

Patrick Meade

C.N. Yang Institute for Theoretical Physics
Stony Brook University
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- ACADEMIC POSITIONS
- ◇ **Professor**
C.N. Yang Institute for Theoretical Physics
Stony Brook University
January 2021-Current
 - ◇ **Associate Professor**
C.N. Yang Institute for Theoretical Physics
Stony Brook University
September 2015-Current
 - ◇ **Assistant Professor**
C.N. Yang Institute for Theoretical Physics
Stony Brook University
September 2009-September 2015
 - ◇ **Visiting Member**
School of Natural Sciences
Institute for Advanced Study
September 2009-January 2010
 - ◇ **Member (Postdoctoral Fellow)**
School of Natural Sciences
Institute for Advanced Study
September 2007-August 2009
 - ◇ **Postdoctoral Fellow**
Harvard University
August 2006-August 2007
- EDUCATION
- ◇ **Cornell University**, Ithaca, NY
2002–2006
PhD Theoretical Physics August 2006
Advisor: Csaba Csáki
 - ◇ **College of William & Mary**, Williamsburg, VA
1998–2002
BS Mathematics BS Physics
Advisor: Christopher Carone

PROFESSIONAL
HONORS

- NSF CAREER award

GRANTS
AWARDED

- senior investigator NSF grant “Theoretical Physics” PHY-1915093
- senior investigator NSF grant “Theoretical Physics” PHY-1620628
- PI NSF CAREER grant “Developing a Theoretical Understanding of the TeV Energy Scale from the LHC and Dark Matter ”, PHY-1056833

- co-PI NSF grant “Elementary particles at colliders and in astrophysics”, PHY-0653354

PROFESSIONAL
SERVICE

- Snowmass 2021 Theory Frontier Coordinator to Muon Collider Forum
- Snowmass 2021 Topical Convener: Higgs Boson as a portal to new physics
- Member of proposed REDTOP and MATHUSLA experiments
- contributor for HE-LHC, HL-LHC, European Strategy, FCC-ee/hh, CEPC, SPPS for various white/yellow papers, CDRs, working groups
- Referee for Physical Review, JHEP, NSF

PAPERS

1. “*Multi-Higgs Production Probes Higgs Flavor*”,
with D. Egana-Ugrinovic, S. Homiller
2101.04119 submitted to Phys.Rev. D
2. “*Light Scalars and the KOTO anomaly*”,
with D. Egana-Ugrinovic, S. Homiller
Phys.Rev.Lett. 124 (2020) 19, 191801
3. “*Higgs bosons with large couplings to light quarks* ”,
with D. Egana-Ugrinovic, S. Homiller
Phys.Rev. D100 (2019) no.11, 115041
4. “*Measurement of the Triple Higgs Coupling at a HE-LHC* ”,
with S. Homiller
JHEP 1903 (2019) 055
5. “*Aligned and Spontaneous Flavor Violation* ”,
with D. Egana-Ugrinovic, S. Homiller
Phys.Rev.Lett. 123 (2019) no.3, 031802
6. “*Unrestored Electroweak Symmetry* ”,
with H. Ramani
Phys.Rev.Lett. 122 (2019) no.4, 041802
7. “*Long-Lived Particles at the Energy Frontier: The MATHUSLA Physics Case* ”,
with D. Curtin et al (Editor)
Rept.Prog.Phys. 82 (2019) 11, 116201
8. “*Higgs-Precision Constraints on Colored Naturalness* ”,
with R.Essig, H.Ramani, and Y. Zhong
JHEP 1709 (2017) 085
9. “*Thermal Resummation and Phase Transitions* ”,
with D. Curtin, H. Ramani
Eur.Phys.J. C78 (2018) no.9, 787
10. “*Multiboson interactions at the LHC*”,
with D. Green, M. Pleier
Rev.Mod.Phys. 89 (2017) no.3, 035008
11. “*Singlet Scalar Resonances and the Diphoton Excess*”,
with S. McDermott, H. Ramani
Phys.Lett. B755 (2016) 353-357
12. “*Precision diboson measurements and the interplay of pT and jet-veto resummations*”,
with P. Jaiswal, H. Ramani
Phys.Rev. D93 (2016) no.9, 093007
13. “*Testing Electroweak Baryogenesis with Future Colliders*”,
with D. Curtin, C-T Yu.
JHEP 1411 (2014) 127

14. “*Transverse momentum resummation effects in W^+W^- measurements*”,
with H. Ramani, M. Zeng.
Phys.Rev. D90 (2014) 11, 114006
15. “*Natural SUSY in Plain Sight*”,
with D. Curtin, P. Tien.
Phys.Rev. D90 (2014) 11, 115012
16. “*Casting Light on BSM Physics with SM Standard Candles*”,
with D. Curtin, P. Jaiswal and P. Tien
JHEP 1308 (2013) 068
17. “*Charginos Hiding in Plain Sight*”,
with D. Curtin, and P. Jaiswal
Phys.Rev. D87 (2013) 031701
18. “*Excluding Electroweak Baryogenesis in the MSSM*”,
with D. Curtin, and P. Jaiswal
JHEP 1208 (2012) 005
19. “*Implications of a 125 GeV Higgs for the MSSM and Low-Scale SUSY Breaking*”,
with P. Draper, M. Reece, D. Shih
Phys.Rev. D85 (2012) 095007
20. “*The Status of GMSB After $1/f_b$ at the LHC*”,
with Y. Kats, M. Reece, D. Shih
JHEP 1202 (2012) 115.
21. “*Simplified Models for LHC New Physics Searches*”,
with D. Alves et al.
arXiv:1105.2838
22. “*Odd Tracks at Hadron Colliders*”,
with M. Papucci and T. Volansky
Phys. Rev. Lett. 109, 031801
23. “*Long-Lived Neutralino NLSPs*”,
with M. Reece, and D. Shih
JHEP 1010 (2010) 067
24. “*Prompt Decays of General Neutralino NLSPs at the Tevatron*”,
with M. Reece, and D. Shih
JHEP 1005 (2010) 105
25. “*Dark Matter Interpretations of the e^\pm Excesses after FERMI*”,
with S. Nussinov, M. Papucci, and T. Volansky
JHEP 1006 (2010) 029
26. “*Searches for Long Lived Neutral Particles*”,
with M. Papucci, A. Strumia and T. Volansky
Nucl.Phys. B831 (2010) 178-203
27. “*Dark Matter Sees The Light*”,
with M. Papucci and T. Volansky
JHEP 0912 (2009) 052
28. “*Exploring General Gauge Mediation*”,
with M. Buican, N. Seiberg and D. Shih
JHEP 0903 (2009) 016
29. “*General Gauge Mediation*”,
with N. Seiberg and D. Shih
Prog.Theor.Phys.Suppl. 177 (2009) 143-158

30. “*Black Holes and Quantum Gravity at the LHC*”,
with L. Randall.
JHEP 0805, 003 (2008)
31. “*BRIDGE: Branching Ratio Inquiry/Decay Generated Events*”,
with M. Reece.
hep-ph/0703031
32. “*Top Partners at the LHC: Spin and Mass Measurement*”,
with M. Reece.
Phys.Rev.D74:015010,2006
33. “*TASI Lectures on Electroweak Symmetry Breaking from Extra Dimensions*”,
with C. Csáki and J. Hubisz.
Proceedings of TASI 2004.
hep-ph/0510275
34. “*Electroweak Precision Constraints on the Littlest Higgs with T-parity*”,
with J. Hubisz, A. Noble, M. Perelstein.
JHEP 0601:135,2006
35. “*Phenomenology of the Littlest Higgs with T-parity*”,
with J. Hubisz.
Phys.Rev.D71:035016,2005
36. “*A Mixed Phase of SUSY Gauge Theories from a-maximization*”,
with C. Csáki and J. Terning.
JHEP 0404:040,2004
37. “*Electroweak Constraints on Little Higgs Models*”,
To appear in the Proceedings of SUSY 2003, held at the University of Arizona,
Tucson, AZ, 5-10 June 2003.
hep-ph/0402036
38. “*Variations of little Higgs models and their electroweak constraints*”,
with C. Csáki, J. Hubisz, G. D. Kribs, and J. Terning.
Phys.Rev.D68:035009,2003
39. “*Big corrections from a little Higgs*”,
with C. Csáki, J. Hubisz, G. D. Kribs, and J. Terning.
Phys.Rev.D67:115002,2003
40. “*Neutrino Oscillations through Extra Dimensions and Symmetries*”,
Senior Honors Thesis, College of William and Mary, May 2002.
41. “*Shells of Matrices in Indefinite Inner Products*”,
with V. Bolotnikov, C.Li, C. Mehl, L.Rodman.
Electronic Journal of Linear Algebra, 9(2002), 67-92
42. “*U(2)-like Flavor Symmetries and Approximate Bimaximal Neutrino Mixing*”,
with A. Aranda, C. Carone.
Phys.Rev.D65:013011, 2002
43. “*Research Problem: Indefinite Inner Product Normal Matrices*”,
with B.Lins, C. Mehl, L. Rodman.
Linear and Multilinear Algebra, 49(2001) no.3, 261-268
44. “*Polar Decompositions of indecomposable normal matrices in indefinite inner products: Explicit formulas and open problems*”,
with B.Lins, C. Mehl, and L.Rodman.
Preprint 2000-9
Fakultat fur Matematik, Technische Universitat Chemnitz, Germany, August 2000
45. “*Normal Matrices and Polar decompositions in Indefinite Inner Products*”,
with B.Lins, C. Mehl, L.Rodman.
Linear and Multilinear Algebra, 49(2001) no.1, 345-89

WORKSHOPS/
CONFERENCES
ORGANIZED

- “Reaching New Summits: The LHC at Full Strength ”, July-August 2017
Aspen Center for Physics
with R. Boughezal, M. Lisanti, M. Papucci, and M. Schwartz
- “SEARCH”, September 2016
Oxford University
with M. Papucci, I. Shipsey and R. Sundrum
- “SEARCH”, August 2013
Stony Brook University
with M. Papucci, and R. Sundrum
- “SEARCH”, March 2012
University of Maryland
with M. Papucci, and R. Sundrum
- “Year One of the LHC”, June-July 2011
Aspen Center for Physics
with M. Papucci, R. Sundrum, and J. Thaler

TALKS
GIVEN

- Invited colloquium, October 2019,
College of William and Mary
- Invited talk, Theory-Experiment Seminar, October 2019,
University of Pennsylvania
- Invited talk, LPC seminar, October 2019,
Fermilab
- Invited talk, Theory Seminar, May 2019,
University of Massachusetts
- Invited talk, Laboratory Wide Colloquium, December 2018,
Fermilab
- Invited talk, Theory Summary LCWS2018, October 2018,
UT Arlington
- Invited talk, “Beyond the Standard Model: Where do we go from here?”, August 2018,
GGI
- Invited talk, Pheno and Vino, March 2018,
Princeton University
- Invited talk, Theory Seminar, May 2017,
Caltech
- Invited talk, LCWS 2016, December 2016,
Morioka, Japan
- Invited talk, “New Physics Interpretations at the LHC”, April 2016
Argonne National Lab
- Invited talk, “Preparing for the High-Luminosity Run of the LHC”, June 2015
Perimeter Institute
- Invited talk, Theory Seminar, March 2015
Yale University
- Invited talk, Theory Seminar, November 2014
MIT
- Invited talk, ATLAS multiboson workshop - October 2014
BNL

- Invited talk, Next steps in the Energy Frontier - Hadron Collider, August 2014
Fermilab
- Invited talk, 2nd CFHEP Symposium on circular collider physics, August 2014
CFHEP, Beijing
- Invited talk, Johns Hopkins Workshop in Heidelberg, July 2014
Heidelberg, Germany
- Theory Seminar, June 2014
CERN
- Invited talk LHCP conference, June 2014
Columbia University
- Invited talk, MC4BSM workshop, May 2014
Korea
- Invited talk, Exotic Physics with ATLAS at 14 TeV, February 2014
Eilat, Israel
- High Energy Physics Seminar, December 2013
University of Pennsylvania
- Invited Lecture, “Current Themes in High Energy Physics and Cosmology”,
August 2013, Niels Bohr Summer Institute
- Theory Seminar, June 2013
Tel Aviv University
- Theory Seminar, March 2013
Johns Hopkins University
- Theory Seminar, March 2013
University of Maryland
- Theory Seminar, December 2012
Perimeter Institute
- Invited talk for ATLAS diboson workshop, December 2012
BNL
- Plenary Talk, “International Workshop on Future Linear Colliders”, October 2012
University of Texas at Arlington
- Invited talk, “The Higgs Boson and the Next Discovery”, October 2012
University of Pittsburgh
- Invited talk, “Frontiers Beyond the Standard Model III”, October 2012
University of Minnesota
- Informal theory seminar CERN theory group, September 2012
CERN
- Invited talk ATLAS SUSY group, July 2012
CERN (EVO)
- Rutgers University Theory Seminar, May 2012
Rutgers University
- Invited Talk, PCTS April 2012
Princeton University
- Syracuse University Theory Seminar, April 2012
Syracuse University
- Invited Talk, Implications of LHC results for TeV-scale Physics, March 2012
CERN (EVO)

- BSM Theory Summary, MC4BSM 2012, March 2012
Cornell University
- Joint Johns Hopkins/University of Maryland HEP seminar, December 2011
University of Maryland
- Invited Talk, Implications of LHC results for TeV-scale Physics, December 2011
CERN
- High Energy Theory Seminar, October 2011
University of Michigan
- Invited talk ATLAS SUSY group, November 2011
CERN (EVO)
- High Energy Theory Seminar, October 2011
Harvard University
- High Energy Theory Seminar, May 2011
SLAC
- High Energy Theory Seminar, March 2011
University of Maryland
- High Energy Theory Seminar, January 2011
University of Chicago
- Invited Talk, October 2010
BNL LHC-TI meeting
- “Roads Forward: Particle Physics in the LHC Era”, June 2010
2010 RHIC & AGS Annual Users’ Meeting, BNL
- Plenary Talk, May 2009
PHENO 2009
- Conference Talk, February 2009
LHC International Science Forum, Heidelberg, Germany
- High Energy Theory Seminar, February 2009
University of Minnesota
- High Energy Theory Seminar, January 2009
UC Irvine
- High Energy Theory Seminar, October 2008
Brookhaven National Laboratory
- High Energy Theory Seminar, April 2008
University of Arizona
- High Energy Theory Seminar, April 2008
University of Texas, Austin
- KITP LHC Workshop, March 2008
KITP Santa Barbara
- LHC Focus Week, December 2008
IPMU, Japan
- High Energy Theory Seminar, December 2007
Rutgers University
- High Energy Theory Seminar, November 2007
University of California - Berkeley
- High Energy Theory Seminar, October 2007
Johns Hopkins University

- Eotvos-Cornell Summer Workshop, June 2007
“BRIDGE”
Eotvos University, Budapest
- Edinburgh Ultra-Mini Workshop, March 2007
“Model vs Model Degeneracies??”
University of Edinburgh
- LHC Olympics/MC4BSM, March 2007
“Generation and Solution of the Cornell/Harvard Black Box”
Princeton University
- LHC Olympics, August 2006
“BSM Event Generators: Status, Prospects and a New Black Box”
KITP Santa Barbara
- Aspen Workshop, August 2006
“Top Partners at the LHC”
Aspen Center for Physics
- High Energy Physics Seminar, April 2006
“A model independent approach to LHC phenomenology”
UC Davis
- High Energy Physics Seminar, March 2006
“A model independent approach to LHC phenomenology”
University of Toronto
- Phenomenology seminar, February 2006
“A model independent approach to LHC phenomenology”
University of Florida
- LHC Olympics, February 2006
“A model independent approach to LHC phenomenology”
CERN
- Phenomenology seminar, December 2005
“A model dependent and independent look at LHC phenomenology”
Princeton University
- Phenomenology seminar, November 2005
“A model dependent and independent look at LHC phenomenology”
Harvard University
- Particle theory seminar, November 2005
“A model dependent and independent look at LHC phenomenology”
Boston University
- Particle theory seminar, November 2005
“A model dependent and independent look at LHC phenomenology”
University of Washington
- SUSY 2005, July 2005
“Little Higgs and T-parity: a reason experimentalists
need to know more than the MSSM”
IPPP Durham, UK
- PHENO 05, May 2005
“Phenomenology of the Littlest Higgs with T-parity”
University of Wisconsin, Madison.
- Syracuse-Cornell Collaboration Theory Meeting, January 2005
“Phenomenology of the Littlest Higgs with T-parity”
Cornell University

- TASI student seminar, June 2004
“Evidence for a new phase of SUSY gauge theory”
University of Colorado at Boulder
- Particle Theory Journal Club, March 2004
“Evidence for a new phase of SUSY gauge theory”
Cornell University
- Syracuse-Cornell Collaboration Theory Meeting, December 2003
“Towards a Classification of SUSY gauge theories”
Cornell University
- Particle Theory Seminar, August 2003
“Electroweak Constraints on Little Higgs Models”
College of William & Mary
- SUSY 2003, June 2003
“Electroweak Constraints on Little Higgs Models”
Tucson, AZ
- Particle Theory Journal Club, November 2002
“Electroweak Constraints on Little Higgs Models”
Cornell University
- SES-APS Annual Meeting, November 2001
“U(2)-like Flavor Symmetries and Approximate Bimaximal Neutrino Mixing”
UVA
- 2001 Verizon Undergraduate Research Symposium, September 2001
“U(2)-like Flavor Symmetries and Approximate Bimaximal Neutrino Mixing”
College of William & Mary
- Spring 2001 MAA Section Meeting MD-DC-VA, April 2001
“Polar Decompositions with respect to Indefinite Inner Products”
VMI
- 2000 Verizon Undergraduate Research Symposium, September 2000
“Polar Decompositions with respect to Indefinite Inner Products”
College of William & Mary
- 1998 NASA URC-TC, May 1998
“The effectiveness of Secondary School Students in Variable Star Analysis”
Huntsville, Alabama

INVITED
LECTURE
SERIES

- “International Symposium on Physics Beyond the Standard Model”
National Centre for Physics October 2014
Islamabad, Pakistan
- Lectures on “Physics Beyond the Standard Model”
- “BCVSPIN-MSPF-MITCHELL Joint School”
BCVSPIN-DPYC 2014
Colima, Mexico
- Lectures on “Physics Beyond the Standard Model”
- “LHC Physics”
Prospects in Theoretical Physics (PITP) 2013
IAS, Princeton, NJ
- Lectures on “New Physics - Electroweak Production”
- Nordic Winter School on Particle Physics and Cosmology 2013
Skeikampen, Norway
- Lectures on “Higgs physics and Beyond the Standard Model”

Patrick Meade

- “Physics of the Large and the Small”
Theoretical Advanced Studies Institute (TASI) 2009
University of Colorado at Boulder
 - Lectures on General Gauge Mediation