David Simmons-Duffin
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Downs-Lauritsen Laboratory of Physics
California Institute of Technology
1200 East California Boulevard
Pasadena, CA 91125

Academic Positions

2021-present	California Institute of Technology	Professor of Physics
2020-2021	California Institute of Technology	Associate Professor of Physics
2017-2020	California Institute of Technology	Assistant Professor of Physics
2012-2017	Institute for Advanced Study	Member, School of Natural Sciences

Education

2012	Harvard University	Ph.D. in theoretical physics, advisor: Lisa Randall.
2007	Cambridge University	Certificate of Advanced Study in Mathematics, *with distinction*.
2006	Harvard University	A.B. in physics, *summa cum laude*; simultaneous A.M. in physics.

Awards and Honors

2023	Frontiers of Science Award, International Congress for Basic Science
2023	New Horizons in Physics Prize, Breakthrough Prize Foundation
2018-2023	DOE Early Career Award
2018-2020	Sloan Research Fellow
2018	Weyl Prize, International Colloquium on Group Theoretical Methods in Physics
2016-2023	Simons Collaboration on the Nonperturbative Bootstrap, Founding PI
2015	Martin and Beate Block Award, Aspen Center for Physics
2012	Forbes "30 Under 30: Rising Stars in Science"
2010	Graduate School of Arts and Sciences Merit Fellowship, Harvard
2009	Derek Bok Certificate of Distinction in Teaching, Harvard
2006-2007	Herchel Smith Harvard Fellowship to Emmanuel College Cambridge
2003	Detur Book Prize, Harvard
2003	John Harvard Scholar
2002	International Physics Olympiad team member

Publications

[1] A. Homrich, D. Simmons-Duffin, and P. Vieira, "Light-Ray Wave Functions and Integrability," `arXiv:2409.02160 [hep-th]`.

[2] N. Benjamin, J. Lee, S. Pal, D. Simmons-Duffin, and Y. Xu, "Angular fractals in thermal QFT," `arXiv:2405.17562 [hep-th]`.

[3] E. Gesteau, S. Pal, D. Simmons-Duffin, and Y. Xu, "Bounds on spectral gaps of Hyperbolic spin surfaces," `arXiv:2311.13330 [math.SP]`.

[4] C.-H. Chang, Y. Landau, and D. Simmons-Duffin, "Spinning dispersive CFT sum rules and bulk scattering," arXiv:2311.04271 [hep-th].

[5] A. Liu, D. Simmons-Duffin, N. Su, and B. C. van Rees, "Skydiving to Bootstrap Islands," arXiv:2307.13046 [hep-th].

[6] N. Benjamin, J. Lee, H. Ooguri, and D. Simmons-Duffin, "Universal asymptotics for high energy CFT data," *JHEP* **03** (2024) 115, arXiv:2306.08031 [hep-th].

[7] A. Homrich, D. Simmons-Duffin, and P. Vieira, "Complex Spin: The Missing Zeroes and Newton's Dark Magic," arXiv:2211.13754 [hep-th].

[8] R. S. Erramilli, L. V. Iliesiu, P. Kravchuk, A. Liu, D. Poland, and D. Simmons-Duffin, "The Gross-Neveu-Yukawa archipelago," *JHEP* **02** (2023) 036, arXiv:2210.02492 [hep-th].

[9] S. Caron-Huot, M. Kologlu, P. Kravchuk, D. Meltzer, and D. Simmons-Duffin, "Detectors in weakly-coupled field theories," *JHEP* **04** (2023) 014, arXiv:2209.00008 [hep-th].

[10] S. Caron-Huot, Y.-Z. Li, J. Parra-Martinez, and D. Simmons-Duffin, "Graviton partial waves and causality in higher dimensions," arXiv:2205.01495 [hep-th].

[11] J. d. F. Licht, C. A. Pattison, A. N. Ziogas, D. Simmons-Duffin, and T. Hoefler, "Fast Arbitrary Precision Floating Point on FPGA," 4, 2022. arXiv:2204.06256 [cs.DC].

[12] D. Poland and D. Simmons-Duffin, "Snowmass White Paper: The Numerical Conformal Bootstrap," in *Snowmass 2021*. 3, 2022. arXiv:2203.08117 [hep-th].

[13] T. Hartman, D. Mazac, D. Simmons-Duffin, and A. Zhiboedov, "Snowmass White Paper: The Analytic Conformal Bootstrap," in *Snowmass 2021*. 2, 2022. arXiv:2202.11012 [hep-th].

[14] C.-H. Chang and D. Simmons-Duffin, "Three-point energy correlators and the celestial block expansion," *JHEP* **02** (2023) 126, arXiv:2202.04090 [hep-th].

[15] S. Caron-Huot, Y.-Z. Li, J. Parra-Martinez, and D. Simmons-Duffin, "Causality constraints on corrections to Einstein gravity," *JHEP* **05** (2023) 122, arXiv:2201.06602 [hep-th].

[16] S. Caron-Huot, D. Mazac, L. Rastelli, and D. Simmons-Duffin, "AdS bulk locality from sharp CFT bounds," *JHEP* **11** (2021) 164, arXiv:2106.10274 [hep-th].

[17] M. Reehorst, S. Rychkov, D. Simmons-Duffin, B. Sirois, N. Su, and B. van Rees, "Navigator Function for the Conformal Bootstrap," *SciPost Phys.* **11** (2021) 072, arXiv:2104.09518 [hep-th].

[18] S. Caron-Huot, D. Mazac, L. Rastelli, and D. Simmons-Duffin, "Sharp Boundaries for the Swampland," *JHEP* **07** (2021) 110, arXiv:2102.08951 [hep-th].

[19] S. M. Chester, W. Landry, J. Liu, D. Poland, D. Simmons-Duffin, N. Su, and A. Vichi, "Bootstrapping Heisenberg magnets and their cubic instability," *Phys. Rev. D* **104** no. 10, (2021) 105013, arXiv:2011.14647 [hep-th].

[20] R. S. Erramilli, L. V. Iliesiu, P. Kravchuk, W. Landry, D. Poland, and D. Simmons-Duffin, "blocks_3d: software for general 3d conformal blocks," *JHEP* **11** (2021) 006, arXiv:2011.01959 [hep-th].

[21] C.-H. Chang, M. Kologlu, P. Kravchuk, D. Simmons-Duffin, and A. Zhiboedov, "Transverse spin in the light-ray OPE," arXiv:2010.04726 [hep-th].

[22] S. Caron-Huot, D. Mazac, L. Rastelli, and D. Simmons-Duffin, "Dispersive CFT Sum Rules," *JHEP* **05** (2021) 243, arXiv:2008.04931 [hep-th].

[23] J. Liu, D. Meltzer, D. Poland, and D. Simmons-Duffin, "The Lorentzian inversion formula and the spectrum of the 3d O(2) CFT," *JHEP* **09** (2020) 115, arXiv:2007.07914 [hep-th].

[24] A. L. Fitzpatrick, K.-W. Huang, D. Meltzer, E. Perlmutter, and D. Simmons-Duffin, "Model-dependence of minimal-twist OPEs in d $>$ 2 holographic CFTs," *JHEP* **11** (2020) 060, arXiv:2007.07382 [hep-th].

[25] S. M. Chester, W. Landry, J. Liu, D. Poland, D. Simmons-Duffin, N. Su, and A. Vichi, "Carving out OPE space and precise $O(2)$ model critical exponents," *JHEP* **06** (2020) 142, arXiv:1912.03324 [hep-th].

[26] W. Landry and D. Simmons-Duffin, "Scaling the semidefinite program solver SDPB," arXiv:1909.09745 [hep-th].

[27] M. Kologlu, P. Kravchuk, D. Simmons-Duffin, and A. Zhiboedov, "The light-ray OPE and conformal colliders," *JHEP* **01** (2021) 128, arXiv:1905.01311 [hep-th].

[28] M. Kologlu, P. Kravchuk, D. Simmons-Duffin, and A. Zhiboedov, "Shocks, Superconvergence, and a Stringy Equivalence Principle," *JHEP* **11** (2020) 096, arXiv:1904.05905 [hep-th].

[29] L. Iliesiu, M. Kololu, and D. Simmons-Duffin, "Bootstrapping the 3d Ising model at finite temperature," *JHEP* **12** (2019) 072, arXiv:1811.05451 [hep-th].

[30] D. Karateev, P. Kravchuk, and D. Simmons-Duffin, "Harmonic Analysis and Mean Field Theory," *JHEP* **10** (2019) 217, arXiv:1809.05111 [hep-th].

[31] J. Liu, E. Perlmutter, V. Rosenhaus, and D. Simmons-Duffin, "d-dimensional SYK, AdS Loops, and $6j$ Symbols," *JHEP* **03** (2019) 052, arXiv:1808.00612 [hep-th].

[32] P. Kravchuk and D. Simmons-Duffin, "Light-ray operators in conformal field theory," *JHEP* **11** (2018) 102, arXiv:1805.00098 [hep-th]. [,236(2018)].

[33] L. Iliesiu, M. Kologlu, R. Mahajan, E. Perlmutter, and D. Simmons-Duffin, "The Conformal Bootstrap at Finite Temperature," *JHEP* **10** (2018) 070, arXiv:1802.10266 [hep-th].

[34] D. Simmons-Duffin, D. Stanford, and E. Witten, "A spacetime derivation of the Lorentzian OPE inversion formula," *JHEP* **07** (2018) 085, arXiv:1711.03816 [hep-th].

[35] A. Dymarsky, F. Kos, P. Kravchuk, D. Poland, and D. Simmons-Duffin, "The 3d Stress-Tensor Bootstrap," *JHEP* **02** (2018) 164, arXiv:1708.05718 [hep-th].

[36] D. Karateev, P. Kravchuk, and D. Simmons-Duffin, "Weight Shifting Operators and Conformal Blocks," *JHEP* **02** (2018) 081, arXiv:1706.07813 [hep-th].

[37] L. Iliesiu, F. Kos, D. Poland, S. S. Pufu, and D. Simmons-Duffin, "Bootstrapping 3D Fermions with Global Symmetries," *JHEP* **01** (2018) 036, arXiv:1705.03484 [hep-th].

[38] P. Kravchuk and D. Simmons-Duffin, "Counting Conformal Correlators," *JHEP* **02** (2018) 096, arXiv:1612.08987 [hep-th].

[39] D. Simmons-Duffin, "The Lightcone Bootstrap and the Spectrum of the 3d Ising CFT," *JHEP* **03** (2017) 086, arXiv:1612.08471 [hep-th].

[40] S. Rychkov, D. Simmons-Duffin, and B. Zan, "Non-gaussianity of the critical 3d Ising model," *SciPost Phys.* **2** no. 1, (2017) 001, arXiv:1612.02436 [hep-th].

[41] D. Poland and D. Simmons-Duffin, "The conformal bootstrap," *Nature Phys.* **12** no. 6, (2016) 535–539.

[42] Z. Komargodski and D. Simmons-Duffin, "The Random-Bond Ising Model in 2.01 and 3 Dimensions," *J. Phys.* **A50** no. 15, (2017) 154001, arXiv:1603.04444 [hep-th].

[43] F. Kos, D. Poland, D. Simmons-Duffin, and A. Vichi, "Precision islands in the Ising and $O(N)$ models," *JHEP* **08** (2016) 036, arXiv:1603.04436 [hep-th].

[44] D. Simmons-Duffin, "The Conformal Bootstrap," in *Proceedings, Theoretical Advanced Study Institute in Elementary Particle Physics: New Frontiers in Fields and Strings (TASI 2015): Boulder, CO, USA, June 1-26, 2015*, pp. 1–74. 2017. arXiv:1602.07982 [hep-th]. http://inspirehep.net/record/1424282/files/arXiv:1602.07982.pdf.

[45] Y.-H. Lin, S.-H. Shao, D. Simmons-Duffin, Y. Wang, and X. Yin, "$\mathcal{N} = 4$ superconformal bootstrap of the K3 CFT," *JHEP* **05** (2017) 126, arXiv:1511.04065 [hep-th].

[46] L. Iliesiu, F. Kos, D. Poland, S. S. Pufu, D. Simmons-Duffin, and R. Yacoby, "Fermion-Scalar Conformal Blocks," *JHEP* **04** (2016) 074, arXiv:1511.01497 [hep-th].

[47] J. Maldacena, D. Simmons-Duffin, and A. Zhiboedov, "Looking for a bulk point," *JHEP* **01** (2017) 013, arXiv:1509.03612 [hep-th].

[48] L. Iliesiu, F. Kos, D. Poland, S. S. Pufu, D. Simmons-Duffin, and R. Yacoby, "Bootstrapping 3D Fermions," *JHEP* **03** (2016) 120, arXiv:1508.00012 [hep-th].

[49] F. Kos, D. Poland, D. Simmons-Duffin, and A. Vichi, "Bootstrapping the O(N) Archipelago," *JHEP* **11** (2015) 106, arXiv:1504.07997 [hep-th].

[50] D. Simmons-Duffin, "A Semidefinite Program Solver for the Conformal Bootstrap," *JHEP* **06** (2015) 174, arXiv:1502.02033 [hep-th].

[51] F. Kos, D. Poland, and D. Simmons-Duffin, "Bootstrapping Mixed Correlators in the 3D Ising Model," *JHEP* **11** (2014) 109, arXiv:1406.4858 [hep-th].

[52] Z. U. Khandker, D. Li, D. Poland, and D. Simmons-Duffin, "$\mathcal{N} = 1$ superconformal blocks for general scalar operators," *JHEP* **08** (2014) 049, arXiv:1404.5300 [hep-th].

[53] S. El-Showk, M. F. Paulos, D. Poland, S. Rychkov, D. Simmons-Duffin, and A. Vichi, "Solving the 3d Ising Model with the Conformal Bootstrap II. c-Minimization and Precise Critical Exponents," *J. Stat. Phys.* **157** (2014) 869, arXiv:1403.4545 [hep-th].

[54] A. L. Fitzpatrick, J. Kaplan, Z. U. Khandker, D. Li, D. Poland, and D. Simmons-Duffin, "Covariant Approaches to Superconformal Blocks," *JHEP* **08** (2014) 129, arXiv:1402.1167 [hep-th].

[55] S. El-Showk, M. Paulos, D. Poland, S. Rychkov, D. Simmons-Duffin, and A. Vichi, "Conformal Field Theories in Fractional Dimensions," *Phys. Rev. Lett.* **112** (2014) 141601, arXiv:1309.5089 [hep-th].

[56] F. Kos, D. Poland, and D. Simmons-Duffin, "Bootstrapping the $O(N)$ vector models," *JHEP* **06** (2014) 091, arXiv:1307.6856 [hep-th].

[57] A. L. Fitzpatrick, J. Kaplan, D. Poland, and D. Simmons-Duffin, "The Analytic Bootstrap and AdS Superhorizon Locality," *JHEP* **12** (2013) 004, arXiv:1212.3616 [hep-th].

[58] D. Simmons-Duffin, "Projectors, Shadows, and Conformal Blocks," *JHEP* **04** (2014) 146, arXiv:1204.3894 [hep-th].

[59] S. El-Showk, M. F. Paulos, D. Poland, S. Rychkov, D. Simmons-Duffin, and A. Vichi, "Solving the 3D Ising Model with the Conformal Bootstrap," *Phys. Rev.* **D86** (2012) 025022, arXiv:1203.6064 [hep-th].

[60] Y.-T. Chien, M. D. Schwartz, D. Simmons-Duffin, and I. W. Stewart, "Jet Physics from Static Charges in AdS," *Phys. Rev.* **D85** (2012) 045010, arXiv:1109.6010 [hep-th].

[61] D. Poland, D. Simmons-Duffin, and A. Vichi, "Carving Out the Space of 4D CFTs," *JHEP* **05** (2012) 110, arXiv:1109.5176 [hep-th].

[62] D. Poland and D. Simmons-Duffin, "$\mathcal{N} = 1$ SQCD and the Transverse Field Ising Model," *JHEP* **02** (2012) 009, arXiv:1104.1425 [hep-th].

[63] D. Poland and D. Simmons-Duffin, "Bounds on 4D Conformal and Superconformal Field Theories," *JHEP* **05** (2011) 017, arXiv:1009.2087 [hep-th].

[64] A. L. Fitzpatrick, E. Katz, D. Poland, and D. Simmons-Duffin, "Effective Conformal Theory and the Flat-Space Limit of AdS," *JHEP* **07** (2011) 023, arXiv:1007.2412 [hep-th].

[65] D. Poland and D. Simmons-Duffin, "Superconformal Flavor Simplified," *JHEP* **05** (2010) 079, arXiv:0910.4585 [hep-ph].

[66] L. Randall and D. Simmons-Duffin, "Quark and Lepton Flavor Physics from F-Theory," arXiv:0904.1584 [hep-ph].

[67] C. J. Copi, L. M. Krauss, D. Simmons-Duffin, and S. R. Stroiney, "Assessing alternatives for directional detection of a wimp halo," *Phys. Rev.* **D75** (2007) 023514, arXiv:astro-ph/0508649 [astro-ph].

Colloquia and Plenary Talks

Strings 2024 Conference, plenary talk	CERN	Jun 2024
Gravity from Modern Algebra Conference, plenary talk	KITP	Jan 2023
Snowmass Theory Frontier Conference	KITP	Feb 2022
CERN Physics Colloquium	virtual	Feb 2022
Division Seminar	Caltech	May 2021
Sphere Packing/Bootstrap Conference, plenary talk	virtual	Dec 2020
Amplitudes 2020 Conference, plenary talk	virtual	May 2020
Geometry from Quantum Conference, plenary talk	KITP	Jan 2020
SITP Theory Colloquium	Stanford	Feb 2019
Physics Colloquium	UCLA	Jan 2019
Polchinski Science Symposium, plenary talk	KITP	Dec 2018
Order from Chaos Conference, plenary talk	KITP	Dec 2018
Strings 2018 Conference, plenary talk	Okinawa, Japan	Jun 2018
Amplitudes 2018 Conference, plenary talk	SLAC	Jun 2018
Division Seminar	Caltech	Jan 2018
Physics Colloquium	University of Washington	Oct 2017
Physics Colloquium	Washington University	Oct 2017
Physics Colloquium	UC Riverside	Oct 2017
Physics Colloquium	Perimeter Institute	Jan 2017
Physics Colloquium	SUNY Stony Brook	Feb 2016
Physics Colloquium	CWRU	Sep 2015
SUSY 2015 Conference, plenary talk	Lake Tahoe, CA	Aug 2015
LPTENS 40th Anniversary, invited talk	Paris, France	Jan 2015
Strings 2014 Conference, plenary talk	Princeton	Jun 2014
QFT Beyond Perturbation Theory, plenary talk	KITP	Jan 2014
Integrability in Gauge/String Theories, plenary talk	Perimeter Institute	Aug 2011

Seminars and Workshops

Simons Bootstrap Collaboration Workshop	Nov 2023
SoCal Strings Meeting Seminar	Mar 2023
McGill Theory Group Meeting	Mar 2023
Bootstrap 2022 Workshop	July 2022
Southampton String Theory Seminar	Mar 2022
QCD Meets Gravity Workshop	Dec 2021
Bootstrap 2021 Workshop	July 2021
APS April Meeting	Apr 2021
UCSB High Energy and Gravity Seminar	Apr 2021
Bay Area Particle Theory Seminar	Mar 2021
BIMSA Geometry & Physics Seminar	Mar 2021
State of the Quantum Universe Workshop	Nov 2020
Bootstrap 2020 Workshop	Jun 2020
Harvard Duality Seminar	Mar 2020
SCGP Workshop	Nov 2019
UC Davis Theory Seminar	Sep 2019
Bootstrap 2019 Workshop	Aug 2019
PCTS Workshop: CFT Perspectives on Chaos and Thermalization	Mar 2019

Berkeley String Seminar	Mar 2019
Chaos and Order Workshop (KITP)	Dec 2018
Simons Bootstrap Collaboration Workshop	Nov 2018
UCSD Theory Seminar	Sep 2018
Physics and Mathematics of QFT Workshop (BIRS)	Jul 2018
Analytic Bootstrap Workshop (Azores)	May 2018
Harvard Duality Seminar	Mar 2018
SoCal Strings Meeting Seminar	Dec 2017
Simons Collaboration on the Nonperturbative Bootstrap Meeting	Nov 2017
UBC Theory Seminar	Nov 2017
USC Theory Seminar	Oct 2017
PCTS Workshop: New Developments in CFT Above 2 Dimensions	Mar 2017
Tokyo IPMU Seminar	Jan 2017
Rikkyo University Seminar	Jan 2017
Yale Bootstrap Workshop	Oct 2016
McGill Theory Seminar	Mar 2016
Michigan String Theory Workshop	Mar 2016
NYU Theory Seminar	Dec 2015
CERN Theory Seminar	Nov 2015
Caltech Theory Seminar	Oct 2015
KITP High Energy and Gravity Seminar	Oct 2015
Berkeley String Seminar	Oct 2015
Stanford Institute for Theoretical Physics Seminar	Oct 2015
UT Austin Geometry and String Theory Seminar	Sep 2015
UT Austin Theory Group Seminar	Sep 2015
From Scattering Amplitudes to the Conformal Bootstrap (Aspen)	Jul 2015
Back to the Bootstrap IV Workshop Weizmann Institute	May 2015
CUNY Theory Seminar	May 2015
Aspen: Progress and Applications of Modern Quantum Field Theory	Feb 2015
MIT Center for Theoretical Physics Particle Seminar	Feb 2015
UC Davis Math/Physics Seminar	Jan 2015
University of Chicago Theory Seminar	Jan 2015
ICTP-SAIFR (Sao Paulo, Brasil) Theory Seminar	Nov 2014
PCTS Workshop: Higher Spin Symmetries and the Conformal Bootstrap	Nov 2014
UNC/Duke Joint Theory Seminar	Oct 2014
Harvard Duality Seminar	Sep 2014
BIRS (Banff, Canada) Workshop: Integrability in Holography	Jun 2014
Caltech Theory Seminar	May 2014
University of Chicago Theory Seminar	Apr 2014
UIUC Theory Seminar	Apr 2014
Boston University Particle and Fields Seminar	Apr 2014
MIT Center for Theoretical Physics Particle Seminar	Apr 2014
KITP Workshop: New Methods in Nonperturbative Quantum Field Theory	Feb 2014
Perimeter Institute String Seminar	Oct 2013
Johns Hopkins Theory Seminar	Oct 2013
DPF Conference, Santa Cruz	Aug 2013
Back to the Bootstrap III Workshop, CERN	Jun 2013
SLAC Theory Seminar	Apr 2013
Rutgers High Energy Theory Seminar	Feb 2013

Yale High Energy Theory Seminar	Feb 2013
Stony Brook High Energy Theory Seminar	Feb 2013
Michigan High Energy Theory Seminar	Nov 2012
University of Cincinnati High Energy Theory Seminar	Nov 2012
University of Kentucky High Energy Theory Seminar	Nov 2012
Back to the Bootstrap II Workshop, Perimeter Institute	Jun 2012
Brown High Energy Theory Seminar	Apr 2012
Berkeley Particle Theory Seminar	Dec 2011
Case Western Reserve Particle/Astrophysics Seminar	Oct 2011
Lattice Meets Experiment Conference, Fermilab	Oct 2011
IAS High Energy Theory Seminar	Oct 2011
Rutgers High Energy Theory Seminar	May 2011
Boston University Joint Theory Seminar	Apr 2011
Cornell Particle Theory Seminar	Jan 2011
Princeton-IAS Joint Theory Seminar	Oct 2010

Teaching

Caltech

Physics 12c: Statistical Mechanics, spring 2019, spring 2020, spring 2024.

Physics 121ab: Computational Physics Lab, fall/winter 2018-2019, fall/winter 2019-2020, fall/winter 2020-2021, fall/winter 2021-2022, winter 2023.

Physics 229ab: Advanced Mathematical Methods, winter/spring 2017-2018.

Physics 230a: Effective Field Theory and the Standard Model, fall 2022, fall 2023.

Harvard

Teaching Fellow (TF) for Physics 15b: Introductory Electromagnetism, fall 2003, fall 2011.

TF for Physics 253c: Quantum Field Theory III, fall 2009.

TF for Physics 253a: Quantum Field Theory I, fall 2008.

TF for Physics 15a: Introductory Mechanics and Relativity, fall 2005.

Schools and Workshops

Lecturer, TASI 2023: Aspects of Symmetry, UC Boulder, June 2023.

Lecturer, TASI 2019: The Many Dimensions of Quantum Field Theory, UC Boulder, June 2019.

Lecturer, Cern Winter School, March 2019.

Lecturer, Bootstrap School 2018, Caltech, July 2018.

Lecturer, Strings School 2017, Tel Aviv Israel, June 2017.

Lecturer, Strings School 2015, Bangalore India, June 2015.

Lecturer, TASI 2015: New Frontiers in Fields and Strings, UC Boulder, June 2015.

Lecturer, Mathematica School in Theoretical Physics at ICTP, Trieste Italy, March 2013.

Advising and Mentoring

Graduate student advisees

Petr Kravchuk (graduated 2018, unofficial co-advisee with Hirosi Ooguri)

Murat Kologlu (graduated 2019)

Junyu Liu (graduated 2021, co-advisee with Cliff Cheung and John Preskill)

Cyuan-Han Chang (graduated 2024)

Alexandre Homrich (graduated 2024, co-advisee with Pedro Vieira)

Aike Liu (graduated 2024)

Yanky Landau (current)

Yixin Xu (current)

Postdoctoral scholars

Ying-Hsuan Lin (2016-2020)

Eric Perlmutter (2017-2020)

David Meltzer (2018-2021)

Julio Parra-Martinez (2020-2023)

Nathan Benjamin (2021-)

Yuya Kusuki (2021-)

Sridip Pal (2022-)

Ning Su (2023-)

Other Activities

Organizer, Hirosifest, Caltech, October 2022.

Organizer, Aspen Workshop: Bootstrapping String Theory, August 2021.

Organizer, Burke Institute and Bootstrap Collaboration Workshop (virtual): Bootstrapping String Theory, May 2020.

Organizer, Numerical bootstrap workshop, Stony Brook, November 2019.

Organizer, Aspen Workshop: Scattering Amplitudes and the Conformal Bootstrap, August 2019.

Organizer, Bootstrap 2018 Conference, Caltech, July 2018.

Organizer, PCTS Workshop: New Developments in CFT Above 2 Dimensions, March 2017.

Referee for physics journals: JHEP, Phys. Rev. Lett., Phys. Rev. D.,
J. Phys. A: Math. Theor.

Skills and Interests

- Computation:
  - Programming Languages: C/C++, Haskell, Mathematica, Python.
  - High performance computing and large-scale optimization
- Music:
  - Choral singing. *Professional:* Apollo's Fire, Quire Cleveland, Blue Heron. *Amateur:* Harvard-Radcliffe Collegium Musicum, Harvard University Choir, Choir of Clare College Cambridge.
  - Baroque violin.