

## **Can Kilic**

Center for Theory, Weinberg Institute, Dept. of Physics  
University of Texas at Austin  
Austin, TX 78712-1199  
office: (512)-232-8039  
[kilic@physics.utexas.edu](mailto:kilic@physics.utexas.edu)  
website: <https://sites.cns.utexas.edu/kilic>

## **Education**

2000 - 2006 Ph.D. in Physics, Harvard University (Cambridge MA)  
1996 - 2000 B.S. in Physics, Bogazici (Bosphorus) University (Istanbul Turkey)

## **Professional Experience**

2017-present Associate Professor, The University of Texas at Austin  
Member of Weinberg Theory Group  
2011-2017 Assistant Professor, The University of Texas at Austin  
Member of Weinberg Theory Group  
2009-2011 Postdoctoral Research Associate, Rutgers University  
(New High Energy Theory Center, Dept. of Physics and Astronomy)  
2006-2009 Postdoctoral Research Fellow, The Johns Hopkins University  
(Dept. of Physics and Astronomy)

## **Professional Societies**

The American Physical Society (APS)

## **Grants**

### Previous Funding

#### Co-PI

NSF Award No. PHY-1914679, “String Theory and Quantum Field Theory: From the Planck Scale to the Hubble Scale” (2019-2022)

PI Steven Weinberg, co-PIs Distler, Fischler, Kilic, Paban.

Co-PI

NSF Award No. PHY-1620610, “String Theory and Quantum Field Theory: From the Planck Scale to the Hubble Scale” (2016-2019)

PI Steven Weinberg, co-PIs Distler, Fischler, Kilic, Paban.

PI

NSF Award No. PHY-1315983, “Improving Discovery Prospects and Measurement Precision for New Physics at the Large Hadron Collider” (2013-2016)

UT Austin Graduate School Summer Research Assignment, “The Study of Flavored Dark Matter” (2012-2013)

Current Funding

Co-PI

NSF Award No. PHY-2210562, “String Theory and Quantum Field Theory: From the Planck Scale to the Hubble Scale” (2022-2025)

PI Willy Fischler, co-PIs Caceres, Distler, Kilic, Paban.

## Publications

### *Publications while in rank of Associate Professor*

[48]<sup>1</sup> Matthew Gignac, Can Kilic, Rakhi Mahbubani, Taewook Youn,  
“Optimizing pixel tracklet searches for shorter lifetimes”,  
JHEP 03 (2023) 040, arXiv:2211.06949

[47] Maaz Ul Haq, Can Kilic, Benjamin Lawrence-Sanderson, Ram Purandhar Reddy Sudha,  
“Applying Machine Learning Techniques To Intermediate-Length Cascade Decays”,  
arXiv:2210.01178

[46] Manuel A. Buen-Abad, Zackaria Chacko, Can Kilic, Gustavo Marques-Tavares,  
Taewook Youn,  
“Stepped Partially Acoustic Dark Matter, Large Scale Structure, and the Hubble Tension”,  
arXiv:2208.05984

[45]<sup>1</sup> Can Kilic, Christopher Verhaaren, Taewook Youn,  
“Twin Quark Dark Matter From Cogenesis”,  
Phys.Rev.D 104 (2021) 11, 116018, arXiv:2109.03248

[44]<sup>1</sup> Niral Desai, Can Kilic, Yuan-Pao Yang, Taewook Youn,  
“Suppressed flavor violation in Lepton Flavored Dark Matter from an extra dimension”,  
Phys.Rev.D 101 (2020) 075043, arXiv:2001.00720

[43]<sup>1</sup> Zackaria Chacko, Can Kilic, Saereh Najjari, Christopher B. Verhaaren,  
“Collider Signals of the Mirror Twin Higgs through the Hypercharge Portal”,  
Phys.Rev. D100 (2019) no.3, 035037, arXiv:1904.11990

[42]<sup>1</sup> Can Kilic, Saereh Najjari, Christopher B. Verhaaren,  
“Discovering the Twin Higgs Boson with Displaced Decays”,  
Phys.Rev. D99 (2019) no.7, 075029, arXiv:1812.08173

[41]<sup>1</sup> J. de Blas, et. al.  
“The CLIC Potential for New Physics”,  
CERN Yellow Rep. Monogr. Vol. 3 (2018), arXiv:1812.02093

[40] The CEPC Study Group,  
“CEPC Conceptual Design Report: Volume 2 - Physics & Detector”,  
arXiv:1811.10545

[39]<sup>1</sup> Christopher Dessert, Can Kilic, Cynthia Trendafilova, Yuhsin Tsai,  
“Addressing Astrophysical and Cosmological Problems With Secretly Asymmetric Dark  
Matter”,  
Phys.Rev. D100 (2019) no.1, 015029, arXiv:1811.05534

[38]<sup>1</sup> Dipsikha Debnath, James S. Gainer, Can Kilic, Doojin Kim, Konstantin T.  
Matchev, Yuan-Pao Yang,  
“Enhancing the discovery prospects for SUSY-like decays with a forgotten kinematic  
variable”,  
JHEP 1905 (2019) 008, arXiv:1809.04517

[37]<sup>1</sup> Zackaria Chacko, Can Kilic, Saereh Najjari, Christopher Verhaaren,  
“Testing the Scalar Sector of Twin Higgs Models at Colliders”,  
Phys.Rev. D97 (2018) no.5, 055031, arXiv:1711.05300

***Publications while in rank of Assistant Professor***

[36]<sup>1</sup> Baris Altunkaynak, Can Kilic, Matthew D. Klimek,  
“Multi-Dimensional Phase Space Methods for Mass Measurements and Decay Topology  
Determination”,  
Eur.Phys.J. C77 (2017) no.2, 61, arXiv:1611.09764

[35]<sup>1</sup> Dipsikha Debnath, James S. Gainer, Can Kilic, Doojin Kim, Konstantin T. Matchev,  
Yuan-Pao Yang,  
“Detecting kinematic boundary surfaces in phase space: particle mass measurements in  
SUSY-like events”,

JHEP 1706 (2017) 092 , arXiv:1611.04487

[34]<sup>1</sup> Prateek Agrawal, Can Kilic, Sivaramakrishnan Swaminathan, Cynthia Trendafilova,  
“Secretly Asymmetric Dark Matter”,  
Phys.Rev. D95 (2017) no.1, 015031, arXiv:1608.04745

[33]<sup>1</sup> Dipsikha Debnath, James S. Gainer, Can Kilic, Doojin Kim, Konstantin T. Matchev,  
Yuan-Pao Yang,  
“Identifying Phase Space Boundaries with Voronoi Tessellations”,  
Eur.Phys.J. C76 (2016) no.11, 645, arXiv:1606.02721

[32]<sup>1</sup> Nathaniel Craig, Patrick Draper, Can Kilic, Scott Thomas,  
“Shedding Light on Diphoton Resonances”,  
Phys.Rev. D93 (2016) no.11, 115023, arXiv:1512.07733

[31]<sup>1</sup> Prateek Agrawal, Zackaria Chacko, Elaine C. F. S. Fortes, Can Kilic,  
“Skew-Flavored Dark Matter”,  
Phys.Rev. D93 (2016) no.10, 103510, arXiv:1511.06293

[30]<sup>1</sup> Can Kilic, Sivaramakrishnan Swaminathan,  
“Can A Pseudo-Nambu-Goldstone Higgs Lead To Symmetry Non-Restoration?”,  
JHEP 1601 (2016) 002, arXiv:1508.05121

[29]<sup>1</sup> Prateek Agrawal, Zackaria Chacko, Can Kilic, Christopher Verhaaren,  
“A Couplet From Flavored Dark Matter”,  
JHEP 1508 (2015) 072, arXiv:1503.03057

[28]<sup>1</sup> Can Kilic, Matthew D. Klimek, Jiang-Hao Yu,  
“Signatures of Top Flavored Dark Matter”,  
Phys.Rev. D91 (2015) no.5, 054036, arXiv:1501.02202

[27]<sup>1</sup> Ali Hamze, Can Kilic, Jason Koeller, Cynthia Trendafilova, Jiang-Hao Yu,  
“Lepton-Flavored Asymmetric Dark Matter and Interference in Direct Detection”,  
Phys.Rev. D91 (2015) no.3, 035009, arXiv:1410.3030

[26]<sup>1</sup> Prateek Agrawal, Can Kilic, Craig White, Jiang-Hao Yu,  
“Improved Mass Measurement Using the Boundary of Many-body Phase Space”,  
Phys.Rev. D89 (2014) no.1, 015021, arXiv:1308.6560

[25]<sup>1</sup> Can Kilic and Brock Tweedie,  
“Cornering Light Stops with Dileptonic  $mT^2$ ”,  
JHEP 1304 (2013) 110, arXiv:1211.6106

[24]<sup>1</sup> Nathaniel Craig, Jared Evans, Richard Gray, Can Kilic, Michael Park, Sunil Somalwar, Scott Thomas,  
“Multi-lepton Signals of Multiple Higgs Bosons”,  
JHEP 1302 (2013) 033, arXiv:1210.0559

[23]<sup>1</sup> Can Kilic, Amitabh Lath, Keith Rose, Scott Thomas,  
“Jet Extinction from Non-Perturbative Quantum Gravity Effects”,  
Phys.Rev. D89 (2014) no.1, 016003, arXiv:1207.3525

[22]<sup>1</sup> The CMS Collaboration,  
“Search for Leptonic Decays of W’ Bosons in pp Collisions at  $\sqrt{s}=7$  TeV”,  
JHEP 1208 (2012) 023, arXiv:1204.4764

[21]<sup>1</sup> Emmanuel Contreras-Campana, Nathaniel Craig, Richard Gray, Can Kilic, Michael Park, Sunil Somalwar, Scott Thomas,  
“Multi-lepton Signals of the Higgs Boson”,  
JHEP 1204 (2012) 112, arXiv:1112.2298

[20]<sup>1</sup> Kevork N. Abazajian, Prateek Agrawal, Zackaria Chacko, Can Kilic,  
“Lower Limits on the Strength of Gamma Ray Lines from WIMP Dark Matter Annihilation”,  
Phys.Rev. D85 (2012) 123543, arXiv:1111.2835

[19] Richard C. Gray, Michael Park, Can Kilic, Sunil Somalwar, Scott Thomas,  
“Backgrounds to Higgs Boson Searches from Asymmetric Internal Conversion”,  
arXiv:1110.1368

[18]<sup>1</sup> Prateek Agrawal, Steve Blanchet, Zackaria Chacko, Can Kilic,  
“Flavored Dark Matter, and Its Implications for Direct Detection and Colliders”,  
Phys.Rev. D86 (2012) 055002, arXiv:1109.3516

***Publications as postdoctoral fellow***

[17]<sup>1</sup> LHC New Physics Working Group Collaboration (Daniele Alves (SLAC) et al.),  
“Simplified Models for LHC New Physics Searches”,  
J.Phys. G39 (2012) 105005, arXiv:1105.2838

[16]<sup>1</sup> Spencer Chang, Can Kilic, Takemichi Okui,  
“Measuring Top Squark Interactions with the Standard Model through Associated Production”,  
Phys.Rev. D84 (2011) 035015, arXiv:1105.1332

[15]<sup>1</sup> Can Kilic, Scott Thomas,  
“Signatures of Resonant Super-Partner Production with Charged-Current Decays”,

Phys.Rev. D84 (2011) 055012, arXiv:1104.1002

[14]<sup>1</sup> Nathaniel Craig, Can Kilic, Matthew J. Strassler,  
“LHC Charge Asymmetry as Constraint on Models for the Tevatron Top Anomaly”,  
Phys.Rev. D84 (2011) 035012, arXiv:1103.2127.

[13]<sup>1</sup> Can Kilic, Karoline Kopp, Takemichi Okui,  
“LHC Implications of the WIMP Miracle and Grand Unification”,  
Phys.Rev. D83 (2011) 015006, arXiv:1008.2763

[12] Prateek Agrawal, Zackaria Chacko, Can Kilic, Rashmish K. Mishra,  
“Direct Detection Constraints on Dark Matter Event Rates in Neutrino Telescopes, and  
Collider Implications”,  
arXiv:1003.5905

[11] Prateek Agrawal, Zackaria Chacko, Can Kilic, Rashmish K. Mishra,  
“A Classification of Dark Matter Candidates with Primarily Spin-Dependent Interactions  
with Matter”,  
arXiv:1003.1912

[10]<sup>1</sup> Kevork N. Abazajian, Prateek Agrawal, Zackaria Chacko, Can Kilic,  
“Conservative Constraints on Dark Matter from the Fermi-LAT Isotropic Diffuse Gamma-  
Ray Background Spectrum”,  
JCAP 1011 (2010) 041, arXiv:1002.3820

[9]<sup>1</sup> Can Kilic, Takemichi Okui,  
“The LHC Phenomenology of Vectorlike Confinement”,  
JHEP 1004 (2010) 128, arXiv:1001.4526

[8]<sup>1</sup> Can Kilic, Takemichi Okui, Raman Sundrum,  
“Vectorlike Confinement at the LHC”,  
JHEP 1002 (2010) 018, arXiv:0906.0577

[7]<sup>1</sup> Can Kilic, Steffen Schumann, Minh Son,  
“Searching for Multijet Resonances at the LHC”,  
JHEP 0904 (2009) 128, arXiv:0810.5542

[6]<sup>1</sup> Can Kilic, Takemichi Okui, Raman Sundrum,  
“Colored Resonances at the Tevatron: Phenomenology and Discovery Potential in Multijets”,  
JHEP 0807 (2008) 038, arXiv:0802.2568

[5]<sup>1</sup> Can Kilic, Lian-Tao Wang, Itay Yavin,  
“On the existence of angular correlations in decays with heavy matter partners”,

JHEP 0705 (2007) 052, arXiv: hep-ph/0703085

***Publications as graduate student***

[4]<sup>1</sup> Matthew Baumgart, Thomas Hartman, Can Kilic, Lian-Tao Wang,  
“Discovery and measurement of sleptons, binos and winos with a Z-prime”,  
JHEP 0711(2007)084, arXiv: hep-ph/0608172

[3]<sup>1</sup> Yuval Grossman, Can Kilic, Jesse Thaler, Devin E. G. Walker,  
“Neutrino Constraints on Spontaneous Lorentz Violation”,  
Phys.Rev. D72 (2005) 125001, arXiv: hep-ph/0506216

[2]<sup>1</sup> Spencer Chang, Can Kilic, Rakhi Mahbubani,  
“New fat Higgs: Increasing the MSSM Higgs mass with natural gauge unification”,  
Phys.Rev. D71 (2005) 015003, arXiv: hep-ph/0405267

[1]<sup>1</sup> Can Kilic, Rakhi Mahbubani,  
“Precision Electroweak Observables in the Minimal Moose Little Higgs Model”,  
JHEP 0407 (2004) 013, arXiv: hep-ph/0312053

Articles in Conference Proceedings

[2] Top Quark Working Group Collaboration (K. Agashe (Convener) et al.),  
“Working Group Report: Top Quark”,  
Community Summer Study 2013: Snowmass on the Mississippi.  
(C13-07-29.2), arXiv:1311.2028

[1] Prateek Agrawal, Steve Blanchet, Zackaria Chacko, Can Kilic,  
“The phenomenology of lepton flavored dark matter”,  
Workshop on Dark Matter, Unification and Neutrino Physics (CETUP\* 2012)  
(C12-07-10.2), AIP Conf.Proc. 1534 (2012) 5-14

**Awards and Honors**

|      |           |   |
|------|-----------|---|
| 2022 | UT Austin | Natural Sciences Council Faculty Service Award        |
| 2017 | UT Austin | Nominated for the Regents' Outstanding Teaching Award |
| 2016 | UT Austin | Nominated for the Regents' Outstanding Teaching Award |
| 2015 | UT Austin | College of Natural Sciences Teaching Excellence Award |

|           |            |   |
|-----------|------------|---|
| 2004      | Harvard U. | Gertrude and Maurice Goldhaber Prize      |
| 2003-2002 | Harvard U. | Harold T. White Teaching Award (2 times)  |
| 2001-2005 | Harvard U. | Derek Bok Center Teaching Award (8 times) |
| 2001      | Harvard U. | Packard Award                             |
| 2000      | Harvard U. | Van Vleck Scholarship                     |

## Service

### Departmental

|              |   |
|--------------|---|
| 2021-present | Teaching Excellence Committee                             |
| 2018-present | Outreach Committee  |
| 2018-present | Undergraduate Affairs Committee                           |
| 2021         | Mid-Probationary Review Committee: Zimmerman              |
| 2020         | Mid-Probationary Review Committee: Potter                 |
| 2018-2021    | Budget Council Advisory Committee                         |
| 2019-2020    | (Physics) Climate Change Committee                        |
| 2017-2018    | Physics Undergraduate Curriculum Review Committee (chair) |
| 2015-2018    | Outreach and Diversity Committee                          |
| 2012-2015    | Undergraduate Affairs Committee                           |
| 2011-2015    | Graduate Student Recruitment Committee                    |

### College

|      |   |
|------|---|
| 2015 | Physics Department Chair Search Committee |
|------|---|

## University

2013-2015 Faculty Council, and Committee on Responsibilities, Rights, and Welfare of Graduate Student Academic Employees

## State

2020-2023 Member at large in the executive committee of the American Physical Society Texas section

## Community

2019-present Faculty supervisor for the Physics Circus

2017-present Organizer for the Physics Dept. Saturday Morning Workshop

2013-present Co-organizer for the Physics Dept. Annual Open House Event

2011-present Outreach Lectures at UT Austin (Saturday Morning Physics Lectures, Dean's Scholars, Society of Physics Students)

2011-present Outreach Lectures in Austin area high schools (Crockett HS, Travis HS, LASA)

2011-present Participation in public science engagement events (Austin Film Society Science on Screen program, Schrodinger's Pint, Astronomy on Tap ATX)

Dec. 2018 Outreach Lecture on particle physics at the Southwest Research Institute

May 2014 Conducted Question&Answer Session for the movie "Particle Fever" at the Regal Arbor 8 Movie Theater

## Seminars/Lectures

Colloquia, invited seminars and lectures

11/2022 Brigham Young University (**invited seminar**): "Stepped Partially Acoustic Dark Matter" (Provo, UT)

- 6/2020 Lawrence Berkeley National Laboratory (**invited seminar**): “Phenomenological aspects of dark matter with several generations” (remotely given)
- 7/2019 CTEQ School on QCD and Electroweak Phenomenology (**invited lecture**): “Lecture on Beyond the Standard Model physics” (Pittsburgh, PA )
- 11/2018 Sam Houston State University (**invited seminar**): “Exploring Connections between Dark Matter and Flavor” (Huntsville, TX)
- 11/2017 University of California Irvine (**invited seminar**): “Exploring Connections between Dark Matter and Flavor” (Irvine, CA)
- 4/2017 Lawrence Berkeley National Laboratory (**invited seminar**): “Flavored Dark Matter and a Secret Asymmetry” (Berkeley, CA)
- 2/2017 University of Florida (**colloquium**): “Adding a Little Flavor to Dark Matter” (Gainesville, FL)
- 11/2016 TRIUMF (**invited seminar**): “Aspects of Lepton Flavored Dark Matter” (Vancouver, Canada)
- 8/2016 University of Texas at Austin (**colloquium**): “Adding a Little Flavor to Dark Matter” (Austin, TX)
- 3/2016 University of Pittsburgh (**invited seminar**): “Improved Mass Measurements Using Many-Body Phase Space” (Pittsburgh, PA)
- 3/2015 Brookhaven National Laboratory (**invited seminar**): “Flavored Dark Matter with Weak Scale Mediators” (Upton, NY)
- 2/2015 University of Oklahoma (**colloquium**): “Dark Matter: Vanilla vs. Flavored” (Norman, OK)
- 2/2015 University of Oklahoma and Oklahoma State University (**invited joint seminar**): “Aspects of Lepton-Flavored Dark Matter” (Norman, OK)
- 11/2014 University of Wisconsin-Madison (**invited seminar**): “Aspects of Lepton-Flavored Dark Matter” (Madison, WI)
- 7/2014 Perimeter Institute (**invited seminar**): “Improved Mass Measurements Using Many-Body Phase Space” (Waterloo, Ontario, Canada)

- 6/2014 Peking University (**invited seminar**): “Improved Mass Measurements Using Many-Body Phase Space” (Beijing, China)
- 6/2014 Center for Future High Energy Physics, Lectures (**invited lectures**): “The QCD Chiral Lagrangian and Vectorlike Confinement” (Beijing, China)
- 11/2013 Maryland Center for Fundamental Physics (**invited seminar**): “Improved Mass Measurements Using Many-Body Phase Space” (College Park, MD)
- 2/2013 Baylor University (**colloquium**): “Luring Naturalness from a Potential Hiding Place at the LHC” (Waco, TX)
- 4/2012 Fermi National Laboratory (**invited seminar**): “Two Topics in Dark Matter: Flavored Dark Matter and Limits on Gamma-Ray Lines from Unitarity” (Batavia, IL)
- 2/2012 Texas A&M University (**invited seminar**): “Two Topics in Dark Matter: Flavored Dark Matter and Limits on Gamma-Ray Lines from Unitarity” (College Station, TX)
- 2/2012 University of Michigan (**invited seminar**): “Two Topics in Dark Matter: Flavored Dark Matter and Limits on Gamma-Ray Lines from Unitarity” (Ann Arbor, MI)
- 10/2011 University of Chicago (**invited seminar**): “The Phenomenology of Flavored Dark Matter” (Chicago, IL)
- 6/2011 SLAC National Accelerator Laboratory (**invited seminar**): “Model-Independent Approaches in Looking for Dark Matter” (Menlo Park, CA)
- 3/2011 University of Texas at Austin (**colloquium**): “A Model-Independent Approach to Looking for Dark Matter” (Austin, TX)
- 3/2011 University of Texas at Austin (**invited seminar**): “Vectorlike Confinement and Its Signatures at the LHC” (Austin, TX)
- 2/2011 Boston University (**invited seminar**): “Model-Independent Approaches to Constraining Dark Matter” (Boston, MA)
- 12/2010 Heidelberg Institute for Theoretical Physics (**invited seminar**): “The Dark Matter - LHC Connection: A Few Model-Independent Statements” (Heidelberg, Germany)

- 11/2010 Brookhaven National Laboratory (**invited seminar**): “The Dark Matter - LHC Connection: A Few Model-Independent Statements” (Upton, NY)
- 4/2010 Princeton University (**invited seminar**): “Vectorlike Confinement and its Signatures at the LHC” (Princeton, NJ)
- 2/2010 Columbia University (**invited seminar**): “Vectorlike Confinement and its Signatures at the LHC” (New York, NY)
- 2/2010 Rutgers University High Energy Experimental Group (**invited seminar**): “Signatures of Vectorlike Confinement at the LHC” (Piscataway, NJ)
- 10/2009 University of California Berkeley (**invited seminar**): “Signatures of Vectorlike Confinement at the LHC” (Berkeley, CA)
- 9/2009 Cornell University (**invited seminar**): “Vectorlike Confinement at the LHC” (Ithaca, NY)
- 9/2009 Syracuse University (**invited seminar**): “Vectorlike Confinement at the LHC” (Syracuse, NY)
- 3/2009 SLAC National Accelerator Laboratory (**invited seminar**): “Vectorlike Confinement at the LHC” (Menlo Park, CA)
- 1/2009 Brookhaven National Laboratory (**invited seminar**): “Multijet Resonances at the Tevatron and the LHC” (Upton, NY)
- 12/2008 Harvard University (**invited seminar**): “Multijet Resonances at the Tevatron and the LHC” (Cambridge, MA)
- 12/2008 Boston University (**invited seminar**): “Multijet Resonances at the Tevatron and the LHC” (Boston, MA)
- 11/2008 Argonne National Laboratory (**invited seminar**): “Multijet Resonances at the Tevatron and the LHC” (Argonne, IL)
- 4/2008 Los Alamos National Laboratory (**invited seminar**): “Colored Resonances at the Tevatron: Phenomenology and Discovery” (Los Alamos, NM)
- 3/2008 California Institute of Technology (**invited seminar**): “Colored Resonances at the Tevatron: Phenomenology and Discovery” (Pasadena, CA)

- 10/2006 Princeton University (**invited seminar**): “Discovery and Measurement of sleptons, binos and winos with a Z-prime” (Princeton, NJ)
- 3/2006 Johns Hopkins University (**invited seminar**): “Astrophysical Constraints on Spontaneous Lorentz Violation” (Baltimore, MD)
- 12/2005 Yale University (**invited seminar**): “Astrophysical Constraints on Spontaneous Lorentz Violation” (New Haven, CT)
- 12/2005 Boston University (**invited seminar**): “Astrophysical Constraints on Spontaneous Lorentz Violation” (Boston, MA)
- 12/2005 University of California Davis (**invited seminar**): “LHC Olympics: A Theorist’s Adventures in Collider Physics” (Davis, CA)
- 11/2005 California Institute of Technology (**invited seminar**): “LHC Olympics: A Theorist’s Adventures in Collider Physics” (Pasadena, CA)

Conference and workshop presentations

- 10/2022 “Stepped Partially Acoustic Dark Matter” (**invited**), Theoretical Astroparticle and Cosmology Symposium in Texas 2022, Southern Methodist University (Dallas, TX)
- 5/2022 “Twin Quark Dark Matter” (**invited**), The Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2022, Mitchell Institute for Fundamental Physics and Astronomy (College Station, TX)
- 11/2021 “Twin Quark Dark Matter” (**invited**), Opening New Windows to the Universe Conference (Brookhaven Forum 2021), Brookhaven National Laboratory, remote talk
- 9/2020 “Optimizing tracklet-based searches for Higgsino-like dark matter” (**invited**), Snowmass Energy Frontier (Dark matter at colliders section), remote talk
- 9/2019 “Testing the Twin Higgs Mechanism in Collider Searches” (**invited**), International Workshop on the Circular Electron-Positron Collider, University of Chicago (Chicago, IL)

- 8/2019            “Probing the Twin Higgs Mechanism at Collider Experiments” (**invited**), Searching for New Physics Leaving No Stone Unturned Conference, University of Utah (Salt Lake City, UT)
- 5/2019            “Probing the Twin Higgs at Colliders”, 27th International Conference on Supersymmetry and Unification of Fundamental Interactions “SUSY 2019” (Corpus Christi, TX)
- 5/2019            “Astrophysical Aspects of Secretly Asymmetric Dark Matter”, The Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2019, Mitchell Institute for Fundamental Physics and Astronomy (College Station, TX)
- 5/2018            “A secret asymmetry from Flavored Dark Matter”, The Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2018, Mitchell Institute for Fundamental Physics and Astronomy (College Station, TX)
- 5/2018            “Testing the Twin Higgs mechanism at colliders”, PHENO 2018 Symposium, University of Pittsburgh (Pittsburgh, PA)
- 9/2017            “Exploring Connections between Dark Matter and Flavor” (**invited**), 10th International Workshop on Top Quark Physics (Braga, Portugal)
- 8/2017            “Flavored Dark Matter and a Secret Asymmetry”, 2017 Meeting of the APS Division of Particles and Fields (DPF 2017), Fermi National Accelerator Laboratory (Batavia, IL)
- 5/2017            "Multidimensional Phase Space Methods for Discovery and Mass Measurement", XI International Conference on Interconnections between Particle Physics and Cosmology (Corpus Christi, TX)
- 5/2016            “Improved Mass Measurements Using Many-Body Phase Space”, 2016 Mitchell Workshop on Collider and Dark Matter Physics, Mitchell Institute for Fundamental Physics and Astronomy (College Station, TX)
- 5/2016            “Diphotons from Vectorlike Confinement” (**invited**), Emerging New Physics at the LHC Workshop, University of Oregon (Eugene, OR)
- 5/2015            “Aspects of Lepton Flavored Dark Matter”, 2015 Mitchell Workshop on Collider and Dark Matter Physics, Mitchell Institute for Fundamental Physics and Astronomy (College Station, TX)

- 5/2015 “Aspects of Lepton Flavored Dark Matter”, PHENO 2015 Symposium, University of Pittsburgh (Pittsburgh, PA)
- 8/2013 “Multi-Lepton Final States in the Search for New Physics”, Implications of LHC Higgs-Like Signals Workshop, Aspen Center for Physics (Aspen, CO)
- 7/2012 “The Phenomenology of Flavored Dark Matter” (**invited**), Workshop on Dark Matter, Unification and Neutrino Physics: CETUP\* 2012, (Lead, SD)
- 5/2012 “Robust Limits on Gamma Ray Lines from Dark Matter Annihilation”, Dark Matter Signatures in the Gamma Ray Sky” Workshop (**co-organizer**), The University of Texas at Austin (Austin, TX)
- 7/2011 “The  $W+jj$  Anomaly and Proposed Explanations”, The First Year of the LHC Workshop, Kavli Institute for Theoretical Physics (Santa Barbara, CA)
- 5/2010 “Dark Matter as its own Antiparticle: Consequences for Indirect Detection and LHC Phenomenology”, Workshop on Advances in Cosmology, University of Maryland (College Park, MD)
- 4/2008 “Colored Resonances at the Tevatron: Phenomenology and Discovery”, PHENO 2008 Symposium, University of Pittsburgh (Pittsburgh, PA)
- 3/2008 “Colored Resonances at the Tevatron: Phenomenology and Discovery”, Physics of the Large Hadron Collider Conference, Kavli Institute for Theoretical Physics (Santa Barbara, CA)
- 6/2007 “Looking for New Physics with LHC-B”, Beyond the Standard Model at the Dawn of the LHC Era Conference, Eotvos University (Budapest, Hungary)
- 4/2006 “Looking for Sleptons in Unusual Places”, LHC Inverse Problem Workshop, University of Michigan (Ann Arbor, MI)
- 2/2006 “Solving the UW Blackbox”, LHC Olympics 2 Workshop, CERN (Geneva, Switzerland)

#### Participation in Collaborative Workshops and Conferences

- 9/2021 “Snowmass Day - Energy Frontier”, Snowmass Community Planning Exercise, remote conference

- 8/2021 “Novel Hidden Sectors: from Colliders to Cosmology”, Munich Institute for Astro and Particle Physics (MIAPP) remote workshop
- 10/2020 Snowmass Community Planning Meeting, remote conference
- 6/2020 “Physics Beyond Colliders meets theory”, CERN remote conference
- 5/2020 PHENO 2020 Symposium, University of Pittsburgh (remote conference)
- 8/2019 “The Energy Frontier Beyond LHC Run 2”, Aspen Center for Physics (Aspen, CO)
- 8/2018 "The Flavor of New Physics in Collisions", Aspen Center for Physics (Aspen, CO)
- 8/2017 "Reaching New Summits: The LHC at Full Strength", Aspen Center for Physics (Aspen, CO)
- 5/2017 “2017 Mitchell Workshop on Collider, Dark Matter and Neutrino Physics”, Mitchell Institute of Fundamental Physics and Astronomy (College Station, TX)
- 7/2016 “Understanding the First Results from LHC RunII” Workshop (**invited**), Mainz Institute for Theoretical Physics (Mainz, Germany)
- 6/2016 “The Many Faces of Naturalness” Workshop, Aspen Center for Physics (Aspen, CO)
- 8/2014 “Model Building in the LHC Era” Workshop, Aspen Center for Physics (Aspen, CO)
- 7/2013 “Exploring TeV Scale New Physics with LHC Data” Workshop, Kavli Institute for Theoretical Physics (Santa Barbara, CA)
- 7/2013 “LHC-The First Part of the Journey” Conference, Kavli Institute for Theoretical Physics (Santa Barbara, CA)
- 7/2012 “The LHC Shows the Way” Workshop, Aspen Center for Physics (Aspen, CO)
- 11/2010 “Dark Matter: Direct Detection and Theoretical Developments” Conference, Princeton Center for Theoretical Science (Princeton, NJ)

- 9/2010            “Workshop on Topologies for Early LHC Searches”, SLAC National Accelerator Laboratory (Menlo Park, CA)
- 4/2009            “MC4BSM 2009 & Missing Energy Signals at the LHC” Conference, University of California Davis (Davis, CA)
- 10/2008           “Forefronts of LHC Physics” Conference, Princeton Center for Theoretical Science (Princeton, NJ)
- 9/2008            “Beyond the Standard Model from the Tevatron to the LHC” Conference, Fermi National Laboratory (Batavia, IL)
- 7/2008            “LHC: Beyond the Standard Model Signals in a QCD Environment” Workshop, Aspen Center for Physics (Aspen, CO)
- 1/2008            “LHC New Physics Signatures” Conference, University of Michigan (Ann Arbor, MI)
- 11/2007           “Detecting the Unexpected (at the LHC)” Workshop, University of California Davis (Davis, CA)
- 3/2007            “Physics at the LHC: From Experiment to Theory” Conference, Princeton Center for Theoretical Physics (Princeton, NJ)
- 8/2006            “LHC Olympics 3” Workshop, Kavli Institute for Theoretical Physics (Santa Barbara, CA)

## **Professional Services**

Major Conference Program Committees

Organizer for the “Dark Pollica 2022” Workshop (June 2022, Pollica, Italy)

Organizer for the “27th International Conference on Supersymmetry and Unification of Fundamental Interactions” (SUSY 2019)  
(May 2019, Corpus Christi , TX)

Organizer for the “XIth International Conference on the Interconnection between Particle Physics and Cosmology" (PPC2017)  
(May 2017, Corpus Christi , TX)

## Workshops and Specialized Conference Program Committees

- 2011-present      Organizer for the HEP/Astro Results Forum (originally the LHC Results Forum): The HEP/Astro Results Forum is a remote seminar series on recent experimental/observational results of interest to the particle physics community (international).
- 2020-2023      Judge for student talks, Spring and Fall Meetings of the Texas Section of APS (multiple dates/locations)
- 2021      Member of Local Organizing Committee, Joint Fall 2021 Meeting of the Texas Sections of APS, AAPT and SPS Zone 13, (October 2021, University of Houston-Clear Lake)
- 2017      Organizer for the 2017 Tamura Symposium on Lepton and Baryon Symmetry (May 2017, Austin, TX)
- 2012      Co-organizer for the workshop “Dark Matter Signatures in the Gamma Ray Sky” (UT Austin)

## Journal, Conference, and Book Reviewing

Referee for Physical Review Letters (PRL), Physics Letters B, Physical Review D (PRD), Reviews of Modern Physics (RMP), Journal of High Energy Physics (JHEP), European Physical Journal C (EPJC)