Loinaz
Physical Review D **79**:056008 (2009) [arXiv:0902.0045]

Other articles, theses & white papers

43. *Lattice QCD and Particle Physics*
USQCD Collaboration
Snowmass White Paper (2022) [arXiv:2207.07641]
42. *Lattice Gauge Theory for Physics Beyond the Standard Model*
Richard C. Brower, Anna Hasenfratz, Ethan Neil *et al.*
USQCD White Paper (2019) [arXiv:1904.09964]
[Published as *European Physical Journal A* **55**:198 (2019)]
41. *Lattice Gauge Theories at the Energy Frontier*
Thomas Appelquist, Richard Brower, Simon Catterall, George Fleming, Joel Giedt, Anna Hasenfratz *et al.*
USQCD White Paper (2013) [arXiv:1309.1206]

40. *Approaching Conformality with Ten Flavors*
LSD Collaboration: Thomas Appelquist, Richard C. Brower, Michael I. Buchoff, Michael Cheng *et al.*
[arXiv:1204.6000](#) (2012)
39. *Strong Dynamics and Lattice Gauge Theory*
David Schaich
Ph.D. thesis, Boston University (2011) [[UMI-3483480](#)]
38. *Hybrid Monte Carlo Simulation of Graphene on the Hexagonal Lattice*
Richard C. Brower, Claudio Rebbi and David Schaich
[arXiv:1101.5131](#) (2011)
37. *Lattice Simulations of Nonperturbative Quantum Field Theories*
David Schaich
B.A. thesis, Amherst College (2006) [[INSPIRE-1386200](#)]

Conference proceedings

36. *Deconfinement Phase Transition in Bosonic BMN Model at General Coupling*
Navdeep Singh Dhindsa, Anosh Joseph, Abhishek Samlodia and David Schaich
Submitted to *Springer Proceedings in Physics* (2023) [[arXiv:2308.02538](#)]
35. *Exploring conformality in lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills*
David Schaich
Proceedings of Science [LATTICE2022:220](#) (2023) [[arXiv:2304.04655](#)]
34. *Lattice Studies of 3D Maximally Supersymmetric Yang–Mills*
Angel Sherletov and David Schaich
Proceedings of Science [LATTICE2022:221](#) (2023) [[arXiv:2303.13880](#)]
33. *Advances in using density of states for large- N Yang–Mills*
Felix Springer and David Schaich for the Lattice Strong Dynamics (LSD) Collaboration
Proceedings of Science [LATTICE2022:223](#) (2023) [[arXiv:2303.01149](#)]
32. *Quantum computing for the Wess–Zumino model*
Christopher Culver and David Schaich
Proceedings of Science [LATTICE2022:008](#) (2023) [[arXiv:2301.02230](#)]
31. *Progress applying density of states for gravitational waves*
Felix Springer and David Schaich for the Lattice Strong Dynamics (LSD) Collaboration
European Physical Journal Web of Conferences **274**:08008 (2022) [[arXiv:2212.09199](#)]
30. *Investigations of supersymmetric Yang–Mills theories*
Angel Sherletov and David Schaich
Proceedings of Science [LATTICE2021:031](#) (2022) [[arXiv:2201.08626](#)]
29. *Thermal phase structure of dimensionally reduced super-Yang–Mills*
David Schaich, Raghav G. Jha and Anosh Joseph
Proceedings of Science [LATTICE2021:187](#) (2022) [[arXiv:2201.03097](#)]
28. *Density of states for gravitational waves*
Felix Springer and David Schaich
Proceedings of Science [LATTICE2021:043](#) (2022) [[arXiv:2112.11868](#)]
27. *Quantum computing for lattice supersymmetry*
Christopher Culver and David Schaich
Proceedings of Science [LATTICE2021:153](#) (2022) [[arXiv:2112.07651](#)]
26. *Large- N limit of two-dimensional Yang–Mills theory with four supercharges*
Navdeep Singh Dhindsa, Raghav G. Jha, Anosh Joseph and David Schaich
Proceedings of Science [LATTICE2021:433](#) (2022) [[arXiv:2109.01001](#)]

25. *Thermal phase structure of a supersymmetric matrix model*
David Schaich, Raghav G. Jha and Anosh Joseph
Proceedings of Science LATTICE2019:069 (2020) [arXiv:2003.01298]
24. *Stealth dark matter and gravitational waves*
David Schaich
Proceedings of Science LATTICE2019:068 (2020) [arXiv:2002.00187]
23. *Exotic Phases of a Higgs–Yukawa Model with Reduced Staggered Fermions*
Simon Catterall, Nouman Butt and David Schaich
Proceedings of Science LATTICE2019:044 (2020) [arXiv:2002.00034]
22. *Progress and prospects of lattice supersymmetry*
David Schaich
Proceedings of Science LATTICE2018:005 (2019) [arXiv:1810.09282]
21. *Testing the holographic principle using lattice simulations*
Raghav G. Jha, Simon Catterall, David Schaich and Toby Wiseman
European Physical Journal Web of Conferences 175:08004 (2018) [arXiv:1710.06398]
20. *Phases of a strongly coupled four-fermion theory*
David Schaich and Simon Catterall
European Physical Journal Web of Conferences 175:03004 (2018) [arXiv:1710.08137]
19. *Maximally supersymmetric Yang–Mills on the lattice*
David Schaich and Simon Catterall
Origin of Mass and Strong Coupling Gauge Theories:199 (2018) [arXiv:1508.00884]
[Reprinted as *International Journal of Modern Physics A 32:1747019* (2017)]
18. *Finite-temperature study of eight-flavor $SU(3)$ gauge theory*
David Schaich, Anna Hasenfratz and Enrico Rinaldi for the Lattice Strong Dynamics (LSD) Collaboration
Origin of Mass and Strong Coupling Gauge Theories:351 (2018) [arXiv:1506.08791]
17. *Latest results from lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills*
David Schaich, Simon Catterall, Poul H. Damgaard and Joel Giedt
Proceedings of Science LATTICE2016:221 (2016) [arXiv:1611.06561]
16. *S-duality in lattice super Yang–Mills*
Joel Giedt, Simon Catterall, Poul Damgaard and David Schaich
Proceedings of Science LATTICE2016:209 (2016) [arXiv:1804.07792]
15. *Aspects of lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills*
David Schaich
Proceedings of Science LATTICE 2015:242 (2015) [arXiv:1512.01137]
14. *Results from lattice simulations of $\mathcal{N} = 4$ supersymmetric Yang–Mills*
Simon Catterall, Joel Giedt, David Schaich, Poul H. Damgaard and Thomas DeGrand
Proceedings of Science LATTICE2014:267 (2014) [arXiv:1411.0166]
13. *Reaching the chiral limit in many flavor systems*
Anna Hasenfratz, Anqi Cheng, Gregory Petropoulos and David Schaich
Strong Coupling Gauge Theories in the LHC Perspective:44 (2014) [arXiv:1303.7129]
12. *Improved Lattice Renormalization Group Techniques*
Gregory Petropoulos, Anqi Cheng, Anna Hasenfratz and David Schaich
Proceedings of Science LATTICE 2013:079 (2013) [arXiv:1311.2679]
11. *Determining the mass anomalous dimension through the eigenmodes of Dirac operator*
Anqi Cheng, Anna Hasenfratz, Gregory Petropoulos and David Schaich
Proceedings of Science LATTICE 2013:088 (2013) [arXiv:1311.1287]
10. *Eight light flavors on large lattice volumes*
David Schaich for USBSM
Proceedings of Science LATTICE 2013:072 (2013) [arXiv:1310.7006]

9. *Finite size scaling and the effect of the gauge coupling in 12 flavor systems*
 Anna Hasenfratz, Anqi Cheng, Gregory Petropoulos and David Schaich
Proceedings of Science LATTICE 2013:075 (2013) [[arXiv:1310.1124](#)]
8. *MCRG study of 8 and 12 fundamental flavors*
 Gregory Petropoulos, Anqi Cheng, Anna Hasenfratz and David Schaich
Proceedings of Science Lattice 2012:051 (2012) [[arXiv:1212.0053](#)]
7. *Bulk and finite-temperature transitions in $SU(3)$ gauge theories with many light fermions*
 David Schaich, Anqi Cheng, Anna Hasenfratz and Gregory Petropoulos
Proceedings of Science Lattice 2012:028 (2012) [[arXiv:1207.7164](#)]
6. *Mass anomalous dimension from Dirac eigenmode scaling in conformal and confining systems*
 Anna Hasenfratz, Anqi Cheng, Gregory Petropoulos and David Schaich
Proceedings of Science Lattice 2012:034 (2012) [[arXiv:1207.7162](#)]
5. *Strange nucleon form factors on $2+1f$ anisotropic wilson clover lattices*
 Michael Cheng, Ronald Babich, Richard Brower, Michael A. Clark, Saul D. Cohen, George T. Fleming *et al.*
Proceedings of Science Lattice 2012:166 (2012)
4. *Hybrid Monte Carlo simulation on the graphene hexagonal lattice*
 Richard Brower, Claudio Rebbi and David Schaich
Proceedings of Science Lattice 2011:056 (2011) [[arXiv:1204.5424](#)]
3. *S parameter and parity doubling below the conformal window*
 David Schaich for the Lattice Strong Dynamics (LSD) Collaboration
Proceedings of Science Lattice 2011:087 (2011) [[arXiv:1111.4993](#)]
2. *Lattice study of ChPT beyond QCD*
 LSD Collaboration: Ethan T. Neil, Adam Avakian, Ron Babich, Richard C. Brower, Michael Cheng *et al.*
Proceedings of Science CD09:088 (2009) [[arXiv:1002.3777](#)]
1. *Möbius Algorithm for Domain Wall and GapDW Fermions*
 Richard Brower, Ron Babich, Kostas Orginos, Claudio Rebbi, David Schaich and Pavlos Vranas
Proceedings of Science LATTICE 2008:034 (2008) [[arXiv:0906.2813](#)]

Grants and computing allocations

Monetary awards as principal investigator or a primary author of proposal

- 2023 [UK Research and Innovation](#) Future Leader Fellowship Renewal MR/X015157/1, 572k GBP
New Frontiers of Lattice Field Theory
- 2019 UK Research and Innovation Future Leader Fellowship MR/S015418/1, 943k GBP
New Frontiers of Lattice Field Theory
- 2018 University of Bern Albert Einstein Center workshop grant, 5000 CHF
Interdisciplinary approach to QCD-like composite dark matter (ECT* Trento)
- 2018 University of Bern Faculty of Science conference travel grant, 1700 CHF
- 2011 National Science Foundation Award OISE-1107903, 5700 USD
Exploring the Origin of Mass with High-Performance Computing

Monetary awards as participating investigator

- 2024 [Science and Technology Facilities Council](#) Conference grant, 6000 GBP
41st International Symposium on Lattice Field Theory
- 2023 Science and Technology Facilities Council Consolidated Grant ST/X000699/1
Particles, Fields and Strings at Liverpool, 995k GBP
UK Virtual Centre in Lattice Field Theory, 21.3k GBP
- 2022 [Royal Society](#) International Exchanges award, 12k GBP
Toward quantum simulation of quantum gravity
- 2020 Science and Technology Facilities Council Consolidated Grant ST/T000988/1, 898k GBP
New Horizons in Quantum Field Theory, Particle Physics and String Phenomenology
- 2020 Science and Technology Facilities Council Virtual Centre award ST/T000813/1, 19.5k GBP
UK Lattice Field Theory Virtual Centre
- 2020 University of Liverpool Research Centre in Mathematics and Modelling workshop grant, 3000 GBP
Physics of strongly interacting fermions in low-dimensional materials
and high-energy physics: a numerical perspective (canceled due to Covid-19 pandemic)

Monetary awards as project partner

- 2020 [Engineering and Physical Sciences Research Council](#) grant EP/V001329/1, 123k GBP
Exascale Computing Algorithms and Infrastructures Benefitting UK Research (ExCALIBUR) programme
Lattice Field Theory at the Exascale Frontier

Computing allocations as principal investigator or a primary author of proposal

- 2024 [DiRAC](#) proposal under review requesting 13.8M core hours
Stealth Dark Matter Confinement Transition and Gravitational Waves
- 2023 DiRAC computing allocation, 10.44M core hours
Electroweak S -parameter from lattice strong dynamics
- 2022 DiRAC computing allocation, 24.04M core hours
Lattice studies of 3d super-Yang-Mills and holography
- 2021 DiRAC computing allocation, 20.78M core hours + 2.74M core-hour uplift
Electroweak phenomenology from lattice strong dynamics
- 2019 [USQCD](#) computing allocation, 2.25M core hours
Phases of a Higgs-Yukawa Theory and Symmetric Mass Generation
- 2017 USQCD computing allocation, 2.52M core hours
Exploring Improved Methods to Extract the 0^{++} Mass in an $SU(3)$ Gauge Theory with 8 Flavors

- 2017 USQCD computing allocation, 12.5M core hours
Thermodynamics of 3D Supersymmetric Yang–Mills
- 2017 USQCD computing allocation, 2.46M core hours
A new critical point in lattice four-fermion theories?
- 2016 XSEDE computing allocation, 4.11M core hours
Lattice studies of supersymmetric gauge theories
- 2016 USQCD computing allocation, 11.37M core hours
Lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills on the Coulomb branch
- 2015 USQCD computing allocation, 10.71M core hours
Anomalous dimensions from lattice $\mathcal{N} = 4$ super Yang–Mills with an improved action
- 2014 USQCD computing allocation, 11.04M core hours
Lattice $\mathcal{N} = 4$ supersymmetric Yang–Mills with 2, 3 and 4 colors
- 2013 Janus computing allocation, 4.8M core hours
Lattice studies of an infrared-conformal gauge theory
- 2013 USQCD computing allocation, 9.97M core hours
Eight-flavor $SU(3)$ gauge theory with nHYP-smearred fermions
- 2013 XSEDE computing allocation, 7.0M core hours
 $SU(3)$ gauge theories with many fermions — to the chiral limit
- 2012 Janus computing allocation, 5.5M core hours
Lattice studies of strongly-interacting gauge theories with many light fermions
- 2012 USQCD computing allocation, 4.84M core hours
Many flavor gauge theories: finite volume scaling at small masses
- 2011 XSEDE computing allocation, 2.5M core hours
Phase structure of $SU(3)$ gauge theory with many light fermions

Computing allocations as participating investigator

- 2021 USQCD computing allocation, 15M core hours
Composite Higgs model with four light and six heavy flavors
- 2020 USQCD computing allocation, 13.2M core hours
Composite Higgs model with four light and six heavy flavors
- 2020 USQCD computing allocation, 1.07M core hours
Decoupling doublers using generalized Yukawa interactions
- 2019 USQCD computing allocation, 8.75M core hours
Composite Higgs model with four light and six heavy flavors
- 2018 USQCD computing allocation, 12M core hours
Thermodynamics of SYM theory in three and four dimensions
- 2018 USQCD computing allocation, 29M core hours
Composite Higgs model with four light and six heavy flavors
- 2017 USQCD computing allocation, 12M core hours
Simulations of four light and six heavy flavors using smeared Möbius domain-wall fermions
- 2016 USQCD computing allocation, 9.51M core hours
Measuring the Low Energy Effective Theory in Multi-flavor QCD
- 2016 ASCR Leadership Computing Challenge allocation, 55M core hours
Exploring Higgs Compositeness Mechanism in the Era of the 14 TeV LHC
- 2015 USQCD computing allocation, 8.6M core hours
Non-Perturbative Collider Phenomenology of Stealth Dark Matter
- 2014 USQCD computing allocation, 13.33M core hours
Electromagnetic Polarizability of Bosonic Composite Dark Matter

- 2013 USQCD computing allocation, 29k GPU hours
 $\mathcal{N} = 4$ Super Yang-Mills on GPUs
- 2013 USQCD computing allocation, 9.71M core hours
Lattice study of $\mathcal{N} = 4$ Super Yang-Mills
- 2013 USQCD computing allocation, 9.35M core hours
Two-Color Gauge Theories in the Higgs Era
- 2013 Janus computing allocation, 1.6M core hours
Finite size scaling studies with twelve light fermions
- 2013 XSEDE computing allocation, 9.2M core hours
Many-Fermion Gauge Theories for TeV Physics
- 2012 USQCD computing allocation, 12.4M core hours
Extended study of many fermion gauge theories for TeV physics
- 2012 USQCD computing allocation, 86.3k GPU hours
Disconnected contributions to nucleon form factors with chiral fermions
- 2011 USQCD computing allocation, 12.08M core hours
Exploration of Many-Fermion Gauge Theories for TeV Physics
- 2010 USQCD computing allocation, 5M core hours
Two-Color Gauge Theories for TeV Physics
- 2009 USQCD computing allocation, 580k core hours
Strange quark contribution to nucleon form factors
- 2008 USQCD computing allocation, 488k core hours
QCD Vacuum Polarization Contribution to the S Parameter and $g-2$

Presentations

Invited talks

97. *Broader applications of lattice field theory*
DiRAC Science Day, Liverpool, 12 December 2023
96. *Numerical methods in lattice field theory beyond the standard model*
Workshop on Numerical Methods in Theoretical Physics,
Asia Pacific Center for Theoretical Physics, Pohang, 13 July 2023
95. *Lattice studies of three-dimensional super-Yang–Mills*
Program on Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory and Holography,
International Centre for Theoretical Sciences, Bengaluru, India, 29 August 2022 [recording]
94. *Numerical methods in lattice supersymmetry*
Workshop on Numerical Methods in Theoretical Physics,
Asia Pacific Center for Theoretical Physics, Pohang, 18 May 2022 [recording]
93. *Lattice strong dynamics for composite Higgs sectors*
University of Liverpool Theoretical Physics Seminar, 27 April 2022
92. *Composite dark matter and the role of lattice field theory*
Dublin Institute for Advanced Studies Theoretical Physics Seminar, 17 November 2021 [recording]
91. *Supersymmetric Yang–Mills theories on the lattice*
Imperial College London String Seminar, 27 October 2021
90. *Lattice studies of supersymmetric Yang–Mills in 2+1 dimensions*
Workshop on Relativistic Fermions in Flatland, ECT* Trento, 9 July 2021 [recording]
89. *Lattice strong dynamics for composite Higgs sectors*
Swansea University Theory Seminar, 11 June 2021
88. *Broader applications of lattice field theory*
UK Lattice Field Theory Virtual Centre kick-off event, 24 March 2021
87. *Progress and prospects of lattice supersymmetry*
Program on Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory and Holography,
International Centre for Theoretical Sciences, Bengaluru, 18 January 2021 [recording]
86. *Lattice studies of maximally supersymmetric Yang–Mills theories*
Perimeter Institute Quantum Fields & Strings Seminar, 10 January 2020
85. *Lattice field theory for composite dark matter*
University of Southampton High Energy Theory Seminar, 29 November 2019
84. *Maximally supersymmetric Yang–Mills on the lattice*
University of Southampton String Theory Seminar, 27 November 2019
83. *Supersymmetric lattice field theories: Classical simulations and quantum opportunities*
Workshop on High-energy Physics at Ultra-cold Temperatures, ECT* Trento, 12 June 2019
82. *Lattice studies of maximally supersymmetric Yang–Mills theories*
University of Liverpool Theoretical Physics Seminar, 28 November 2018
81. *Maximally supersymmetric Yang–Mills on the lattice*
Swansea University Theory Seminar, 23 November 2018
80. *Composite dark matter and the role of lattice field theory*
University of Stavanger Physics Seminar, 1 November 2018

79. *Lattice $\mathcal{N} = 4$ Supersymmetric Yang–Mills*
Workshop on Quantum Gravity meets Lattice QFT, ECT* Trento, 5 September 2018
78. *Progress and prospects of lattice supersymmetry*
36th International Symposium on Lattice Field Theory, Michigan State University, 24 July 2018
77. *Physics Out Of The Box: The Impact of Lattice Field Theory*
University of Liverpool, 5 July 2018
76. *Lattice studies of maximally supersymmetric Yang–Mills theories*
CERN Lattice Seminar, 7 June 2018
75. *Physics Out Of The Box: Frontiers of Lattice Field Theory*
Florida International University Colloquium, 9 March 2018
74. *Lattice $\mathcal{N} = 4$ Supersymmetric Yang–Mills*
Program on Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory and Holography, International Centre for Theoretical Sciences, Bengaluru, 31 January 2018 [recording]
73. *Maximally supersymmetric Yang–Mills on the lattice*
Workshop on Continuum and Lattice Approaches to the IR Behavior of (Quasi-)Conformal Gauge Theories, Simons Center for Geometry and Physics, Stony Brook, 11 January 2018 [recording]
72. *Lattice gauge theory at the electroweak scale*
Workshop on Strong Dynamics at the Electroweak Scale, University of Montpellier, 6 December 2017
71. *Lattice studies of maximally supersymmetric Yang–Mills theories*
Workshop on Strongly Interacting Field Theories, Friedrich Schiller University Jena, 25 November 2017
70. *Lattice gauge theory beyond the standard model*
20th International Conference From the Planck Scale to the Electroweak Scale, Warsaw, 22 May 2017
69. *Maximally supersymmetric Yang–Mills on the lattice*
University of Edinburgh Higgs Centre Particle Physics Theory Seminar, 23 November 2016
68. *Physics Out Of The Box: The impact of lattice gauge theory*
University of Glasgow, 18 April 2016
67. *Composite dark matter and the role of lattice field theory*
Rensselaer Polytechnic Institute Colloquium, 17 February 2016
66. *Maximally supersymmetric Yang–Mills on the lattice*
Friedrich Schiller University Jena Quantum Theory Seminar, 17 December 2015
65. *Electroweak Phenomenology and Lattice Strong Dynamics*
Humboldt / DESY Lattice Seminar, 23 November 2015
64. *$\mathcal{N} = 4$ supersymmetric Yang–Mills on a space-time lattice*
Humboldt University QFT / String Seminar, 18 November 2015
63. *Physics Out Of The Box: The impact of lattice gauge theory and advanced computing*
Stony Brook University Nuclear Theory Seminar, 13 November 2015
62. *Physics Out Of The Box: The impact of lattice gauge theory and large-scale computing*
Michigan State University High Energy Physics Seminar, 3 November 2015
61. *Lattice Gauge Theory for $N=4$ Super Yang–Mills*
Lattice Gauge Theory for the LHC and Beyond,
Kavli Institute for Theoretical Physics, Santa Barbara, 16 September 2015 [recording]
60. *Lattice gauge theory for composite Higgs*
23rd International Conference on Supersymmetry and Unification of Fundamental Interactions,
Lake Tahoe, CA, 28 August 2015

59. *Lattice supersymmetry in a nutshell*
Understanding Strongly Coupled Systems in High Energy and Condensed Matter Physics,
Aspen Center for Physics, 28 May 2015
58. *Lattice for Supersymmetric Physics*
Lattice for Beyond the Standard Model Physics, Lawrence Livermore National Laboratory, 24 April 2015
57. *Strong Dynamics and Lattice Gauge Theory: Going Beyond QCD*
Purdue High Energy Theory Seminar, 7 April 2015
56. *Maximally supersymmetric Yang–Mills on the lattice*
Origin of Mass and Strong Coupling Gauge Theories,
Kobayashi–Maskawa Institute, Nagoya University, 5 March 2015
55. *$\mathcal{N} = 4$ supersymmetric Yang–Mills on a space-time lattice*
Yale Particle Theory Seminar, 10 February 2015
54. *Status and prospects for supersymmetry on the lattice*
USQCD All Hands Meeting, Jefferson Lab, 19 April 2014
53. *Fun with the S parameter on the lattice*
Origin of Mass 2013 Lattice BSM Workshop, CP³-Origins, Odense, Denmark, 7 August 2013
52. *Exploring a new lattice phase*
Lattice Gauge Theory in the LHC Era, Aspen Center for Physics, 31 May 2013
51. *Going Beyond QCD on the Lattice*
Syracuse University High Energy Theory Seminar, 23 April 2013
50. *$SU(3)$ gauge theories with many massless fermions: methods and mysteries*
Lattice Meets Experiment: Beyond the Standard Model, University of Colorado, 27 October 2012
49. *The S Parameter on the Lattice*
Lattice Meets Experiment: Beyond the Standard Model, Fermilab, 15 October 2011
48. *Lattice QCD – and Beyond*
Boston University Center for Computational Science Seminar, 29 April 2011
47. *Electroweak Symmetry Breaking*
Amherst College Colloquium, 1 October 2009

Contributed talks

46. *Exploring lattice supersymmetry with variational quantum deflation*
40th International Symposium on Lattice Field Theory, Fermilab, 3 August 2023
45. *Quantum simulation for quantum field theories*
Northern Quantum Meeting VIII, University of York, 12 June 2023
44. *Exploring conformality in lattice $\mathcal{N} = 4$ super-Yang–Mills*
39th International Symposium on Lattice Field Theory, Bonn, 8 August 2022
43. *Thermal phase structure of dimensionally reduced super-Yang–Mills*
38th International Symposium on Lattice Field Theory, MIT, 29 July 2021 [recording]
42. *Stealth dark matter and gravitational waves*
37th International Symposium on Lattice Field Theory, Wuhan, 19 June 2019
41. *Lower-dimensional lattice supersymmetry*
University of Bern AEC Institute for Theoretical Physics lunch seminar, 22 March 2018
40. *Phases of a strongly coupled four-fermion theory*
35th International Symposium on Lattice Field Theory, Granada, 22 June 2017

39. *Light scalar from lattice strong dynamics*
637th Wilhelm und Else Heraeus-Seminar “Understanding the LHC”, Bad Honnef, 14 February 2017
38. *Lattice $\mathcal{N} = 4$ SYM*
University of Bern AEC Institute for Theoretical Physics lunch seminar, 13 October 2016
37. *Latest results from lattice $\mathcal{N} = 4$ super Yang–Mills*
34th International Symposium on Lattice Field Theory, Southampton, 26 July 2016
36. *$\mathcal{N} = 4$ super Yang–Mills on a space-time lattice*
23rd International Conference on Supersymmetry and Unification of Fundamental Interactions, Lake Tahoe, 25 August 2015
35. *New results from lattice $\mathcal{N} = 4$ super Yang–Mills*
33rd International Symposium on Lattice Field Theory, Kobe, 18 July 2015
34. *Results from lattice studies of maximally supersymmetric Yang–Mills*
32nd International Symposium on Lattice Field Theory, Columbia University, 25 June 2014
33. *Composite dark matter on the lattice: the effective Higgs interaction*
Syracuse University High Energy Theory Seminar, 24 March 2014
32. *From Lattice Strong Dynamics to Electroweak Phenomenology*
Syracuse University High Energy Theory Seminar, 4 November 2013
31. *Eight light flavors on large lattice volumes*
31st International Symposium on Lattice Field Theory, Mainz, 29 July 2013
30. *Lattice calculation of composite dark matter form factors*
APS April Meeting, Denver, 13 April 2013
29. $(g - 2)_\mu$ FAQ
University of Colorado, 20 September 2012
28. *Bulk and finite-temperature transitions in $SU(3)$ gauge theories with many light fermions*
30th International Symposium on Lattice Field Theory, Cairns, 25 June 2012
27. *Lattice Strong Dynamics: Turning it up to ten*
University of Colorado, 19 April 2012
26. *Novel phase in $SU(3)$ lattice gauge theories with many light fermions*
APS April Meeting, Atlanta, 1 April 2012
25. *Lattice Strong Dynamics for the LHC*
Conformality in Strong Coupling Gauge Theories at LHC and Lattice,
Kobayashi–Maskawa Institute, Nagoya University, 20 March 2012
24. *Lattice Strong Dynamics for the LHC: WW Scattering Parameters via Pseudoscalar Phase Shifts*
University of Colorado, 9 February 2012
23. *S parameter and parity doubling below the conformal window*
29th International Symposium on Lattice Field Theory, Lake Tahoe, 12 July 2011
22. *Measuring the S Parameter on the Lattice*
Boston University, 12 May 2011
21. *Monte Carlo Renormalization Group*
MIT Lattice Club, 30 March 2011
20. *Exploring the Origin of Mass with High-Performance Computing*
Boston University, 10 December 2010

19. *Lattice Strong Dynamics for Electroweak Symmetry Breaking*
MIT Lattice Club, 20 October 2010
18. *Flavor dependence of the S parameter in $SU(3)$ gauge theory*
XXVIII International Symposium on Lattice Field Theory, Villasimius, 17 June 2010
17. *Exploring Electroweak Symmetry Breaking on the Lattice*
Boston University, 13 October 2009
16. *Technicolor at the LHC*
Boston University LHC Physics Symposium, 30 April 2009
15. *Lattice Simulations of Nonperturbative Quantum Field Theories*
Amherst College, 2 May 2006
14. *Life on the Lattice: Markov Chain Monte Carlo and all that*
Amherst College, 29 November 2005
13. *Top Quark Physics at the LHC*
Five-College Physics Symposium, University of Massachusetts, 1 October 2005

Public engagement

12. *The Dark Side of the Universe*
Ignite Liverpool, 19 August 2019 [recording]

Posters

11. *Progress on New Frontiers of Lattice Field Theory*
UK Research and Innovation Future Leaders Fellowships Conference, remote, 13 October 2021
10. *Advancing New Frontiers of Lattice Field Theory*
UK Research and Innovation Future Leaders Fellowships Conference, remote, 14 October 2020
9. *New Frontiers of Lattice Field Theory*
UK Research and Innovation Future Leaders Cohort Event, London, 17 September 2019
8. *Thermal phase structure of a supersymmetric matrix model*
37th International Symposium on Lattice Field Theory, Wuhan, 18 June 2019
7. *Finite-temperature study of eight-flavor $SU(3)$ gauge theory*
Origin of Mass and Strong Coupling Gauge Theories,
Kobayashi–Maskawa Institute, Nagoya University, 3 March 2015
6. *Extremely supersymmetric lattice gauge theory*
eXtreme QCD Workshop on QCD under extreme conditions, Stony Brook University, 20 June 2014
5. *Numerical Simulations of $\mathcal{N} = 4$ Supersymmetric Yang–Mills*
Field Theoretic Computer Simulations for Particle Physics and Condensed Matter, Boston U., 8 May 2014
4. *Exploring the Origin of Mass with High-Performance Computing*
National Science Foundation EAPSI Project Exhibition, 19 August 2011
3. *Lattice Strong Dynamics: Using high-performance computing to explore the mystery of mass*
National Science Foundation IGERT Project Meeting, Washington DC, 24–25 May 2010
2. *Lattice Strong Dynamics: Using high-performance computing to explore electroweak symmetry breaking*
Boston University Science and Engineering Research Symposium, 30 March 2010
1. *Interdisciplinary Cluster Computing at a Liberal Arts College*
AAPT Topical Conference on Computational Physics for Upper Level Courses, Davidson Coll., 27–28 July 2007