

## Associate Professor Jay M. Hubisz

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- CONTACT INFORMATION** Department of Physics *Voice:* +1 315 443 2653  
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Syracuse, NY 13244 USA *E-mail:* jhubisz@physics.syr.edu
- POSITIONS** Associate Professor, Syracuse University, May 2014 - Present  
Assistant Professor, Syracuse University, Aug 2008 - May 2014  
Director's Postdoctoral Fellowship - Argonne National Laboratory, Jan 2008 - Aug 2008  
Postdoctoral Researcher - Fermi National Accelerator Laboratory, Sep 2005 - Dec 2007
- RESEARCH INTERESTS** Extensions of the Standard Model of particle physics: electroweak symmetry breaking, extra dimensions, little Higgs models, supersymmetry, composite Higgs models, conformal symmetry, AdS/CFT correspondence, particle cosmology, dark matter, precision electroweak constraints
- EDUCATION** **Cornell University**, Ithaca, New York USA  
Ph.D. in theoretical particle physics awarded January, 2006  
• Advisor: Csaba Csáki  
**California Institute of Technology**, Pasadena, California USA  
B.S., Physics, May, 2001
- TEACHING EXPERIENCE**  
• Spring 2009 - Co-taught Phy 250 (Physics Journal Workshop) at S.U.  
• Spring 2009 - Co-taught Phy 212 (General Physics II) at S.U.  
• Fall 2009 - Primary instructor Phy 212 (General Physics II) at S.U. - Enrollment: 289  
• Fall 2009 - Participated in AAPT (American Association of Physics Teachers) New Faculty Workshop  
• Spring 2010 - Primary instructor for Phy 885 (Quantum Field Theory) at S.U. - Enrollment: 12  
• Fall 2010 - Primary instructor for two sessions of Phy 212 (General Physics II) at S.U. - Total enrollment: 322  
• Spring 2011 - Primary instructor for Phy 885 (Quantum Field Theory) at S.U. - Enrollment: 7  
• Spring 2012 - Primary instructor for Phy 885 (Quantum Field Theory) at S.U. - Enrollment: 4  
• Fall 2012 - Primary instructor for Phy 523 (Advanced Classical Mechanics) at S.U. - Enrollment: 4  
• Spring 2013 - Co-taught Phy 212 (General Physics II) at S.U. - Enrollment: 149
- OUTREACH**  
• Contributor to "Symmetry" magazine - "Explain it in 60 Seconds" - March 2006  
• Contributor to "The Physics Teacher" magazine - book review of "The Theory of Almost Everything: The Standard Model, the Unsung Triumph of Modern Physics" by Robert Oerter - September 2006  
• Contributor to "The Physics Teacher" magazine - book review: "Quantum Gravity sans Gravitax: Complete Idiot's Guide to String Theory": George Musser - Feb 2009  
• Contributor to "The Physics Teacher" magazine - book review: "Massive": Ian Sample - Jan 2013
- COMMITTEES**  
• Co-organizer of Monte Carlo for Beyond the Standard Model (MC4BSM) workshop - Fermi National Accelerator Laboratory, March 2006.

- Co-organizer of Monte Carlo for Beyond the Standard Model (MC4BSM) workshop - Princeton University, March 2007.
- Organizer of Syracuse Fall Harvest Ultra-Mini Workshop - “Dawn at the LHC” - Syracuse University, October 2008.
- Faculty Search Committee 2008-2009 - Syracuse University Cosmology and Astroparticle physics hire.
- Colloquium chair 2009-2010 - co-chair of Syracuse University Physics colloquium series
- Graduate admissions - 2010-2011 - served on the physics graduate admissions committee.
- Faculty Search Committee 2011-2012 - Syracuse University High Energy Particle Physics hire.
- Co-organizer of Monte Carlo for Beyond the Standard Model (MC4BSM) workshop - Cornell University, March 2012.
- Contact person for ”New Physics In Top” subgroup for Snowmass - 2013

PUBLICATIONS AND  
PRE-PRINTS

Csaba Csaki, Jay Hubisz, Graham D. Kribs, Patrick Meade, John Terning, Big corrections from a little Higgs model, Phys. Rev. D **67**, 115002 (2003) [arXiv:hep-ph 0211124]

Csaba Csaki, Jay Hubisz, Graham D. Kribs, Patrick Meade, John Terning, Variations of little Higgs models and their electroweak constraints, Phys. Rev. D **68**, 035009 (2003) [arXiv:hep-ph 0303236]

Csaba Csaki, Christophe Grojean, Jay Hubisz, Yuri Shirman, John Terning, Fermions on an interval: quark and lepton masses without a Higgs, Phys. Rev. D **70**, 015012 (2004) [arXiv:hep-ph 0310355]

Jay Hubisz, Patrick Meade, Phenomenology of the lightest Higgs with T-parity, Phys.Rev.D **71**,035016 (2005) [arXiv:hep-ph 0411264]

Jay Hubisz, Patrick Meade, Andrew Noble, Maxim Perelstein, Electroweak precision constraints on the lightest Higgs model with T parity, JHEP 0601:135 (2006) [arXiv:hep-ph 0506042]

Csaba Csaki, Jay Hubisz, Patrick Meade, TASI lectures on electroweak symmetry breaking from extra dimensions, arXiv:hep-ph 0510275

Jay Hubisz, Seung J. Lee, Gil Paz, The Flavor of a little Higgs with T-parity, JHEP 0606:041 (2006) [arXiv:hep-ph 0512169]

Jay Hubisz, Recent developments in electroweak symmetry breaking: Little Higgs and Higgsless models, Ph.D. thesis (Cornell University)

V. Buescher, M. Carena, B. Dobrescu, S. Mrenna, D. Rainwater and M. Schmitt, Tevatron-for-LHC report: Preparations for discoveries, arXiv:hep-ph/0608322.

E. Accomando *et al.*, Workshop on CP studies and non-standard Higgs physics, arXiv:hep-ph/0608079.

Marcela Carena, Jay Hubisz, Maxim Perelstein, Patrice Verdier, Collider Signature of T-quarks, Phys.Rev.D75:091701,2007 [arXiv:hep-ph/0610156].

Csaba Csáki, Jay Hubisz and Seung Joon Lee, Radion phenomenology in realistic warped space models,” Phys. Rev. D **76**, 125015 (2007) [arXiv:0705.3844 [hep-ph]].

Jay Hubisz, Joseph Lykken, Maurizio Pierini and Maria Spiropulu, Missing energy look-alikes with  $100 \text{ pb}^{-1}$  at the LHC, Phys. Rev. D **78**, 075008 (2008) [arXiv:0805.2398 [hep-ph]].

Csaba Csáki, Johannes Heinonen, Jay Hubisz, and Yuri Shirman, Odd Decays from Even Anomalies: Signals of Gauge Mediation without SUSY. Phys. Rev. D **79**, 105016, (2009) [arXiv:0901.2933 [hep-ph]]

D. Bunk and J. Hubisz, Revealing Randall Sundrum Hidden Valleys Phys. Rev. D **81**, 125009 (2010) [arXiv:1002.3160 [hep-ph]].

C. Csaki, J. Heinonen, J. Hubisz, S. C. Park and J. Shu, 5D UED: Flat and Flavorless, JHEP 1101, 089 (2011) [arXiv:1007.0025 [hep-ph]].

J. Hubisz and J. Shao, “Mass Measurement in Boosted Decay Chains with Missing Energy,” Phys. Rev. D **84**, 035031 (2011) [arXiv:1009.1148 [hep-ph]].

B. Bellazzini, C. Csaki, J. Hubisz and J. Shao, “Discovering a Higgs boson decaying to four jets in supersymmetric cascade decays,” Phys. Rev. D **83**, 095018 (2011) [arXiv:1012.1316 [hep-ph]].

D. Alves *et al.* [LHC New Physics Working Group Collaboration], Simplified Models for LHC New Physics Searches, arXiv:1105.2838 [hep-ph].

B. Bellazzini, C. Csaki, J. Hubisz, J. Shao and P. Tanedo, Goldstone Fermion Dark Matter, JHEP 1109, 035 (2011) [arXiv:1106.2162 [hep-ph]].

D. Bunk, J. Hubisz, J. Shao and P. Tanedo, A Top Seesaw on a 5D Playground, arXiv:1111.3951 Under consideration at PRD [hep-ph].

S. Catterall, R. Galvez, J. Hubisz, D. Mehta and A. Veernala, Non-abelian gauged NJL models on the lattice, Phys. Rev. D **86**, 034502 (2012) [arXiv:1112.1855 [hep-lat]].

J. Berger, J. Hubisz and M. Perelstein, A Fermionic Top Partner: Naturalness and the LHC, JHEP 1207, 016 (2012) [arXiv:1205.0013 [hep-ph]].

B. Bellazzini, C. Csaki, J. Hubisz, J. Serra and J. Terning, Composite Higgs Sketch, JHEP **1211**, 003 (2012) [arXiv:1205.4032 [hep-ph]].

B. Bellazzini, C. Csaki, J. Hubisz, J. Serra and J. Terning, A Higgslike Dilaton, Eur. Phys. J. C **73**, 2333 (2013) [arXiv:1209.3299 [hep-ph]].

B. Bellazzini, C. Csaki, J. Hubisz, J. Serra and J. Terning, “A Naturally Light Dilaton and a Small Cosmological Constant,” arXiv:1305.3919 [hep-th].

D. Bunk, J. Hubisz and B. Jain, “Higgs Decays in Gauge Extensions of the Standard Model,” arXiv:1309.7988 [hep-ph]. (Accepted for publication in PRD - Expected publication date in February 2014)

RECENT  
PRESENTATIONS

Jay Hubisz. 2009. Missing Energy Look-alikes at the LHC. Invited Talk given at U.C. Davis HEFTI workshop.

Jay Hubisz. 2009. Gauge Mediation Signatures without SUSY. Invited talk given at Joint Argonne National Lab and Illinois Institute of Technology Theory Institute Workshop: Collider Physics 2009, Chicago, IL. 2009.

Jay Hubisz. 2009. Revealing a Hidden RS Axion. Invited talk given at Aspen Summer Workshop: Beyond the Standard Model Physics at the Threshold, Aspen, CO. 2009.

Jay Hubisz 2009. Revealing Randall-Sundrum Hidden Valleys. Invited talk given at the University of Rochester.

Jay Hubisz 2010. Revealing Randall-Sundrum Hidden Valleys. Invited talk given at Brookhaven

National Laboratory

Jay Hubisz 2010. Revealing Randall-Sundrum Hidden Valleys. Invited talk given at Carleton University

Jay Hubisz 2010. Missing Energy Look-alikes at the LHC. Invited talk given at Carnegie Mellon

Jay Hubisz 2010. Symmetries of the Standard Model and Beyond. Binghamton University colloquium.

Jay Hubisz 2010. Revealing Randall-Sundrum Hidden Valleys. Talk given at PHENO symposium at University of Wisconsin - Madison.

Jay Hubisz 2011. 5D Theories at the Quantum Level. Invited talk given at CP3-origins at the University of Southern Denmark.

Jay Hubisz 2011. A 5D NJL Model. Invited talk given at the BNL forum "A First Glimpse of the Tera Scale." Brookhaven National Laboratory

Jay Hubisz 2012. Searching for Signals of a Light Composite Higgs. Invited talk given at "Light Higgs: Implications for the Search for New Physics at the LHC" rapid-response workshop at the University of Pittsburgh. January 14th, 2012

Jay Hubisz 2012. Searching for Signals of Non-standard Higgs. Invited talk given at CMS mini-workshop at Cornell University. January 19th, 2012.

Jay Hubisz 2012. Composite Higgs Sketch. Invited talk given at Aspen Summer Workshop: "The LHC Shows the Way." August 9th, 2012.

Jay Hubisz 2012. Much Ado About Nothing: A State of the Vacuum Address. Syracuse University Physics Departmental Colloquium. October 4th, 2012.

Jay Hubisz 2013. Higgslike Dilatons. Invited talk at Yale University. March 26th, 2013.

Jay Hubisz 2013. Higgslike Dilatons. Invited talk at YITP at Stonybrook University. March 28th, 2013.

Jay Hubisz 2013. Higgslike Dilatons. Syracuse University Seminar. April 8th, 2013.

Jay Hubisz 2013. Dilaton Phenomenology. Invited talk at KITP conference "LHC - The First Part of the Journey. July 11th, 2013

Jay Hubisz 2013. Firing Missiles at Right Angles to Reality. Syracuse University Physics Departmental Colloquium. September 19th, 2013.

Jay Hubisz 2013. A Light Dilaton and a Suppressed CC Without Fine Tuning at Penn State University (November 6, 2013).

Jay Hubisz 2013. A Light Dilaton and a Suppressed CC Without Fine Tuning at University of Pittsburgh (November 7, 2013).

Jay Hubisz 2013. A recipe for a light dilaton from strong dynamics. Invited talk at conference "Lattice Meets Experiment 2013: Beyond the Standard Model." Brookhaven National Laboratory (December 6, 2013).