

# Curriculum Vitae

Maxim Perelstein

Address: LEPP/Department of Physics  
436 Physical Sciences Building  
Cornell University  
Ithaca NY 14853,  
USA  
Telephone: (607) 255-4118 Fax: (607) 254-4552  
E-mail: mp325@cornell.edu

## Educational Background:

- Stanford University, Ph. D. in Physics, September, 2000.
- University of California at Los Angeles, M. S. in Physics, June, 1997.
- Moscow Institute for Physics and Technology, B. S. in Physics, June, 1995.

## Professional Experience:

- Professor, Department of Physics, Cornell University, July 2015 - present.
- Associate Professor, Department of Physics, Cornell University, July 2009 - June 2015.
- Assistant Professor, Department of Physics, Cornell University, September 2003 - June 2009.
- Postdoctoral Fellow, Physics Division, Lawrence Berkeley National Laboratory, September 2000 - August 2003.

## Honors and Awards:

1. Simons Fellow in Theoretical Physics, 2016-17.
2. National Science Foundation CAREER Award, 2009-14.

## Professional Publications

### a). Refereed Papers:

1. 750 GeV Di-photon Excess and Strongly First-Order Electroweak Phase Transition (with Y. D. Tsai), arXiv:1603.04488 [hep-ph], *Phys. Rev. D* **94**, no. 1, 015033 (2016).

2. Elastically Decoupling Dark Matter (with E. Kuflik, N. Rey-Le Lorier and Y. D. Tsai), arXiv:1512.04545 [hep-ph], *Phys. Rev. Lett.* **116**, no. 22, 221302 (2016).
3. Stop-Catalyzed Baryogenesis Beyond the MSSM (with A. Katz, M. J. Ramsey-Musolf and P. Winslow), arXiv:1509.02934 [hep-ph], *Phys. Rev. D* **92**, 095019 (2015).
4. Odd Top Partners at the LHC (with A. Anandakrishnan, J. H. Collins, M. Farina, and E. Kuflik), arXiv:1506.05130 [hep-ph], *Phys. Rev. D* **93**, 075009 (2016).
5. Playing Tag with ANN: Boosted Top Identification with Pattern Recognition (with L. G. Almeida, M. Backovic, M. Cliche, and S. J. Lee), arXiv:1501.05968 [hep-ph], *JHEP* **1507**, 086 (2015).
6. Precision Higgsstrahlung as a Probe of New Physics (with N. Craig, M. Farina, and M. McCullough), arXiv:1411.0676 [hep-ph], *JHEP* **1503**, 146 (2015).
7. Spin-One Top Partner: Phenomenology (with J. H. Collins, B. Jain and N. Rey-Le Lorier), arXiv:1406.1221 [hep-ph], *JHEP* **1408**, 022 (2014).
8. Higgs Couplings and Electroweak Phase Transition (with A. Katz), arXiv:1401.1827 [hep-ph], *JHEP* **1407**, 108 (2014).
9. Higgs Couplings and Naturalness in  $\lambda$ -SUSY (with M. Farina and B. Shakya), arXiv:1310.0459 [hep-ph], *JHEP* **1404**, 108 (2014).
10. Higgs Couplings and Naturalness (with M. Farina and N. Rey-Le Lorier), arXiv:1305.6068 [hep-ph], *Phys. Rev. D* **90**, 015014 (2014).
11. The Same-Sign Dilepton Signature of RPV/MFV SUSY (with J. Berger, M. Saelim and P. Tanedo), arXiv:1302.2146 [hep-ph], *JHEP* **1304**, 077 (2013).
12. Dark Matter Search at a Linear Collider: Effective Operator Approach (with Y. J. Chae), arXiv:1211.4008 [hep-ph], *JHEP* **1305**, 138 (2013).
13. XENON100 Implications for Naturalness in the MSSM, NMSSM and lambda-SUSY (with B. Shakya), arXiv:1208.0833 [hep-ph], *Phys. Rev. D* **88**, 075003 (2013).
14. A Fermionic Top Partner: Naturalness and the LHC (with J. Berger and J. Hubisz), arXiv:1205.0013 [hep-ph], *JHEP* **1207**, 016 (2012).
15. Simplified Models for LHC New Physics Searches (with D. Alves *et al.*), arXiv:1105.2838 [hep-ph], *J. Phys. G* **39**, 105005 (2012).
16. Fine-Tuning Implications of Direct Dark Matter Searches in the MSSM (with B. Shakya), arXiv:1107.5048 [hep-ph], *JHEP* **1110**, 142 (2011).
17. Four Boosted Tops from a Regge Gluon (with A. Spray), arXiv:1106.2171 [hep-ph], *JHEP* **1109**, 008 (2011).

18. T-Quarks at the Large Hadron Collider: 2010-12 (with J. Shao), arXiv:1103.3014 [hep-ph], *Phys. Lett. B* **704**, 510 (2011).
19. Antiprotons from Dark Matter: Effects of a Position-Dependent Diffusion Coefficient (with B. Shakya), arXiv:1012.3772 [astro-ph.HE], *Phys. Rev. D.* **83**, 123508 (2011).
20. Dark Matter Identification with Gamma Rays from Dwarf Galaxies (with B. Shakya), arXiv:1007.0018 [astro-ph.HE], *JCAP* **1010**, 016 (2010).
21. SUSY-Yukawa Sum Rule at the LHC (with M. Blanke and D. Curtin), arXiv:1004.5350 [hep-ph], *Phys. Rev. D.***82**, 035020 (2010).
22. Topological Interactions in the Higgsless Model at the LHC (with Y.-H. Qi), arXiv:1003.5725 [hep-ph], *Phys. Rev. D.***82**, 015004 (2009).
23. Remarks on Calculation of Positron Fluxes from Galactic Dark Matter (with B. Shakya), arXiv:1002.4588 [astro-ph.HE], *Phys. Rev. D.***82**, 043505 (2010).
24. Tensor Reggeons from Warped Space at the LHC (with A. Spray), arXiv:0907.3496 [hep-ph], *JHEP* **0910**, 096 (2009).
25. Shedding Light on the Dark Sector with Direct WIMP Production (with P. Konar, K. Kong, and K. T. Matchev), arXiv:0902.2000 [hep-ph], *New J. Phys.* **11**, 105004 (2009).
26. Model Discrimination with the CMS Detector: a Case Study (with G. Hallenbeck, C. Spethmann, J. Thom and J. Vaughan), arXiv:0812.3135 [hep-ph], *Phys. Rev. D.* **79**, 075024 (2009).
27. Polarized Tops from Stop Decays at the LHC (with A. Weiler), arXiv:0811.1024 [hep-ph], *JHEP* **0903**, 141 (2009).
28. A Weakly Coupled Ultraviolet Completion of the Littlest Higgs with T-parity (with C. Csaki, J. Heinonen and C. Spethmann), arXiv:0804.0622 [hep-ph], *Phys. Rev. D.* **79**, 035014 (2009).
29. Higgs Self-Coupling as a Probe of Electroweak Phase Transition (with A. Noble), arXiv:0711.3018 [hep-ph], *Phys. Rev. D* **78**, 063518 (2008).
30. Testing Gluino Spin with Three-Body Decays (with C. Csaki and J. Heinonen), arXiv:0707.0014 [hep-ph], *JHEP* **0710**, 107 (2007).
31. A Collider Signature of the Supersymmetric Golden Region (with C. Spethmann), hep-ph/0702038, *JHEP* **0704**, 070 (2007).
32. Indirect Detection of Little Higgs Dark Matter (with A. Spray), hep-ph/0610357, *Phys. Rev. D* **75**, 083519 (2007).

33. Collider Signature of T-quarks (with M. Carena, J. Hubisz and P. Verdier), hep-ph/0610156, *Phys. Rev. D* **75**, 091701 (2007).
34. Little Higgs Dark Matter (with A. Birkedal, A. Noble and A. Spray), hep-ph/0603077, *Phys. Rev. D* **74**, 035002 (2006).
35. Little Higgs Models and Their Phenomenology (invited review article), hep-ph/0512128, *Prog. Nucl. Part. Phys.* **58**, 247 (2007).
36. Electroweak Precision Constraints on the Littlest Higgs Model with T Parity (with J. Hubisz, P. Meade and A. Noble), hep-ph/0506042, *JHEP* **0601**, 135 (2006).
37. Collider Phenomenology of the Higgsless Models (with A. Birkedal and K. Matchev), hep-ph/0412278, *Phys. Rev. Lett.* **94**, 191803 (2005).
38. Gauge-Assisted Technicolor?, hep-ph/0408072, *JHEP* **0410**, 010 (2004).
39. Late Time Neutrino Masses, the LSND Experiment and the Cosmic Microwave Background (with Z. Chacko, L. Hall and S. Oliver), hep-ph/0405067, *Phys. Rev. Lett.* **94**, 111801 (2005).
40. Dark Matter at Colliders: A Model-Independent Approach (with A. Birkedal and K. Matchev), hep-ph/0403004, *Phys. Rev.* **D70**, 077701 (2004).
41. Top Quarks and Electroweak Symmetry Breaking in Little Higgs Models (with M. Pospelov and A. Pierce), hep-ph/0310039, *Phys. Rev.* **D69**, 075002 (2004).
42. Collider Tests of the Little Higgs Model (with G. Burdman and A. Pierce), hep-ph/0212228, *Phys. Rev. Lett.* **90**, 241802 (2003).
43. Preheating in Supersymmetric Theories (with Z. Chacko and H. Murayama), hep-ph/0211369, *Phys. Rev.* **D68**, 063515 (2003).
44. The Weak Mixing Angle From TeV Scale Quark-Lepton Unification (with Z. Chacko and L. Hall), hep-ph/0210149, *JHEP* **0301**, 001 (2003).
45. Domain Walls as Dark Energy (with A. Friedland and H. Murayama), astro-ph/0205520, *Phys. Rev.* **D67**, 043519 (2003).
46. Fine Structure Constant Variation from a Late Phase Transition (with Z. Chacko and C. Grojean), hep-ph/0204142, *Phys. Lett.* **B565**, 169 (2003)
47. Constraints on Large Extra Dimensions from Neutrino Oscillation Experiments (with H. Davoudiasl and P. Langacker), hep-ph/0201128, *Phys. Rev.* **D65**, 105015 (2002).
48. TeV Strings and Collider Probes of Large Extra Dimensions (with S. Cullen and M. Pospelov), hep-ph/0001166, *Phys. Rev.* **D62**, 055012 (2000).

49. SN1987A Constraints on Large Compact Dimensions (with S. Cullen), hep-ph/9903422, *Phys. Rev. Lett.* **83**, 268 (1999).
50. Multileg One Loop Gravity Amplitudes from Gauge Theory (with Z. Bern, L. Dixon and J. Rozowsky), hep-th/9811140, *Nucl. Phys.* **B546**, 423 (1999).
51. Collider Signatures of New Large Space Dimensions (with E. Mirabelli and M. Peskin), hep-ph/9811337, *Phys. Rev. Lett.* **82**, 2236 (1999).
52. One Loop  $n$  Point Helicity Amplitudes in (Selfdual) Gravity (with Z. Bern, L. Dixon and J. Rozowsky), hep-th/9809160, *Phys. Lett.* **B444**, 273 (1998).
53. On the Relationship between Yang-Mills Theory and Gravity and Its Implication for Ultraviolet Divergences (with Z. Bern, D. Dunbar, L. Dixon and J. Rozowsky), hep-th/9802162, *Nucl. Phys.* **B530**, 401 (1998).
54. Neutralino Annihilation into Two Photons (with Z. Bern and P. Gondolo), hep-ph/9706538, *Phys. Lett.* **B411**, 86 (1997).

**b) Theses**

1. Topics in Theories of Quantum Gravity. Ph. D. Thesis, Stanford University, September 2000.

**c) Contributions to Proceedings**

1. Snowmass 2013 Top quark working group report (with K. Agashe *et al.*), arXiv:1311.2028 [hep-ph], contributed to Snowmass Community Summer Study 2013.
2. New Particles Working Group Report of the Snowmass 2013 Community Summer Study (with Y. Gershtein, M. Luty, *et al.*), arXiv:1311.0299 [hep-ex], contributed to Snowmass Community Summer Study 2013.
3. RPV SUSY with Same-Sign Dileptons at LHC-14 (with M. Saelim), arXiv:1309.7707 [hep-ph], contributed to Snowmass Community Summer Study 2013.
4. Physics Case for the ILC Project: Perspective from Beyond the Standard Model (with H. Baer, M. Berggren, *et al.*), arXiv:1307.5248 [hep-ph], contributed to Snowmass Community Summer Study 2013.
5. SUSY-Yukawa Sum Rule at the LHC and the ILC (with M. Saelim), arXiv:1201.5839 [hep-ph], in the proceedings of the 2011 International Workshop on Future Linear Colliders (LCWS11), Granada, Spain, September 26-30, 2011.
6. Comment on calculation of positron flux from galactic dark matter (with B. Shakya), PoS IDM **2010**, 003 (2011).

7. Dark Matter Identification using Gamma Rays from Dwarf Galaxies (with B. Shakya), arXiv:1012.4024 [astro-ph.HE], in the proceedings of the 8th International Workshop on Identification of Dark Matter (IDM 2010), July 26-30, 2010, Montpellier, France.
8. Introduction to Collider Physics, arXiv:1002.0274 [hep-ph], in the proceedings of the 2009 Theoretical Advanced Study Institute (TASI-09), Boulder, CO
9. Beyond the Standard Model at the Tevatron and the LHC, arXiv:0809.1843 [hep-ph], Invited talk at HCP2008: 19th Hadron Collision Physics Symposium 2008, Galena, Illinois, 27-31 May 2008.
10. The MSSM golden region and its collider signature (with C. Spethmann), arXiv:0710.4148 [hep-ph], in the proceedings of 15th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY07), Karlsruhe, Germany, 26 Jul - 1 Aug 2007.
11. 9th Workshop on High Energy Physics Phenomenology (WHEPP9) Collider Physics Working Group report (with B. C. Allanach *et al.*), *Pramana* **67**, 617 (2006).
12. Little Higgs Models and T Parity, contributed to the 9th Workshop on High Energy Physics Phenomenology (WHEPP9), *Pramana* **67**, 813 (2006).
13. Les Houches “Physics at TeV colliders 2005” Beyond the standard model working group: Summary report (with B. C. Allanach *et al.*), hep-ph/0602198.
14. Summary Report of the 2005 Snowmass working group on physics Beyond the Standard Model (with G. Kribs, N. Okada and S. Riemann), contributed to 2005 International Linear Collider Physics and Detector Workshop and 2nd ILC Accelerator Workshop.
15. Report of the 2005 Snowmass top/QCD working group (with A. Juste *et al.*), hep-ph/0601112.
16. Top Quark Properties in Little Higgs Models (with C. F. Berger and F. Petriello), hep-ph/0512053, contributed to 2005 International Linear Collider Physics and Detector Workshop and 2nd ILC Accelerator Workshop.
17. Phenomenology of Higgsless models at the LHC and the ILC (with A. Birkedal and K. T. Matchev), hep-ph/0508185, contributed to the proceedings of 2005 International Linear Collider Workshop (LCWS 2005).
18. Exploring New Physics through Contact Interactions in Lepton Pair Production at a Linear Collider (with G. Pasztor), hep-ph/0111471, contributed to APS/DPF/DPB Summer Study on the Future of Particle Physics (Snowmass 2001).
19. Extra Dimensions versus Supersymmetric Interpretation of Missing Energy Events at a Linear Collider (with S. Gopalakrishna and J. Wells), hep-ph/0110339, contributed to APS/DPF/DPB Summer Study on the Future of Particle Physics (Snowmass 2001).

20. Perturbative Relationships between QCD and Gravity and Some Implications (with Z. Bern, D. Dunbar, L. Dixon and J. Rozowsky), hep-th/9809163, in *Proceedings of the 3rd Workshop on Continuous Advances in QCD (QCD 98)* (April, 1998, Minneapolis, MN)

#### **d) Other Publications**

1. Implications of the 750 GeV gamma-gamma Resonance as a Case Study for the International Linear Collider (with K. Fujii *et al.*), arXiv:1607.03829 [hep-ph].
2. Physics at a 100 TeV  $pp$  collider: Higgs and EW symmetry breaking studies (with R. Contino *et al.*), arXiv:1606.09408 [hep-ph].
3. Physics Case for the International Linear Collider (with K. Fujii *et al.*), arXiv:1603.04488 [hep-ph].
4. The International Linear Collider Technical Design Report - Volume 2: Physics (with H. Baer, T. Barklow, *et al.*), arXiv:1306.6352 [hep-ph].
5. From Lagrangians to Events: Computer Tutorial at the MC4BSM-2012 Workshop (with S. Ask, N. D. Christensen, *et al.*), arXiv:1209.0297 [hep-ph].
6. Boosted Tops from Gluino Decays (with J. Berger, M. Saelim and A. Spray), arXiv:1111.6594 [hep-ph].
7. Robust Gamma Ray Signature of WIMP Dark Matter (with A. Birkedal, K. Matchev and A. Spray), hep-ph/0507194.

#### **Outside Research Funding (Current and Recent)**

1. Simons Fellowship in Theoretical Physics, \$115,213, 07/01/16-06/30/17.
2. Faculty Sponsor on the “Large Hadron Collider Theory Initiative (LHC-TI)” NSF postdoctoral fellowship (Yonit Hochberg), \$150,000, 09/01/16-08/31/18.
3. Co-PI on the “Elementary Particle Theory” group grant from the National Science Foundation (NSF PHY-1316222), 01/01/14-07/31/17, expected \$1,420,000.
4. Co-PI on the “Preliminary Study for a Dark Photon Search” grant from the National Science Foundation EAGER program (NSF PHY-1446993), 07/01/14-06/30/15, \$33,000.
5. Co-PI on the “Theoretical Particle Physics” group grant from the National Science Foundation (NSF PHY-0757868), 01/01/09-12/31/13, \$2,940,000.

6. NSF CAREER award “Theoretical Interpretation of the Large Hadron Collider Data”, PHY-0844667, 02/01/09-07/31/14, \$400,000.00

### **Invited Lectures**

#### **a). Conference/Workshop Presentations**

1. “ELDER Dark Matter”, 3rd NPKE (New Physics at Korea Institute) Workshop, Seoul, S. Korea, June 2016.
2. “Higgs Measurements at Future  $e^+e^-$  Colliders”, KITP Workshop on New Accelerators for the 21st Century, Santa Barbara CA, June 2016.
3. “Physics at the International Linear Collider”, PHENO 2016 Workshop, Pittsburgh PA, May 2016.
4. “Effective Field Theory for Higgsstrahlung”, HEFT 2015 Conference, Chicago IL, November 2015.
5. “Higgs Couplings and Electroweak Phase Transition”, ACFI Workshop on Probing Electroweak Phase Transition at a Future Proton-Proton Collider, Amherst MA, September 2015.
6. “Physics Topics for Run 2”, US-CMS Collaboration Meeting, Ithaca NY, May 2015.
7. “Future of High-Energy Physics and the ILC Project”, Asian Linear Collider Workshop (ALCW-2015), Tokyo, Japan, April 2015.
8. “Higgs Couplings and Electroweak Phase Transition”, BSM Higgs Workshop at Fermilab, Batavia IL, November 2014.
9. “Electroweak Production of New Physics”, Workshop on Exotic Physics with ATLAS 14 TeV LHC, Eilat, Israel, February 2014.
10. “Higgs Couplings and Naturalness”, Workshop on the Next Scale in Physics, Pittsburgh PA, November 2013.
11. “Questions for Particle Physics: 2015-2035”, Snowmass on the Pacific Workshop, Santa Barbara CA, May 2013 (concluding talk).
12. “Electroweak Naturalness in Light of the LHC Data”, Higgs Quo Vadis Workshop, Aspen CO, March 2013.
13. “Dark Matter: Colliders and Direct Detection”, LCWS-12 Conference, Arlington TX, October 2012.
14. “(No) Supersymmetry with  $5 \text{ fb}^{-1}$  at the LHC”, Brookhaven Workshop on SUSY at the LHC, May 2012 (opening talk).



15. “New Physics Searches with Boosted Tops”, NPKI Launching Workshop, Seoul, S. Korea, February 2012.
16. “LHC Implications for SUSY: Light Stops?” (panel presentation), Linear Collider Workshop, Granada, Spain, September 2011
17. “Dark Matter Searches and Fine-Tuning in Supersymmetry”, PACIFIC-2011 Workshop, Moorea, French Polynesia, September 2011
18. “Radiative Dark Matter Production in Electron-Positron Annihilation”, Workshop on Emerging Opportunities for the ILC, Eugene OR, March 2011
19. “Model Discrimination with Simple Processes at the LHC”, LHC-BSM workshop, Boston, June 2009
20. “Beyond the SM Models at the Tevatron and the LHC”, CIPANP 09, La Jolla, CA, May 2009
21. “Who Ordered the Stop?”, Princeton CTP Mini-Symposium, October 2008
22. “Non-SUSY WIMP Dark Matter Candidates”, Dark Matter at the Crossroads Workshop, DESY, Hamburg, October 2008
23. “LHC Signatures of the MSSM Golden Region”, Anticipating Physics at the LHC Conference, KITP, Santa Barbara, June 2008
24. “Beyond the SM Models at the Tevatron and the LHC”, 19th Hadron Collider Physics Symposium, Galena, IL, May 2008
25. “Beyond the SM Theory Overview”, 3rd Workshop on Monte Carlo Tools for Beyond the Standard Model Physics, CERN, Geneva, Switzerland, March 2008
26. “Collider Signature of the Supersymmetric Golden Region”, LHC New Physics Signatures Workshop, Ann Arbor, MI, January 2008
27. “Golden SUSY, Boiling Plasma, and Big Colliders”, IPMU Focus Week: Facing LHC Data Workshop, Tokyo, Japan, December 2007
28. “Non-SUSY WIMP Candidates”, ENTApP/CERN Dark Matter Workshop, Geneva, Switzerland, March 2007
29. “Physics Beyond the SM at the LHC and the ILC”, 6th KEK Topical Conference: Frontiers in Particle Physics and Cosmology, Tsukuba, Japan, February 2007
30. “Models of Electroweak Symmetry Breaking”, 2006 Aspen Winter Conference, Aspen, CO, February 2006

31. “New Ideas in Electroweak Symmetry Breaking and Their Experimental Tests”, WHEPP-9 Workshop, Bhubaneshwar, India, January 2006
32. “Light Sterile Neutrinos and Cosmology”, INFO2005 Workshop, Santa Fe, NM, July 2005
33. “Recent Ideas in Electroweak Symmetry Breaking”, Physics at TeV Colliders Workshop, Les Houches, France, May 2005
34. “Top Physics in Little Higgs Models”, MCTP Spring Symposium: The Top Quark, Ann Arbor, MI, April 2005
35. “Model-Independent Predictions for WIMP Searches”, Frontiers Beyond the Standard Model Workshop, Minneapolis, MN, October 2004

**b). Summer Schools and Other Pedagogical Lectures**

1. “Collider Physics”, MITP Summer School, Mainz, Germany, July 2016.
2. “Learning from the Higgs”, Physics colloquium at KAIST, Daejon, South Korea, May 2014.
3. “Electroweak Symmetry Breaking and Collider Physics”, 26th Spring School on Particles and Fields, Taipei, Taiwan, April 2013.
4. “Physics Beyond the Standard Model in the LHC Era”, XVII Brazilian Physical Society Summer School on Particles and Fields, Campos do Jordao, Brazil, January 2013.
5. “Collider Physics”, International School “Across the TeV Frontier with the LHC”, Cargese, France, August 2012.
6. “Collider Physics”, School on Strongly Coupled Physics Beyond the Standard Model, ICTP Trieste, Italy, January 2012.
7. “Collider Physics”, Maryland Lectureship in Fundamental Physics, November 2011.
8. “Physics Beyond the SM and LHC Searches”, Particle Phenomenology Ph. D. School, NBI, Copenhagen, Denmark, October 2011
9. “Theorist of the Week” lectures, LHC Physics Center at Fermilab, March 2010
10. “Introduction to Collider Physics”, Theoretical Advanced Study Institute TASI-09, Boulder, CO, June 2009
11. “New Physics at the Tevatron and the LHC”, YETI 09 Winter School, Durham, UK, January 2009.

12. “Dark Matter at the LHC”, Perimeter Summer School on Particle Physics, Cosmology, and Strings, Waterloo, ON, August 2007.

**c). Particle Physics Seminars**

1. 09/15 TRIUMF, Canada
2. 06/14 Perimeter Institute, Canada
3. 05/14 IHEP/CFHEP, China
4. 05/14 Peking U., China
5. 05/14 Tsinghua U., China
6. 04/14 Harvard
7. 05/13 New York U.
8. 09/11 Niels Bohr Institute, Copenhagen
9. 09/11 Berkeley
10. 04/11 SLAC
11. 04/11 MIT
12. 10/10 U of Maryland
13. 01/09 Cambridge, UK
14. 05/08 UC Irvine
15. 05/08 Caltech
16. 05/08 SLAC
17. 04/08 Wisconsin
18. 04/08 Boston U.
19. 04/08 Ohio State U.
20. 05/07 Syracuse
21. 02/07 Tokyo U., Japan
22. 12/06 Boston U.

23. 11/06 Stony Brook
24. 11/06 Yale
25. 10/06 Columbia
26. 04/06 Carleton U., Canada
27. 12/05 Harvard
28. 11/05 Berkeley
29. 06/05 UCLA
30. 05/05 Maryland
31. 04/05 BNL
32. 01/05 U. of Michigan
33. 12/04 U. of Florida
34. 10/04 Fermilab (astro)
35. 04/04 Syracuse
36. 05/03 Yale
37. 03/03 Northwestern
38. 02/03 Arizona
39. 02/03 Los Alamos
40. 02/03 Yale
41. 02/03 Columbia
42. 01/03 Cornell
43. 01/03 Berkeley
44. 11/02 U. of Oregon
45. 11/02 UC Davis
46. 10/02 Caltech
47. 03/02 Berkeley

48. 12/01 Orsay, France
49. 12/01 Saclay, France
50. 11/01 Washington
51. 10/01 SLAC
52. 10/00 Minnesota
53. 01/00 Princeton
54. 12/99 Berkeley
55. 11/99 Harvard
56. 03/98 SLAC

**Courses taught at Cornell:**

1. Physics 2218 (Waves and Thermal Physics), Spring 2015, 2016
2. Physics 3327 (Advanced Electricity and Magnetism), Fall 2012, 2013, 2014
3. Physics 7652 (Relativistic Quantum Field Theory II), Spring 2011, 2012, 2013, 2014
4. Physics 7661 (Collider Physics), Fall 2009, Fall 2015
5. Physics 4443 (Intermediate Quantum Mechanics), Spring 2009, Spring 2010
6. Physics 213 (Electricity, Magnetism and Thermal Physics), Spring 2007 (senior staff), Fall 2007, Fall 2008 (lecturer)
7. Physics 651 (Relativistic Quantum Field Theory I), Fall 2004, Fall 2005, Fall 2006, Fall 2011
8. Physics 116 (Mechanics and Special Relativity), Spring 2004, Spring 2005, Spring 2006
9. Physics 214 (Waves, Optics and Quantum Mechanics), Fall 2003 (senior staff)

### **Department, College and University Committees:**

1. Faculty Senate (alternate), 2015-16.
2. Physics Department Steering Committee (substituting for Csaba Csaki), Fall 2014.
3. Graduate Admissions Committee, 2008-10, 2013-present.
4. A&S College Agenda Committee, 2012 - 2015 (Chair, 2014-15).
5. Physics Dept. Library Liaison, Fall 2010 - Fall 2013.
6. University Appeals Panel, 2010 - 2015.
7. Advisor/Dissertation Committee Chair for Physics graduate students: Andrew Noble, Christian Spethmann, Andrew Spray, Bibhushan Shakya, Michael Saelim, Nicolas Rey-Le Lorier, Yu-Dai Tsai
8. Dissertation Committee Member for about 20 Physics graduate students, 2003-present
9. LEPP Faculty Search Committee, Spring 2012.
10. Bethe Lectures Committee, Fall 2010 - Spring 2011
11. LEPP Physical Sciences Building Space Allocation Committee, 2009-10
12. Accelerator Physics Faculty Search Committee, 2007
13. Graduate Curriculum Review Committee, 2005-06
14. Special Committee Chair (“Wise Person”) for about 10 Physics graduate students, 2004-05 and 2012-13.
15. Special Committee Member for about 25 Physics graduate students, 2003-present.

### **Outside Professional Activities:**

1. International Organizing Committee member, 10th workshop on Monte Carlo Tools for Physics Beyond the Standard Model, Beijing, China, July 2016.
2. Working Group Convener, Dark Sectors 2016 Workshop, Stanford CA, April 2016.
3. Parallel Session Convener, LCWS-15 Workshop, Whistler BC, November 2015.
4. Organizing Committee, Workshop on Physics with Intense Electron Beams, Ithaca, June 2015

5. Organizing committee member, 9th workshop on Monte Carlo Tools for Physics Beyond the Standard Model, LPC/Fermilab, May 2015.
6. Panel member, Science review of MOLLER experiment (DOE/Office of Nuclear Physics), September 2014.
7. Linear Collider Collaboration (LCC) Physics Working Group member, May 2014 - present.
8. Advisory Committee member, 2014 Cargese International School for Theoretical Particle Physics, France, July 2014.
9. Organizing committee member, 8th workshop on Monte Carlo Tools for Physics Beyond the Standard Model, Daejeon, South Korea, May 2014.
10. Convener, “New Particles Decaying to Tops” working group, Snowmass Community Summer Study 2013.
11. Organizing committee member, 7th workshop on Monte Carlo Tools for Physics Beyond the Standard Model, Hamburg, Germany, April 2013.
12. Chair, organizing committee, 6th workshop on Monte Carlo Tools for Physics Beyond the Standard Model (MC4BSM6), Ithaca, NY, March 2012.
13. Session moderator, Perimeter Institute-ATLAS Workshop, York, ON, May 2012.
14. Organizing committee member, 5th workshop on Monte Carlo Tools for Physics Beyond the Standard Model (MC4BSM5), Copenhagen, April 2010.
15. Associate Member, DISCOVERY Center, Niels Bohr Institute, Copenhagen, Denmark, July 2009 - present.
16. Organizing committee member, 4th workshop on Monte Carlo Tools for Physics Beyond the Standard Model (MC4BSM4), Davis, CA, April 2009.
17. Parallel Session Convener, International Linear Collider Workshop, Chicago, November 2008.
18. Organizing committee member, 3rd workshop on Monte Carlo Tools for Physics Beyond the Standard Model (MC4BSM3), CERN, Geneva, Switzerland, March 2008.
19. Parallel session convener, 15th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY07), Karlsruhe, Germany, July 2007.
20. Executive member, organizing committee, Physics at the LHC: From Experiment to Theory workshop, Princeton, NJ, March 2007.

21. Program committee member and parallel session convener, 14th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY06), Irvine, CA, June 2006.
22. Co-chair, organizing committee, workshop on Monte Carlo Tools for Physics Beyond the Standard Model (MC4BSM), FNAL, Batavia, IL, March 2006.
23. Working group convener, 2005 ILC Physics and Detector Workshop and 2nd ILC Accelerator Workshop, Snowmass, CO, Aug 2005.
24. Grant proposal reviewer for the National Science Foundation, 2005-present.
25. Grant proposal reviewer for the Department of Energy, Office of Science, 2015
26. Grant proposal reviewer for foreign funding agencies (Canada, Portugal, Spain, UK): 2009-present.
27. Book reviewer for Cambridge University Press, 2009, 2011.
28. Referee for Physical Review Letters, Physical Review D, Nuclear Physics B, Journal of High Energy Physics, Journal of Cosmology and Astroparticle Physics, Physics Letters B, European Physical Journal C, Classical and Quantum Gravity, New Journal of Physics, Foundations of Physics; 1998-present.

**Outreach Activities:**

- Interviewed for a Nature News article, “LHC sees hint of boson heavier than Higgs”, 15 December 2015.
- Organizer and keynote speaker, CIPT Workshop “The Mystery of Dark Matter”, September 2013.
- Talk judge, Northeast Conference for Undergraduate Women in Physics, Cornell, January 2013.
- Presented a talk on the Higgs boson discovery for the Society of Physics Students (SPS) at Cornell, November 2012.
- Organizer and keynote speaker, CIPT Workshop on Particle Physics and the Higgs boson, October 2012.
- Participated in the E-CLOUD/CIPT workshop for high-school science teachers, October 2010.
- Participated in the LEPP summer workshop for elementary and middle-school science teachers, July 2010.



- Presented an electrostatics activity to 5-th graders in Horseheads, NY, May 2010.
- Conducted a workshop “Fantastics of Electrostatics” for Middle School science teachers, Cornell, March 2009.
- Presented a talk on “The Standard Model and Beyond” at the American Pyhysical Society/Americal Association of Physics Teachers Joint Topical Symposium, Cornell, April 2008.
- Mentor and Lecturer, LEPP Research Experience for Undergraduates (REU) program, 2005-2007.
- Contributed an article “To Test Theories of Physics” to *Connecting with Cornell* magazine, vol. 19, no. 2, p. 31 (2006).
- Presented a talk on “Dark Matter and Dark Energy” at the QuarkNET program for Physics teachers, LBL, August 2003.