JiJi Fan — Curriculum Vitae

Brown University
Physics Department
Providence, RI, 02912
USA

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Education

Ph. D., Physics, December 2009
Yale University
Advisor: Witold Skiba
Thesis: Symmetries in particle physics beyond the Standard Model: supersymmetry, conformal symmetry and accidental Lorentz symmetry

B. S., Physics, June 2004
University of Science and Technology of China

Appointments

Associate Professor, Physics Department Brown University	July, 2021 –
Assistant Professor, Physics Department Brown University	July, 2015 – Jun., 2021
Assistant Professor, Physics Department Syracuse University	Sep., 2013 – Jun., 2015
Postdoctoral Researcher, Theoretical particle physics Harvard University	Sep., 2012 – Aug., 2013
Postdoctoral Researcher, Theoretical particle physics Princeton University	Sep., 2009 – Aug., 2012

Publications

In the theoretical high energy community, the author list is usually **alphabetical**. All my papers, with a few exceptions, follow the rule of alphabetical author ordering. For all my publications and preprints since I became a professor in Sep. 2013, I mark the undergraduate student collaborators red, graduate student collaborators blue and postdocs orange. The status of a collaborator is determined by that when he/she participated in the project. My Inspire author identifier is JiJi.Fan.1 (click it to go to my Inspire page for the most updated paper list and citation counts). One could also click on the journals and arxiv numbers in the list below to go to the corresponding webpages. The publications are ordered by their publication dates (instead of arxiv preprint dates), from the latest to the earliest.

JHEP = Journal of High Energy Physics; **JCAP** = Journal of Cosmology and Astroparticle

Physics; **Phys. Rev. Lett.** = Physical Review Letters; **Phys. Rev. D** = Physical Review D, Particles, Fields, Gravitation, and Cosmology; **Phys. Dark Univ.** = Physics of the Dark Universe; **Phys. Lett. B** = Physics Letters B, Nuclear Physics and Particle Physics

1. **"Pulse and Polarization Structures in Axion-Converted X-rays from Pulsars,"**
   J. Fan, L. Li, and C. Sun,
   Phys. Rev. Lett. **135**, no.23, 231801 (2025), [arXiv:2501.12440 [hep-ph]].
2. **"Reionization and the Hubble constant: correlations in the Cosmic Microwave Background,"**
   I. J. Allali, P. Singh, J. Fan and L. Li,
   JCAP **08**, 082 (2025), [arXiv:2503.05691 [astro-ph.CO]].
3. **"The Juno mission as a probe of long-range new physics,"**
   P. Singh, S. Yan, I. J. Allali, J. Fan and L. Li,
   JHEP **01**, 098 (2025), [arXiv:2409.10616 [hep-ph]].
4. **"Phenomenology of spillway preheating: Equation of state and gravitational waves,"**
   G. Mansfield, J. Fan, and Q. Lu,
   Phys. Rev. D **110**, no.2, 023542 (2024), [arXiv:2312.03072 [astro-ph.CO]].
5. **"Constraints on photon mass and dark photon from the Jovian magnetic field,"**
   S. Yan, L. Li , and J. Fan,
   JHEP **06**, 028 (2024), [arXiv:2312.06746 [hep-ph]].
6. **"Probing New Physics with High-Redshift Quasars: Axions and Non-standard Cosmology,"**
   C. Sun, M. A. Buen-Abad and J. Fan,
   JCAP **06**, 037 (2024), [arXiv:2309.07212 [astro-ph.CO]].
7. **"New inflationary probes of axion dark matter,"**
   X. Chen, J. Fan and L. Li,
   JHEP **12**, 197 (2023), [arXiv:2303.03406 [hep-ph]].
8. **"Opening up Window of Post-inflationary QCD Axion,"**
   Y. Bao, J. Fan and L. Li,
   Phys. Rev. Lett. **130**, no.24, 241001 (2023), [arXiv:2209.09908 [hep-ph]].
9. **"The H_0 and S_8 Tensions Necessitate Early and Late Time Changes to ΛCDM,"**
   S. J. Clark, K. Vattis, J. Fan and S. M. Koushiappas,
   Phys. Rev. D **107**, no.8, 083527 (2023), [arXiv:2110.09562 [astro-ph.CO]].
10. **"Jupiter Missions as Probes of Dark Matter, "**
    L. Li and J. Fan,
    JHEP **10**, 186 (2022), [arXiv:2207.13709 [hep-ph]].
11. **"W-Boson Mass, Electroweak Precision Tests and SMEFT,"**
    J. Fan, L. Li, T. Liu and K. F. Lyu,
    Phys. Rev. D **106**, no.7, 073010 (2022), [arXiv:2204.04805 [hep-ph]].

12. **"Axion Echos from the Supernova Graveyard,"**
M. A. Buen-Abad, J. Fan and C. Sun,
Phys. Rev. D **105**, no.7, 075006 (2022), [arXiv:2110.13916 [hep-ph]].
13. **"Electroweak ALP Searches at a Muon Collider,"**
Y. Bao, J. Fan and L. Li,
JHEP **08**, 276 (2022), [arXiv:2203.04328 [hep-ph]].
14. **"Constraints on Axions from Cosmic Distance Measurements,"**
M. A. Buen-Abad, J. Fan and C. Sun,
JHEP **02**, 103 (2022), [arXiv:2011.05993 [hep-ph]].
15. **"The muon Smasher's guide,"**
H. Al Ali, *et al.*,
Rept. Prog. Phys. **85**, no.8, 084201 (2022) [arXiv:2103.14043 [hep-ph]].
16. **"Axion Mass from Magnetic Monopole Loops,"**
J. Fan, K. Fraser, M. Reece and J. Stout,
Phys. Rev. Lett. **127**, no.13, 131602 (2021), [arXiv:2105.09950[hep-ph]].
17. **"Challenges for an Axion Explanation of the Muon $g-2$ Measurement,"**
M. A. Buen-Abad, J. Fan, M. Reece and C. Sun,
JHEP **09**, 101 (2021), [arXiv:2104.03267 [hep-ph]].
18. **"Spillway Preheating,"**
J. Fan, K. D. Lozanov and Q. Lu,
JHEP **05**, 069 (2021), [arXiv:2101.11008 [hep-ph]].
19. **"Randomness-Assisted Exponential Hierarchies,"**
A. Tropper and J. Fan,
Phys. Rev. D **103**, no.1, 015001 (2021) [arXiv:2001.07221 [hep-ph]].
20. **"A Cosmic Microscope for the Preheating Era,"**
J. Fan and Z. Z. Xianyu,
JHEP **01**, 021 (2021) [arXiv:2005.12278 [hep-ph]].
21. **"Dark Matter Substructure under the Electron Scattering Lamppost,"**
J. Buch, M. A. Buen-Abad, J. Fan and S. C. Leung,
Phys. Rev. D **102**, no.8, 083010 (2020) [arXiv:2007.13750 [hep-ph]].
22. **"Galactic Origin of Relativistic Bosons and XENON1T Excess,"**
J. Buch, M. A. Buen-Abad, J. Fan and S. C. Leung,
JCAP **10**, 051 (2020) [arXiv:2006.12488 [hep-ph]].
23. **"Implications of the Gaia Sausage for Dark Matter Nuclear Interactions,"**
J. Buch, J. Fan and S. C. Leung,
Phys. Rev. D **101**, 063026 (2020) [arXiv:1910.06356 [hep-ph]].
24. **"An Inflationary Probe of Cosmic Higgs Switching,"**
J. Fan, M. Reece and Y. Wang,
JHEP **05**, 042 (2020) [arXiv:1905.05764 [hep-th]].

25. **"Dynamical Axion Misalignment with Small Instantons,"**
M. A. Buen-Abad and J. Fan,
JHEP **1912**, 161 (2019) [arXiv:1911.05737 [hep-ph]].

26. **"Using *Gaia* Data 2 to Constrain Local Dark Matter Density and Thin Dark Disk,"**
J. Buch, S. C. Leung and J. Fan,
JCAP **2019**, 026 (2019) [arXiv:1808.05603 [astro-ph.GA]].

27. **"Boson Star from Repulsive Light Scalars and Gravitational Waves,"**
D. Croon, J. Fan and C. Sun,
JCAP **1904**, 008 (2019) [arXiv:1810.01420 [hep-ph]].

28. **"Higgscitement: Cosmological Dynamics of Fine Tuning,"**
M. A. Amin, J. Fan, K. D. Lozanov and M. Reece,
Phys. Rev. D **99**, 035008 (2019) [arXiv:1802.00444 [hep-ph]].

29. **"Clockwork Axions in Cosmology: is chromonatural inflation chrononatural?,"**
P. Agrawal, J. Fan and M. Reece,
JHEP **1810**, 193 (2018) [arXiv:1806.09621 [hep-th]].

30. **"Experimental Targets for Photon Couplings of the QCD Axion,"**
P. Agrawal, J. Fan, M. Reece and L. T. Wang,
JHEP **1802**, 006 (2018) [arXiv:1709.06085 [hep-ph]].

31. **"Cooling in a Dissipative Dark Sector,"**
E. Rosenberg and J. Fan,
Phys. Rev. D **96**, 123001 (2017) [arXiv:1705.10341 [astro-ph.GA]].

32. **"Jet Observables and Stops at 100 TeV Collider,"**
J. Fan, P. Jaiswal and S. C. Leung,
Phys. Rev. D **96**, 036017 (2017) [arXiv:1704.03014 [hep-ph]].

33. **"Deciphering the MSSM Higgs Mass at Future Hadron Colliders,"**
P. Agrawal, J. Fan, M. Reece and W. Xue,
JHEP **1706**, 027 (2017) [arXiv:1702.05484 [hep-ph]].

34. **"Ultralight Repulsive Dark Matter and BEC,"**
J. Fan,
Phys. Dark Univ. **14**, 84 (2016) [arXiv:1603.06580 [hep-ph]].

35. **"Stealth Supersymmetry Simplified,"**
J. Fan, R. Krall, D. Pinner, M. Reece and J. T. Ruderman,
JHEP **1607**, 016 (2016) [arXiv:1512.05781 [hep-ph]].

36. **"Experimental Considerations Motivated by the Diphoton Excess at the LHC,"**
P. Agrawal, J. Fan, B. Heidenreich, M. Reece and M. Strassler,
JHEP **1606**, 082 (2016) [arXiv:1512.05775 [hep-ph]].

37. **"Pseudoscalar Portal Dark Matter and New Signatures of Vector-like Fermions,"**
J. Fan, S. M. Koushiappas and G. Landsberg,
JHEP **1601**, 111 (2016) [arXiv:1507.06993 [hep-ph]].

38. **"Possible Futures of Electroweak Precision: ILC, FCC-ee, and CEPC,"**
J. Fan, M. Reece and L. T. Wang,
JHEP **1509**, 196 (2015) [arXiv:1411.1054 [hep-ph]].

39. **"Precision Natural SUSY at CEPC, FCC-ee, and ILC,"**
J. Fan, M. Reece and L. T. Wang,
JHEP **1508**, 152 (2015) [arXiv:1412.3107 [hep-ph]].

40. **"Vacuum Instability Bounds on Higgs Coupling Deviations in the Absence of New Bosons,"**
K. Blum, R. T. D'Agnolo and J. Fan,
JHEP **1503**, 166 (2015) [arXiv:1502.01045 [hep-ph]].

41. **"Non-thermal Histories and Implications for Structure Formation,"**
J. Fan, O. Ozsoy and S. Watson,
Phys. Rev. D **90**, 043536 (2014) [arXiv:1405.7373 [hep-ph]].

42. **"Heavy Gravitino and Split SUSY in the Light of BICEP2,"**
J. Fan, B. Jain and O. Ozsoy,
JHEP **1407**, 073 (2014) [arXiv:1404.1914 [hep-ph]].

43. **"A New Look at Higgs Constraints on Stops,"**
J. Fan and M. Reece,
JHEP **1406**, 031 (2014) [arXiv:1401.7671 [hep-ph]].

44. **"Direct and Indirect Detection of Dissipative Dark Matter,"**
J. Fan, A. Katz and J. Shelton,
JCAP **1406**, 059 (2014) [arXiv:1312.1336 [hep-ph]].

45. **"In Wino Veritas? Indirect Searches Shed Light on Neutralino Dark Matter,"**
J. Fan and M. Reece,
JHEP **1310**, 124 (2013) [arXiv:1307.4400 [hep-ph]].

46. **"A Dark-Disk Universe,"**
J. Fan, A. Katz, L. Randall and M. Reece,
Phys. Rev. Lett. **110**, 211302 (2013) [arXiv:1303.3271 [hep-ph]].

47. **"Double-Disk Dark Matter,"**
J. Fan, A. Katz, L. Randall and M. Reece,
Phys. Dark Univ. **2**, 139 (2013) [arXiv:1303.1521 [astro-ph.CO]].

48. **"Probing Charged Matter Through Higgs Diphoton Decay, Gamma Ray Lines, and EDMs,"**
J. Fan and M. Reece,
JHEP **1306**, 004 (2013) [arXiv:1301.2597 [hep-ph]].

49. **"A Simple Recipe for the 111 and 128 GeV Lines,"**
J. Fan and M. Reece,
Phys. Rev. D **88**, 035014 (2013) [arXiv:1209.1097 [hep-ph]].

50. **"2:1 for Naturalness at the LHC?,"**
N. Arkani-Hamed, K. Blum, R. T. D'Agnolo and J. Fan,
JHEP **1301**, 149 (2013) [arXiv:1207.4482 [hep-ph]].

51. **"Natural SUSY Predicts: Higgs Couplings,"**
K. Blum, R. T. D'Agnolo and J. Fan,
JHEP **1301**, 057 (2013) [arXiv:1206.5303 [hep-ph]].

52. **"Hiding a Heavy Higgs Boson at the 7 TeV LHC,"**
Y. Bai, J. Fan and J. L. Hewett,
JHEP **1208**, 014 (2012) [arXiv:1112.1964 [hep-ph]].

53. **"A Stealth Supersymmetry Sampler,"**
J. Fan, M. Reece and J. T. Ruderman,
JHEP **1207**, 196 (2012) [arXiv:1201.4875 [hep-ph]].

54. **"Light Sterile Neutrinos and Short Baseline Neutrino Oscillation Anomalies,"**
J. Fan and P. Langacker,
JHEP **1204**, 083 (2012) [arXiv:1201.6662 [hep-ph]].

55. **"Stealth Supersymmetry,"**
J. Fan, M. Reece and J. T. Ruderman,
JHEP **1111**, 012 (2011) [arXiv:1105.5135 [hep-ph]].

56. **"Effective AdS/Renormalized CFT,"**
J. Fan,
JHEP **1109**, 136 (2011) [arXiv:1105.0678 [hep-th]].

57. **"Mitigating Moduli Messes in Low-Scale SUSY Breaking,"**
J. Fan, M. Reece and L. T. Wang,
JHEP **1109**, 126 (2011) [arXiv:1106.6044 [hep-ph]].

58. **"A Higgsophilic s-channel Z' and the CDF W+2J Anomaly,"**
J. Fan, D. Krohn, P. Langacker and I. Yavin,
Phys. Rev. D **84**, 105012 (2011) [arXiv:1106.1682 [hep-ph]].

59. **"Heavy Squarks at the LHC,"**
J. Fan, D. Krohn, P. Mosteiro, A. M. Thalapillil and L. T. Wang,
JHEP **1103**, 077 (2011) [arXiv:1102.0302 [hep-ph]].

60. **"Non-relativistic Effective Theory of Dark Matter Direct Detection,"**
J. Fan, M. Reece and L. T. Wang,
JCAP **1011**, 042 (2010) [arXiv:1008.1591 [hep-ph]].

61. **"Dark Matter from Dynamical SUSY Breaking,"**
J. Fan, J. Thaler and L. T. Wang,
JHEP **1006**, 045 (2010) [arXiv:1004.0008 [hep-ph]].

62. **"Leptogenic Supersymmetry,"**
A. De Simone, J. Fan, V. Sanz and W. Skiba,
Phys. Rev. D **80**, 035010 (2009) [arXiv:0903.5305 [hep-ph]].

63. **'Standard Model Couplings and Collider Signatures of a Light Scalar,"**
J. Fan, W. D. Goldberger, A. Ross and W. Skiba,
Phys. Rev. D **79**, 035017 (2009) [arXiv:0803.2040 [hep-ph]].

64. **"Low-scale Gaugino Mediation, Lots of Leptons at the LHC,"**
A. De Simone, J. Fan, M. Schmaltz and W. Skiba,
Phys. Rev. D **78**, 095010 (2008) [arXiv:0808.2052 [hep-ph]].

65. **"Higgs Boson from the Meta-stable SUSY Breaking Sector,"**
Y. Bai, J. Fan and Z. Han,
Phys. Rev. D **76**, 065003 (2007) [arXiv:0706.0007 [hep-ph]].

66. **"Spin Dependent Masses and Sim(2) Symmetry,"**
J. Fan, W. D. Goldberger and W. Skiba,
Phys. Lett. B **649**, 186 (2007) [arXiv:hep-ph/0611049].

Preprints

The preprints are submitted to journals for peer reviews.

1. **"Axion Perturbations: A General Analytical Treatment,"**
I. J. Allali, P. Chakraborty, J. Fan and M. Reece,
[arXiv:2510.07371 [hep-ph]].

2. **""Cosmic τensions Indirectly Correlate with Reionization Optical Depth,"**
I. J. Allali, P. Singh, J. Fan, and L. Li,
[arXiv:2509.09678 [astro-ph.CO]].

White Papers, Reports and Conference Proceedings

CERN = European Organization for Nuclear Research; **CEPC** = Circular Electron-Positron Collider; **CLIC** = Compact Linear Collider; **SppC** = Super proton-proton Collider.

1. **"Snowmass2021 Theory Frontier: Some Open Questions in Axion Theory,"**
P. Agrawal, K. V. Berghaus, J. Fan, A. Hook, G. Marques-Tavares and T. Rudelius, chief editor and contribute section III B,
arXiv:2203.08026 [hep-ph].

2. **"Snowmass2021 Cosmic Frontier: Synergies between Dark Matter Searches and Multiwavelength/multimessenger Astrophysics,"**
S. Ando *et al.*, contribute section 4.2,
arXiv:2203.06781 [hep-ph].

3. **"A Next-Generation Liquid Xenon Observatory for Dark Matter and Neutrino Physics,"**
J. Aalbers *et al.*, edit section II,
arXiv: 2203.02309 [physics.ins-det].

4. **"The CLIC Potential for New Physics,"**
J. de Blas *et al.*, contribute section 4.4.2,
CERN Yellow Rep. Monogr. Vol. 3 (2018) [arXiv:1812.02093 [hep-ph]].

5. **"CEPC Conceptual Design Report: Volume 2 - Physics & Detector,"**
   CEPC Study Group, edit section 2.3.2, 2.3.3, 2.3.5,
   arXiv:1811.10545 [hep-ex].
6. **"Physics at a 100 TeV pp Collider: Beyond the Standard Model Phenomena,"**
   T. Golling *et al.*, contribute section 2.10,
   CERN Yellow Report, no. 3, 441 (2017) [arXiv:1606.00947 [hep-ph]].
7. **"CEPC-SppC Preliminary Conceptual Design Report, Volume I: Physics and Detector,"**
   CEPC Study Group, contribute chapter 3: Electroweak Precision Physics at CEPC (English and Chinese),
   `http://cepc.ihep.ac.cn/preCDR/volume.html`

Research Grants

1. Project Title: Fundamental Problems in High-Energy Physics, Astroparticle Physics, and Cosmology, Task E
   Role: PI
   Source of Support: DOE DE-SC0010010
   Award Period: 04/01/2025 - 03/31/2028
2. Project Title: Cosmological probes of scalar dynamics
   Role: PI
   Source of Support: NASA 80NSSC22K0811
   Award Period: 07/01/2022 – 06/30/2026
3. Project Title: Fundamental Problems in High-Energy Physics, Astroparticle Physics, and Cosmology, Task E
   Role: PI
   Source of Support: DOE DE-SC0010010
   Award Period: 04/01/2022 - 03/31/2025
4. Project Title: Exploring complex dark sectors
   Role: PI
   Source of Support: NASA 80NSSC18K1010
   Award Period: 07/01/2018 – 06/30/2022
5. Project Title: Fundamental Problems in High-Energy Physics, Astroparticle Physics, and Cosmology, Task A
   Role: Co-PI (shared with Antal Jevicki, David Lowe, Marcus Spradlin and Anastasia Volovich)
   Source of Support: DOE DE-SC0010010
   Award Period: 04/01/2016 – 03/31/2019, 04/01/2019 – 03/31/2022

Awards

1. Richard B. Salomon Faculty Research Award, Brown University, 2017 - 2018 ($15,000);

2. Karen T. Romer Undergraduate Teaching and Research Awards (UTRA), Brown University, 2016 - 2019, 2022 (funding for undergraduates to work with me in the summer);
3. Summer and Semester Projects for Research, Internships, Teaching (SPRINT) Awards, Brown University, 2020 (funding for undergraduates to work with me in the summer);
4. Excellence in teaching at the graduate level, Syracuse University, 2014;
5. Leigh Page Prize, Yale University, 2004;
6. Fan Family Fellowship, Yale University, 2004 - 2006 (not related to donor of the fellowship);
7. Zhao Zhongyao Scholarship, Chinese Science Academy, 2002;
8. Excellent Student Awards, University of Science and Technology of China, 2000 – 2004.

Regular Courses

Courses taught at Brown:
Evaluation on overall effectiveness up to fall 2019: 1: very effective; 2: effective; 3: somewhat effective; 4: ineffective; 5: very ineffective ;
From fall 2019: 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; 5: strongly agree;
Below I mark the numbers for classes with *10 or more students* prior to fall, 2019 in blue and the numbers from fall 2019 in orange.

1. Advanced quantum mechanics (Fall 2025)
   Enrollment counts: 38(2025)
   Students' feedback on overall effectiveness: 4.58(2025)
2. Quantum field theory II (Fall 2024)
   Enrollment counts: 9(2024)
   Students' feedback on overall effectiveness: NA (2024)
3. Graduate classical physics II: electromagnetic theories (Spring 2024, 2025, 2026)
   Enrollment counts: 54(2024), 39(2025), 46(2026)
   Students' feedback on overall effectiveness: 4.67(2024), 4.68(2025)
4. Introduction to High Energy and Nuclear Physics for Graduates (Spring 2021)
   Enrollment counts: 10(2021)
   Students' feedback on overall effectiveness: 4.75(2021)
5. Introduction to High Energy and Nuclear Physics for Undergraduates (Spring 2020, 2022)
   Enrollment counts: 5(2020), 13(2022)
   Students' feedback on overall effectiveness: NA (2020), 4.56(2022)
6. Undergraduate Advanced Electromagnetism (Fall 2019, 2020, 2021)
   Enrollment counts: 17(2019), 11(2020), 20(2021)
   Students' feedback on overall effectiveness: 4.47(2019), 5(2020), 4.82(2021)

7. Undergraduate Quantum Mechanics A (Fall 2016, 2017)
   Enrollment counts: 37(2016), 34(2017)
   Students' feedback on overall effectiveness: 2.16(2016), 1.23(2017)
8. Undergraduate Advanced Classical Mechanics (Spring 2017, 2018, 2019)
   Brown University
   Enrollment counts: 25(2017), 33(2018), 40(2019)
   Students' feedback on overall effectiveness: 1.57(2017), 1.57(2018), 1.48(2019)
9. Special Topics: the Standard Model and Beyond (Fall 2015)
   Enrollment counts: 8(2015)
   Students' feedback on overall effectiveness: NA (2015)

Courses taught at Syracuse:
Evaluation for overall recommendation of the professor: 5: very much; 4: yes; 3: somewhat; 2: not really; 1: not at all

1. Graduate Quantum Mechanics II (Spring 2015)
   Enrollment counts: 17(2015)
   Students' overall recommendation: 4.67(2015)
2. Graduate Math Methods of Theoretical Physics (Fall, 2013; Fall, 2014)
   Enrollment counts: 17(2013), 15(2014)
   Students' overall recommendation: 4.29(2013), 4.80(2014; **awarded for excellence in teaching at the graduate level**)

Advising

1. Undergraduate students: Gareth Mansfield (summer research, PhD student at UCLA, **2025 NSF graduate fellowship**), Liyang Miao (summer research), Adam Tropper (senior thesis, **2020 Goldwater Scholarship, NSF graduate fellowship**; PhD student at Harvard), Eliott Rosenberg (senior thesis, PhD student at Cornell), Nathaniel Dick (summer research), Galen Hall (summer research);
2. Graduate students: Praniti Singh (Ph.D student); Yanhan Wang (master student); Shi Yan (Master degree obtained in May 2024, PhD student at University of Wisconsin, Madison), Yunjia Bao (Master degree obtained in May 2022, PhD student at Chicago), Jatan Buch (Ph.D obtained in Dec 2020, **Deans' Faculty Fellow at Brown**, postdoc in Lamont-Doherty Earth Observatory of Columbia University), Shing Chau Leung (Ph.D obtained in May 2020; ZAIS Group); Mengyang Tong (Ph.D research course), Juhi Rahans (Master research course);
3. Postdoc researchers: Itamar Allali (science fellow at University of Notre Dame), Lingfeng Li (visiting scientist at International Centre for Theoretical Physics Asia-Pacific), Manuel Buen-Abad (current postdoc at Maryland), Chen Sun (to-be faculty at Hangzhou Institute for Advanced Study), Steven Clark (joint postdoc with Prof. Koushiappas

and Alexander, assistant professor at Hood College), David Pinner (Fulcrum), Prerit Jaiswal (Amazon Web Services).

4. Ph.D thesis committee: Juliette Alimena (Brown), Jeanne Bang (Brown), Rishabh Bhardwaj (Brown), Atreya Chatterjee (Brown), Shounak De (Brown), Richard Galvez (Syracuse), Isabelle Goldstein (Brown), John Hakala (Brown), Thomas Harrington (Brown), Martin Kwok (Brown), Taeun Kwon (Brown), Ka Tung Lau (Brown), Zaixing Mao (Brown), Jessica Nelson (Brown), Max Pezzelle (Brown), Lecheng Ren (Brown), Kwon Taeun (Brown), Michael Toomy (Brown), Aarti Veernala (Syracuse), Kyriakos Vattis (Brown), Boqian Wang (Syracuse), Wingyan Wong (Brown), Xuli Yan (Brown), Michael Zlotnikov (Brown).

Workshops and Conferences Organized

Main organizer:

1. Organizer of the 2025 Pollica summer workshop “The strong CP problem and its possible solutions", Pollica physics center, Italy (2025);
2. Organizer of the Higgs 2025 conference at Brown University (2025);
3. Organizer of “Conference for Undergraduate Woman in Physics" at Brown University (2023);
4. Organizer of TASI 2022 particle physics summer school at Boulder, Colorado (2022);
5. Local Organizer of Energy Frontier Community Study Workshop Snowmass2021 at Brown University (2022);
6. Organizer of “Conference for Undergraduate Woman in Physics" at Brown University (2022; canceled by APS in Dec. 2021 after a tremendous amount of organization work was implemented);
7. Organizer of TeV particle astrophysics (TeVPA) 2021 conference at Chengdu, China (2021);
8. Organizer of “Origin of the Vacuum Energy and Electroweak Scales” workshop at Kavli Institute for Theoretical Physics, UCSB (2019);
9. Organizer of international conference on “Identification of Dark Matter" at Brown University (2018);
10. Organizer of “Many faces of naturalness" workshop at Aspen physics center (2016);
11. Organizer of Harvard self-interacting dark matter workshop (2013);
12. Organizer of “Hot topics at colliders: exploring hints for new physics" workshop at Princeton Center for Theoretical Science (2012);
13. Organizer of dark matter detection workshop at Princeton Center for Theoretical Science (2010).

Other organization work:

1. Convener of the cosmology session at the 19th international conference on topics in astroparticle and underground physics, Xichang, Sichuan, China (2025);
2. Local organizer of 12th edition of the Large Hadron Collider Physics conference (LHCP2024) at Northeastern University (2024);
3. Convener of the remote Joint Workshop of the CEPC Physics, Software and New Detector Concept (2022);
4. Convener of Cosmo' 2021 conference at UIUC, USA (2021);
5. Scientific program committee member of annual international CEPC workshop, Shanghai, China (2020);
6. Convener of the fifth annual international conference on Large Hadron Collider Physics in Shanghai, China (2017);
7. Convener of 38th International Conference on High Energy Physics (2016);

Lectures, Colloquia, Plenary/Keynote Talks at Conferences/Workshops

1. Axions in Stockholm 2025 workshop (Jul. 2025)
   Nordita Institute for Theoretical Physics, Stockholm, Sweden
   Plenary talk: **New probes of axions in the sky**
2. Dark matter and neutrinos school (May 2025)
   Institut Henri Poincare (IHP), Paris, France
   Lectures on dark matter physics
3. Workshop on defining new simulation frontiers for dark matter discovery (Oct. 2024)
   University of Toronto, Toronto, Canada
   Plenary talk: **Some comments on axion dark matter, its observables and related simulations**
4. IBS CTPU-CGA 2024 Workshop on cosmological collider (Jun. 2024)
   Institute for Basic Science (IBS), Daejeon, South Korea
   Plenary talk: **New inflationary probes of axion dark matter**
5. Colloquium (Mar. 2024) Tufts University, USA
   Fantastic dark matter and where to find it
6. TDLI-PKU BSM workshop 2022: Electroweak lights the way (Aug. 2022)
   Plenary talk: **Some lessons from recent experimental anomalies**
7. Colloquium (Feb. 2022) Brandeis University, USA
   Kaleidoscope of axion probes and models
8. 11th PIKIMO meeting (Dec. 2021)
   University of Pittsburgh, Pittsburgh, PA, USA
   Plenary talk: **New developments in axion theory and probes**
9. Remote workshop: Ending Inflation and the Hot Big Bang (Nov. 2021)
   Simons center for geometry and physics, Stonybrook, NY, USA
   Panelist: string + particle panel

10. Colloquium (Nov. 2021) MIT, USA
    Kaleidoscope of axion models and probes
11. Online Particle Physics and Cosmology Conference (May 2021)
    University of Oklahoma, Oklahoma, OK, USA
    Plenary talk: **New developments in axion theory**
12. Colloquium (Nov. 2020) York University, Canada
    Fantastic dark matter and where to find it
13. Online International Conference "Anomalies 2020" (Sep. 2020)
    Indian Institute of Technology, Hyderabad, India
    Plenary Talk: **Galactic Origin of Relativistic Bosons and XENON1T Excess**
14. Online Colloquium (Jun. 2020) University of Cambridge, England
    A Cosmic Microscope for the Preheating Era
15. KEK-PH 2020 Workshop (Feb. 2020)
    KEK (the High Energy Accelerator Research Organization), Japan
    Plenary Talk: **Dynamical axion misalignment with small instantons**
16. 43rd Johns Hopkins Workshop (Jun. 2019)
    IPMU(the Kavli Institute for the Physics and Mathematics of the Universe), Japan
    Plenary Talk: **Cosmological probes of Higgs dynamics in the early Universe**
17. Colloquium (Nov. 2018) McGill University, Canada
    Fantastic dark matter and where to find it
18. Interplay between Particle and Astroparticle physics Conference (Oct. 2018)
    University of Cincinnati, Cincinnati, OH, USA
    Plenary Talk: **Higgscitement: cosmological dynamics of fine-tuning**
19. 1st Workshop on High Energy Theory and Gender (Sep. 2018)
    CERN (the European Organization for Nuclear Research), Switzerland
    Plenary talk: **Beyond Standard Model phenomenology**
20. TeV Particle Astrophysics Conference (Aug. 2018)
    Berlin, Germany
    Plenary talk: **Beyond Standard Model in light of LHC results**
21. Lecture at Dark Matter Summer School (Jul. 2018)
    State University of New York at Albany, Albany, NY, USA
    Supersymmetry and dark matter
22. The 26th International Workshop on Weak Interactions and Neutrinos (Jun. 2017)
    University of California, Irvine, CA, USA
    Plenary talk: **Theoretical overview: electroweak scale new physics and naturalness**
23. Colloquium (Apr. 2017) Northeastern University, USA
    Ultralight repulsive dark matter
24. Lecture at CMS Data Analysis School (Jan. 2017) Fermilab, USA
    A big picture look at the LHC

25. Colloquium (Nov. 2016) Brown University, USA
    Particle physics after the Higgs: now to the future
26. US ATLAS meeting (Jun. 2015)
    University of Illinois at Urbana-Champaign, Champaign, IL, USA
    Plenary talk: **Naturalness and BSM physics beyond vanilla**
27. Colloquium (Mar. 2015) Northeastern University, USA
    Testing TeV-scale new physics under the ground and in the sky
28. Colloquium (Feb. 2015) Brown University, USA
    Testing TeV-scale new physics under the ground and in the sky
29. US LHC Users Association Annual Meeting (Nov. 2014)
    Argonne National Laboratory, Lemont, IL, USA
    Keynote talk: **Higgs and dark sector**
30. Lecture (Mar. 2014) CFHEP (the Center for Future High Energy Physics), IHEP (the Institute of High Energy Physics), Beijing, China
    Status of neutralino dark matter

Seminars

1. High Energy Theory Seminar (Apr. 2026) Berkeley
   Cosmological axion perturbations
2. High Energy Theory Seminar (Mar. 2026) NYU
   Cosmological axion perturbations
3. High Energy Theory Seminar (Mar. 2025) Yale
   New probes of axions in the sky
4. Nuclear and Particle Physics Seminar (Dec. 2023) MIT
   New inflationary probes of axion dark matter
5. Copernicus Webinar (Nov. 2023) multi-institutional online joint seminar series
   New inflationary probes of axion dark matter
6. NeXus Seminar (Dec. 2022) Online meeting of black theoretical physicists
   Jupiter missions as probes of dark matter
7. Majorana-Raychaudhuri Seminar (Nov. 2022) INFN & University Salerno, Italy & PAMU, Indian Statistical Institute, Kolkata, India
   Opening up Window of Post-inflationary QCD Axion
8. TDLI/SJTU DM+nu Forum (Nov. 2022) Tsung-Dao Lee Institute & Shanghai Jiao Tong University
   Jupiter missions as probes of dark matter
9. Joint Tufts/MIT Cosmology Seminar (Oct. 2022) Tufts University and MIT
   Two short tales of axions
10. Particle Physics Seminar (July 2022) Peking University and Chongqing University
    Axion mass from magnetic monopole loops

11. Particle Physics Seminar (Mar. 2022) Harvard University
Axion echos from supernovae graveyard
12. Particle Physics Seminar (Feb. 2022) Perimeter Institute
Axion echos from supernovae graveyard
13. Particle Physics Seminar (Feb. 2022) Boston University
Axion echos from supernovae graveyard
14. Online Seminar (Feb. 2022) Minnesota University
Axion echos from supernovae graveyard
15. Online Seminar (Dec. 2021) Weizmann Institute of Science
Axion echos from supernovae graveyard
16. Online Seminar (Dec. 2021) IPMU, Tokyo University
Muon collider basics
17. Online Seminar (July 2021) University of Bonn
Spillway preheating and a cosmic microscope for preheating
18. Online Seminar (May 2021) Caltech
Two short tales of axions
19. Online Seminar (May 2021) Brown University
Muon $g-2$**: status and implications**
20. Online Joint Seminar (Feb. 2021) Florida University and Florida State University
Constraints on axions from cosmic distance measurements
21. Particle Theory Seminar (Apr. 2020) Harvard University
cancelled due to COVID-19
22. Particle Theory Seminar (Apr. 2020) Yale University
cancelled due to COVID-19
23. Pheno and Vino Seminar (Mar. 2020) Princeton University
Dark matter direct detection in light of *Gaia*
24. Particle Theory Seminar (Oct. 2019) University of Massachusetts Amherst
Cosmological probes of Higgs dynamics in the early Universe
25. Particle Theory Seminar (May 2019) University of California Irvine
Cosmological probes of Higgs dynamics in the early Universe
26. Particle Theory Seminar (May 2019) University of Maryland
Cosmological probes of Higgs dynamics in the early Universe
27. Particle Theory Seminar (Apr. 2019) University of Illinois at Urbana-Champaign
Cosmological probes of Higgs dynamics in the early Universe
28. Cosmo/high energy Theory Seminar (Dec. 2018) University of Pennsylvania
Axion couplings and their cosmological implications
29. Particle Theory Seminar (Dec. 2018) Stony Brook University
Axion couplings and their cosmological implications

30. Astrophysical Theory Seminar (Oct. 2018) Rice University
Axion couplings and their cosmological implications
31. Particle Theory Seminar (Sep. 2018) Boston University
Higgscitement: cosmological dynamics of fine-tuning
32. Particle Theory Seminar (May 2018) University of California Davis
Higgscitement: cosmological dynamics of fine-tuning
33. Particle Theory Seminar (Mar. 2018) Lawrence Berkeley National Laboratory
Higgscitement: cosmological dynamics of fine-tuning
34. Topic of the Week Seminar (May 2017) Fermilab
SUSY: from now to the future
35. Particle Theory Seminar (Mar. 2017) Ohio State University
Ultralight repulsive dark matter
36. Pheno and Vino Seminar (Feb. 2017) Princeton University
Ultralight repulsive dark matter
37. Particle Theory Seminar (Dec. 2016) New York University
Ultralight repulsive dark matter
38. Particle Theory Seminar (Nov. 2016) Caltech
Ultralight repulsive dark matter
39. Particle Theory Seminar (Oct. 2016) SLAC National Accelerator Laboratory
Ultralight repulsive dark matter
40. Particle Theory Seminar (Apr. 2016) Yale University
Ultralight repulsive dark matter
41. Joint Particle Theory Seminar (Mar. 2016) Brookhaven National Laboratory/Stony Brook University
New signatures of top partners
42. Particle Theory Seminar (Jan. 2016) Brown University
Diphoton excess at the LHC and its possible implications
43. Particle Theory Seminar (Oct. 2015) MIT
Searching for beyond Standard Model beyond vanilla
44. Particle Theory Seminar (May 2015) University of Illinois, Chicago
Testing TeV-scale new physics under the ground and in the sky
45. Particle Theory Seminar (May 2015) Argonne National Laboratory
Testing TeV-scale new physics under the ground and in the sky
46. Particle Theory Seminar (Apr. 2015) Brookhaven National Laboratory
Higgs as a lamp post of new physics
47. Particle Theory Seminar (Jan. 2015) Boston University
Higgs as a lamp post of new physics
48. Particle Theory Seminar (Jan. 2015) University of Chicago
Testing TeV-scale new physics under the ground and in the sky

49. Particle Theory Seminar (Oct. 2014) University of Chicago
Higgs as a lamp post of new physics
50. Particle Theory Seminar (Apr. 2014) Boston University
In Wino veritas
51. Particle Theory Seminar (Mar. 2014) Peking University
Confronting naturalness with Higgs data
52. Particle Theory Seminar (Feb. 2014) Syracuse University
Double-disk dark matter
53. Particle Theory Seminar (Feb. 2014) Lawrence Berkeley National Laboratory
In Wino veritas
Confronting naturalness with Higgs data
54. Pheno and Vino Seminar (Feb. 2014) Princeton University
Confronting naturalness with Higgs data
55. Particle Theory Seminar (Nov. 2013) Cornell University
Natural or unnatural?
56. Internal Particle Theory Seminar (Feb. 2013) Harvard University
Double-disk dark matter
57. Particle Theory Seminar (Jan. 2013) Los Alamos National Laboratory
Probing charged matter through Higgs data, DM and EDMs
58. Particle Theory Seminar (Oct. 2012) Syracuse University
Higgs data and naturalness of electroweak scale
59. Internal Particle Theory Seminar (Sep. 2012) Harvard University
Higgs data and naturalness of electroweak scale
60. Particle Theory Seminar (Sep. 2012) Yale University
Higgs data and naturalness of electroweak scale
61. Particle Theory Seminar (Mar. 2012) University of California Irvine
Stealth supersymmetry
62. Particle Theory Seminar (Feb. 2012) Syracuse University
Stealth supersymmetry
63. Particle Theory Seminar (Feb. 2012) University of Wisconsin-Madison
Supersymmetry: where are we and where are we going?
64. Particle Theory Seminar (Feb. 2012) Stony Brook Universtiy
Stealth supersymmetry
65. Particle Theory Seminar (Oct. 2011) University of Michigan
Mitigating moduli problem in low-Scale SUSY breaking scenarios
66. Particle Theory Seminar (Sep. 2011) SLAC National Accelerator Laboratory
Stealth supersymmetry
67. Particle Theory Seminar(Sep. 2011) University of California Davis
Stealth supersymmetry

68. Particle Theory Seminar (Sep. 2011) University of California Berkeley
Effective AdS/renormalized CFT
69. Particle Theory Seminar (May 2011) Harvard University
Effective AdS/renormalized CFT
70. Particle Theory Seminar (Apr. 2011) Boston University
Effective AdS/renormalized CFT
71. Particle Theory Seminar (Apr. 2011) Cornell University
Effective AdS/renormalized CFT
72. Particle Theory Seminar (Mar. 2011) University of Chicago
Heavy squarks at the LHC
73. Particle Theory Seminar (Mar. 2011) Fermilab
Heavy squarks at the LHC
74. Particle Theory Seminar (Sep. 2010) University of Maryland
Non-relativistic effective theory of dark matter direction detection
75. Particle Theory Seminar (Sep. 2010) Rutgers University
Non-relativistic effective theory of dark matter direction detection

Other Talks at Conferences and Workshops

1. "Particle Production and Thermal Effects in Inflation" Mini-Workshop (Feb. 2024)
King's College London, London, UK
Remote talk: **New inflationary probes of axion dark matter**
2. 2023 International Conference of Deep Space Sciences (Apr. 2023)
University of science and technology of China, Hefei, China
Remote talk: **Jupiter missions as probes of dark matter**
3. Atomic Dark Matter Workshop (Jan. 2023)
Pittsburgh Particle Physics Astrophysics and Cosmology Center, University of Pittsburgh, PA, USA
Talk: **Overview of double disk dark matter**
4. SchwingerFest $g-2$ (Jun. 2022)
University of California, Los Angeles, CA, USA
Talk: **Challenges for an axion explanation of the muon $g-2$ measurement**
5. CMB-S4 2021 Summer Collaboration Meeting (online, Aug. 2021)
Talk: **Modulating fields and the CMB**
6. $(g-2)$ Days 2021 (online, May-Jun. 2021)
Talk: **Challenges of an axion explanation for muon $g-2$**
7. Aspen 2021 Winter Workshop: A Rainbow of Dark Sectors (online, Mar.-Apr. 2021)
Talk: **Constraints on axions from cosmic distance measurements**
8. Muon Collider Explorations Workshop (online, Dec. 2020)
Talk: **Physics potential of a muon collider**

9. Online Snowmass Cosmic Frontier CF3 Group Discussion (Aug. 2020)
   Talk: **New axion models/astrometric probe**
10. Workshop on Cosmic Roads to New Physics (Apr. 2020)
    The Center of Mathematical Sciences and Applications, Harvard, MA, USA
    Workshop postponed due to COVID-19
11. Origin of the Vacuum Energy and Electroweak Scales Workshop (Jun.-Aug. 2019)
    Kavli Institute for Theoretical Physics, UCSB, CA, USA
    Talk: **Cosmological probes of Higgs dynamics in the early Universe**
12. APS April meeting (Apr. 2019)
    Denver, CO, USA
    Invited Talk: **Searching for heavy WIMP at direct detection**
13. Beyond Standard Model Workshop (Sep. 2018)
    Galileo Galilei Institute for Theoretical Physics, Florence, Italy
    Talk: **Higgscitement: cosmological dynamics of fine-tuning**
14. Physics at the LHC and beyond Theory Institute(Aug. 2018)
    CERN, Geneva, Switzerland
    Talk: **Higgscitement: cosmological dynamics of fine-tuning**
15. Towards Dark Matter Discovery Workshop (Apr. 2018)
    University of Chicago, Chicago, IL, USA
    Talk: **Ultralight scalar dark matter with repulsive self-interaction**
16. Winter Conference: Particle Frontier (Mar. 2018)
    Aspen center of physics, Aspen, CO, USA
    Talk: **Higgscitement: cosmological dynamics of fine-tuning**
17. Ultralight Dark Matter and Axions Workshop (Mar. 2018)
    University of Michigan, Ann Arbor, MI, USA
    Talk: **Experimental targets of QCD axion coupling to photons**
18. 2nd FCC Workshop (Jan. 2018)
    CERN, Geneva, Switzerland
    Talk: **Jet observables and stops at 100 TeV collider**
19. IAS Program on High Energy Physics (Jan. 2018)
    Hong Kong University of Science and Technology, Hong Kong, China
    Talk: **Higgscitement: cosmological dynamics of fine-tuning**
20. New Lamppost for Dark Matter Workshop (May 2017)
    University of Oregon, Eugene, OR, USA
    Talk: **Ultralight repulsive dark matter**
21. LHC, FCC-ee, FCC-hh Interplay (Nov. 2016)
    CERN, Geneva, Switzerland
    Talk: **Discovery potentials of a high luminosity** Z, W, h, **and** t **machine**
22. CoSMS Naturalness Workshop (Oct. 2016)
    University of North Carolina at Chapel Hill, Chapel, NC, USA
    Talk: **Naturalness at colliders and in cosmology**

23. New England Theoretical Cosmology and Gravity Workshop (Sep. 2016)
    Brown University, Providence, RI, USA
    Talk: **Ultralight repulsive dark matter**
24. 38th International Conference on High Energy Physics (Aug. 2016)
    Chicago, IL, USA
    Parallel talk: **Discovery potentials of a high luminosity Z, W, h, and t machine**
25. Experimental Challenges for the LHC Run II Workshop(May 2016)
    Kavli Institute for Theoretical Physics, UCSB, CA, USA
    Discussion leader: **New signatures for non-conventional SUSY, dark matter searches at the LHC**
26. 100 TeV Collider Dark Matter Workshop (Dec. 2015)
    Fermilab, Batavia, IL, USA
    Talk: **Implications of indirect detection data for neutralino dark matter**
27. Higgs and Beyond Workshop (Dec. 2015)
    Pittsburgh University, Pittsburgh, PA, USA
    Talk: **Higgs and dark matter connection**
28. Primordial Universe Workshop (Jun. 2015)
    Aspen center of physics, Aspen, CO, USA
    Discussion leader: **Moduli cosmology and DM phenomenology**
29. CIPANP meeting (May 2015)
    Vail, CO, USA
    Parallel talk: **Prospects of supersymmetry at HL-LHC and beyond**
    Review talk: **Prospects of precision measurements at future high energy colliders**
30. FCC Week (Mar. 2015)
    Washington DC, USA
    Parallel Talk: **Sensitivity to new physics of precision Higgs and EW observables**
31. Winter Conference: Exploring the Physics Frontier with Future Colliders (Jan. 2015)
    Aspen center of physics, Aspen, CO, USA
    Talk: **Prospects of electroweak precision at future colliders: ILC, FCC-ee and CEPC**
32. Hidden Dark Matter Workshop (Nov. 2014)
    University of Michigan, Ann Arbor, MI, USA
    Talk: **In Wino veritas**
33. Nature Guiding Theory Workshop (Aug. 2014)
    Fermilab, Batavia, IL, USA
    Talk: **SUSY phenomenology and naturalness**
34. Probing Non-Minimal Dark Sectors Workshop (Jun. 2014)
    University of Pittsburgh, Pittsburgh, PA, USA
    Discussion leader: **Dedicated searches of non-minimal DM**
35. SUSY at the Near Energy Frontier Workshop (Nov. 2013)
    Fermilab, Batavia, IL, USA
    Talk: **Review of stealth SUSY**

36. Exploring TeV Scale New Physics with LHC Data Workshop (May 2013)
    Kavli Institute for Theoretical Physics, UCSB, CA, USA
    Weekly Talk: **Dark-disk universe**
37. LHC Higgs Signal Workshop (Apr. 2013)
    University of California, Davis, CA, USA
    Talk: **Higgs data vs naturalness**
38. Dark Matter Workshop (Mar. 2013)
    Texas A&M University, College Station, TX, USA
    Talk: **Double-disk dark matter**
39. Cosmic Frontier Workshop (Mar. 2013)
    SLAC National Accelerator Laboratory, Menlo Park, CA, USA
    Parallel Talk: **Double-disk dark matter**
40. Winter EDM Workshop (Feb. 2013)
    Fermilab, Batavia, IL, USA
    Talk: **Collider probes of CP violation**
41. Higgs Identification Workshop (Dec. 2012)
    Kavli Institute for Theoretical Physics, UCSB, CA, USA
    Talk: **Probing charged matter through Higgs data, DM and EDMs**
42. Chicago LHC Workshop (Nov. 2012)
    Chicago, IL, USA
    Talk: **Higgs data and vacuum instability**
43. Lattice Meets Experiment: Beyond the Standard Model Workshop (Oct. 2012)
    University of Colorado Boulder, Boulder, CO, USA
    Talk: **Composite dark matter theories**
44. Aspen Summer Workshop (Aug. 2012)
    Aspen center of physics, Aspen, CO, USA
    Talk: **Higgs data and naturalness of electroweak scale**
45. CIPANP (Jun. 2012)
    St. Petersburg, FL, USA
    Parallel Talk: **Theories of sterile neutrino**
46. The 4th Neutrino Workshop (May 2012)
    University of Chicago, Chicago, IL, USA
    Talk: **Theories of sterile neutrino**
47. Brookhaven Forum (Oct. 2011)
    Brookhaven National Laboratory, Shirley, NY, USA
    Parallel Talk: **Stealth supersymmetry**
48. SUSY 2011 Conference(Aug. 2011)
    Fermilab, Batavia, Illinois, USA
    Parallel Talk: **Stealth supersymmetry**

49. Boost 2011 Conference (May 2011)
    Princeton University, Princeton, NJ, USA
    Talk: **SUSY with unconventional collider signals**
50. Winter Conference: Direct and Indirect Detection of Dark Matter (Feb. 2011)
    Aspen center of physics, Aspen, CO, USA
    Talk: **Non-relativistic effective theory of dark matter direction detection**
51. Santa Fe Summer Workshop: LHC: From Here to Where (Jul. 2010)
    Sante Fe, NM, USA
    Talk: **Non-relativistic effective theory of dark matter direction detection**
52. Brookhave Forum (Oct. 2010)
    Brookhaven National Laboratory, Shirley, NY, USA
    Parallel talk: **Dark matter from dynamical SUSY breaking**
53. 2010 Phenomenology Symposium (May 2010)
    University of Wisconsin-Madison, Madison, WI, USA
    Parallel talk: **Dark matter from dynamical SUSY breaking**
54. Beyond the Standard Model: from the Tevatron to the LHC (Sep. 2008)
    Fermilab, Batavia, IL, USA
    Talk: **Low-scale gaugino mediation**

Departmental/University Service

Brown:

1. Diversity and inclusion action plan committee 2021 –2022;
2. Freshman and sophomore academic advising 2017–2026 (2023–2026 committee chair);
3. First and second-year PhD student academic advising 2020–2021;
4. Ad hoc faculty hiring committee 2021;
5. Check-in committee of research assistant professor 2024 – present;
6. Graduate qualifying exam committee 2017–2022, 2024;
7. Graduate comprehensive exam committees 2025;
8. Graduate admission committee 2017, 2025, 2026;
9. Goldwater fellowship review committee at Brown 2025, 2026;

Syracuse: first-year PhD student advising committee, high energy experimental faculty hiring committee, physics lecturer hiring committee 2014–2015.

Referee Service

Journals: Physical Review Letters; Physical Review D; Journal of High Energy Physics; Journal of Cosmology and Astroparticle Physics; Physics of the Dark Universe; European Physics

Letters; Nuclear Physics B; Physics Letters B; International Journal of Modern Physics A; Science China Physics, Mechanics & Astronomy;

Funding: reviewer of DOE, NASA, and NSF grant proposals, DOE graduate student fellowship application, U.S.-Israel Binational Science Foundation application, University research fellowships of the Royal Society England, and Brown Salomon Faculty Research Award.