

Zackaria Chacko
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College of Computer, Math & Natural Sciences
Physics

Notarization:

I have read the following and certify that this curriculum vitae is a current and accurate statement of my professional record.

Signature: *Zackaria Chacko*

Date: 7/7/15

PERSONAL INFORMATION

Educational Background

- Ph.D., Physics, University of Maryland, College Park, 1994-1999
- M.Sc., Physics, Indian Institute of Technology, Kharagpur, 1992-1994
- B.Sc., Physics, Indian Institute of Technology, Kharagpur, 1989-1992

Academic Appointments at UMD

- Associate Professor, 2009–present
- Assistant Professor, 2007-2009

Other Employment

- Assistant Professor, University of Arizona, 2004-2007
- 5 year Postdoctoral Fellow, Berkeley Center for Theoretical Physics, University of California, Berkeley, 2003-2004
- Postdoctoral Researcher, University of California, Berkeley, 2001-2003
- Postdoctoral Researcher, University of Washington, Seattle, 1999-2001
- Research Assistant, University of Maryland, College Park, 1997-1999
- Teaching Assistant, University of Maryland, College Park, 1994-1999

RESEARCH, SCHOLARLY AND CREATIVE ACTIVITIES Articles in Refereed Journals

Articles since the listing below:

Z. Chacko, Y. Cui, S. Hong and T. Okui, “A Hidden Dark Matter Sector, Dark Radiation,

and the CMB”, *Phys. Rev. D*, 92, no. 5, 055033 (2015); arXiv:1505.04192 [hep-ph].

• P. Agrawal, Z. Chacko, C. Kilic and C.B. Verhaaren, “A Couplet from Flavored Dark Matter”, *JHEP*, 1508, 072 (2015); arXiv:1503.03057 [hep-ph].

• Z. Chacko, R.K. Mishra, D. Stolarski and C.B. Verhaaren, “Interactions of a Stabilized Radion and Duality”, *Phys. Rev. D*, 92, no. 5, 056004 (2015); arxiv:1411.3758 [hep-ph].

1. G. Burdman, Z. Chacko, R. Harnik, L. de Lima and C. B. Verhaaren, "Colorless Top Partners, a 125 GeV Higgs, and the Limits on Naturalness", *Phys. Rev. D*, 91, no. 5, 055007 (2015); arXiv:1411.3310 [hep-ph].
2. P. Agrawal, Z. Chacko and C.B. Verhaaren, "Leptophilic Dark Matter and the Anomalous Magnetic Moment of the Muon", *JHEP*, 1408, 147 (2014); arxiv:1402.7369 [hep-ph].
3. Z. Chacko, Y. Cui and S. Hong, "Exploring a Dark Sector Through the Higgs Portal at a Lepton Collider", *Phys. Lett. B*, 732, 75 (2014); arxiv:1311.3306 [hep-ph].

4. Z. Chacko, *R.K. Mishra* and *D. Stolarski*, "Dynamics of a Stabilized Radion and Duality", *JHEP*, 1309, 121 (2013); arxiv:1304.1795 [hep-ph].
5. Z. Chacko, *R.K. Mishra* and *R. Franceschini*, "Resonance at 125 GeV: Higgs or Dilaton/Radion?", *JHEP*, 1304, 015 (2013); arxiv:1209.3259 [hep-ph].
6. Z. Chacko and *R.K. Mishra*, "Effective Theory of a Light Dilaton", *Phys. Rev. D*, 87, 115006 (2013); arxiv:1209.3022 [hep-ph].
7. K.N. Abazajian, *P. Agrawal*, Z. Chacko and C. Kilic, "Lower Limits on the Strengths of Gamma Ray Lines from WIMP Dark Matter Annihilation", *Phys. Rev. D*, 85, 123543 (2012); arxiv:1111.2835 [hep-ph].
8. *P. Agrawal*, *S. Blanchet*, Z. Chacko and C. Kilic, "Flavored Dark Matter, and Its Implications for Direct Detection and Colliders", *Phys. Rev. D*, 86, 055002 (2012); arxiv:1109.3516 [hep-ph].
9. K.N. Abazajian, *P. Agrawal*, Z. Chacko and C. Kilic, "Conservative Constraints on Dark Matter from the Fermi-LAT Isotropic Diffuse Gamma-Ray Background Spectrum", *JCAP*, 1011, 041 (2010); arxiv:1002.3820 [astro-ph.HE].
10. *S. Blanchet*, Z. Chacko, *S.S. Granor* and R.N. Mohapatra, "Probing Resonant Leptogenesis at the LHC", *Phys. Rev. D*, 82, 076008 (2010); arxiv:0904.2174 [hep-ph].
11. *S. Blanchet*, Z. Chacko and R.N. Mohapatra, "Neutrino Mass Seesaw at the Weak Scale, the Baryon Asymmetry and the LHC", *Phys. Rev. D*, 80, 085002 (2009); arxiv:0812.3837 [hep-ph].
12. P. Batra and Z. Chacko, "A Composite Twin Higgs Model", *Phys. Rev. D*, 79, 095012 (2009); arxiv:0811.0394 [hep-ph].
13. Z. Chacko, *C.A. Krenke* and *T. Okui*, "Supersymmetry in Slow Motion", *JHEP*, 0901, 050 (2009); arxiv:0809.3820 [hep-ph].
14. G. Burdman, Z. Chacko, H.S. Goh, R. Harnik and *C.A. Krenke*, "The Quirky Collider Signatures of Folded Supersymmetry", *Phys. Rev. D*, 78, 075028 (2008); arxiv:0805.4667 [hep-ph].
15. P. Batra and Z. Chacko, "Symmetry Breaking Patterns for the Little Higgs from Strong Dynamics", *Phys. Rev. D*, 77, 055015 (2008); arxiv:0710.0333 [hep-ph].
16. G. Burdman, Z. Chacko, *H.S. Goh* and R. Harnik, "Folded Supersymmetry and the LEP Paradox", *JHEP*, 0702, 009 (2007); hep-ph/0609152.
17. I.F.M. Albuquerque, G. Burdman and Z. Chacko, "Direct Detection of Supersymmetric Particles in Neutrino Telescopes", *Phys. Rev. D*, 75, 035006 (2007); hep-ph/0605120.
18. Z. Chacko, *H.S. Goh* and R. Harnik, "A Twin Higgs Model from Left-Right Symmetry", *JHEP*, 0601, 108 (2006); hep-ph/0512088.
19. Z. Chacko, Y. Nomura, M. Papucci and G. Perez, "Natural Little Hierarchy from a Partially Goldstone Twin Higgs", *JHEP*, 0601, 126 (2006); hep-ph/0510273.
20. Z. Chacko, *H.S. Goh* and R. Harnik, "The Twin Higgs: Natural Electroweak Breaking from Mirror Symmetry", *Phys. Rev. Lett.*, 96, 231802 (2006); hep-ph/0506256.
21. Z. Chacko, Y. Nomura and D. Tucker-Smith, "A Minimally Fine-tuned Supersymmetric Standard Model", *Nucl. Phys. B*, 725, 207 (2005); hep-ph/0504095.
22. A. Birkedal, Z. Chacko and Y. Nomura, "Relaxing the Upper Bound on the Mass of the Lightest Supersymmetric Higgs Boson", *Phys. Rev. D*, 71, 015006 (2005); hep-ph/0408329.

23. Z. Chacko, P.J. Fox and H. Murayama, "Localized Supersoft Supersymmetry Breaking", *Nucl. Phys. B*, 706, 53 (2005); hep-ph/0406142.
24. Z. Chacko, L.J. Hall, S.J. Oliver and M. Perelstein, "Late Time Neutrino Masses, the LSND Experiment and the Cosmic Microwave Background", *Phys. Rev. Lett.*, 94, 111801 (2005); hep-ph/0405067.
25. Z. Chacko, L.J. Hall and Y. Nomura, "Acceleressence: Dark Energy from a Phase Transition at the Seesaw Scale", *JCAP*, 0410, 011 (2004); astro-ph/0405596.
26. A. Birkedal, Z. Chacko and M.K. Gaillard, "Little Supersymmetry and the Supersymmetric Little Hierarchy Problem", *JHEP*, 0410, 036 (2004); hep-ph/0404197.
27. Z. Chacko, L.J. Hall, T. Okui and S. Oliver, "CMB Signals of Neutrino Mass Generation", *Phys. Rev. D*, 70, 085008 (2004); hep-ph/0312267.
28. I. Albuquerque, G. Burdman and Z. Chacko, "Neutrino Telescopes as a Direct Probe of Supersymmetry Breaking", *Phys. Rev. Lett.*, 92, 221802 (2004); hep-ph/0312197.
29. Z. Chacko, C. Grojean, M. Graesser and L. Pilo, "Massive Gravity on a Brane", *Phys. Rev. D*, 70, 084028 (2004); hep-th/0312117.
30. Z. Chacko and E. Ponton, "Bulk Gauge Fields in Warped Space and Localized Supersymmetry Breaking", *JHEP*, 0311, 024 (2003); hep-ph/0301171.
31. Z. Chacko, H. Murayama and M. Perelstein, "Preheating in Supersymmetric Theories", *Phys. Rev. D*, 68, 063515 (2003); hep-ph/0211369.
32. Z. Chacko and E. Perazzi, "Extra Dimensions at the Weak Scale and Deviations from Newtonian Gravity", *Phys. Rev. D*, 68, 115002 (2003); hep-ph/0210254.
33. Z. Chacko, L.J. Hall and M. Perelstein, "The Weak Mixing Angle from TeV Scale Quark-Lepton Unification", *JHEP*, 0301, 001 (2003); hep-ph/0210149.
34. Z. Chacko, C. Grojean and M. Perelstein, "Fine Structure Constant Variation from a Late Phase Transition", *Phys. Lett. B*, 565, 169 (2003); hep-ph/0204142.
35. Z. Chacko, E. Katz and E. Perazzi, "Yukawa Deflected Gauge Mediation in Four Dimensions", *Phys. Rev. D*, 66, 095012 (2002); hep-ph/0203080.
36. Z. Chacko and E. Ponton, "Yukawa Deflected Gauge Mediation", *Phys. Rev. D*, 66, 095004 (2002); hep-ph/0112190.
37. Z. Chacko and M.A. Luty, "Realistic Anomaly Mediation with Bulk Gauge Fields", *JHEP*, 0205, 047 (2002); hep-ph/0112172.
38. Z. Chacko, P.J. Fox, A.E. Nelson and N. Weiner, "Large Extra Dimensions from a Small Extra Dimension", *JHEP*, 0203, 001 (2002); hep-ph/0106343.
39. Z. Chacko and G.D. Kribs, "Constraints on Lepton Flavor Violation in the MSSM from the Muon Anomalous Magnetic Moment Measurement", *Phys. Rev. D*, 64, 075015 (2001); hep-ph/0104317.
40. Z. Chacko and P.J. Fox, "Wave Function of the Radion in the dS and AdS Brane Worlds", *Phys. Rev. D*, 64, 024015 (2001); hep-ph/0102023.
41. Z. Chacko and M.A. Luty, "Radion Mediated Supersymmetry Breaking", *JHEP*, 0105, 067 (2001); hep-ph/0008103.
42. Z. Chacko, M.A. Luty, E. Ponton, Y. Shadmi and Y. Shirman, "The GUT Scale and Superpartner Masses from Anomaly Mediated Supersymmetry Breaking", *Phys. Rev. D*, 64, 055009 (2001); hep-ph/0006047.

43. Z. Chacko and A.E. Nelson, "A Solution to the Hierarchy Problem with an Infinitely Large Extra Dimension and Radion Stabilization", *Phys. Rev. D*, 64, 055009 (2001); hep-th/9912186.
44. Z. Chacko, M.A. Luty, A.E. Nelson and E. Ponton, "Gaugino Mediated Supersymmetry Breaking", *JHEP*, 0001, 003 (2000); hep-ph/9911323.
45. Z. Chacko, M.A. Luty and E. Ponton, "Massive Higher Dimensional Gauge Fields as Messengers of Supersymmetry Breaking", *JHEP*, 0007, 036 (2000); hep-ph/9909248.
46. Z. Chacko, M.A. Luty, I. Maksymyk and E. Ponton, "Realistic Anomaly-Mediated Supersymmetry Breaking", *JHEP*, 0004, 001 (2000); hep-ph/9905390.
47. Z. Chacko and R.N. Mohapatra, "Sterile Neutrinos in E(6) and a Natural Understanding of the Vacuum Oscillation Solution to the Solar Neutrino Puzzle", *Phys. Rev. D*, 61, 053002 (2000); hep-ph/9905388.
48. Z. Chacko and R.N. Mohapatra, "A New Doublet Triplet Splitting Mechanism for SO(10) and Implications for Fermion Masses", *Phys. Rev. Lett.*, 82, 2836 (1999); hep-ph/9810315.
49. Z. Chacko and R.N. Mohapatra, "Economical Doublet Triplet Splitting and Strong Suppression of Proton Decay in SO(10)", *Phys. Rev. D*, 59, 011702 (1999); hep-ph/9808458.
50. Z. Chacko, M.A. Luty and E. Ponton, "Dynamical Determination of the Unification Scale by Gauge Mediated Supersymmetry Breaking", *Phys. Rev. D*, 59, 035004 (1999); hep-ph/9806398.
51. Z. Chacko and R.N. Mohapatra, "Supersymmetric SU(2)_L X SU(2)_R X SU(4)_C and Observable Neutron- Antineutron Oscillation", *Phys. Rev. D*, 59, 055004 (1999); hep-ph/9802388.
52. Z. Chacko, M.A. Luty and E. Ponton, "Calculable Dynamical Supersymmetry Breaking on Deformed Moduli Spaces", *JHEP*, 9812, 016 (1998); hep-th/9810253.
53. Z. Chacko and R.N. Mohapatra, "Doublet Triplet Splitting in Supersymmetric SU(6) by Missing VEV Mechanism", *Phys. Lett. B*, 442, 199 (1998); hep-ph/9809345.
54. Z. Chacko and R.N. Mohapatra, "Supersymmetric Left-Right Model and Light Doubly Charged Higgs Bosons and Higgsinos", *Phys. Rev. D*, 58, 015003 (1998); hep-ph/9712359.
55. Z. Chacko, B. Dutta, R.N. Mohapatra and S. Nandi, "Sparticle Spectroscopy and Phenomenology in a New Class of Gauge Mediated Supersymmetry Breaking Models", *Phys. Rev. D*, 56, 5466 (1997); hep-ph/9704307.
56. Z. Chacko and A.B. Hassam, "Steady State Magnetohydrodynamic Flow past Conducting Sphere", *Physics of Plasmas*, Vol. 4, No. 8 (1997)

Note: The names of the graduate students and postdoctoral researchers that I mentored in the course of these projects are in italics.

Conferences, Workshops and Talks

Invited Talks

- "Conference Summary", CERN-CKC Theory Institute on Neutral Naturalness, Geneva, Switzerland, April, 2015

- "Twin Higgs Theories: An Overview", CERN-CKC Theory Institute on Neutral Naturalness, Geneva, Switzerland, April, 2015
- "Uncolored Top Partners, a 125 GeV Higgs, and the Limits on Naturalness", 4th MCTP Spring Symposium, Michigan Center for Theoretical Physics, Ann Arbor, Michigan, April, 2015
- "Uncolored Top Partners", Naturalness 2014 Workshop, Weizmann Institute of Science, Israel, November 2014
- "Uncolored Top Partners, a 125 GeV Higgs and the Limits on Naturalness", invited seminar, Brookhaven National Laboratory, November 2014
- "Uncolored Top Partners, a 125 GeV Higgs and the Limits on Naturalness", Going On After the LHC8 (GOAL) Workshop, ICTP-SAIFR, Sao Paulo, Brazil, August 2014
- "Uncolored Top Partners, a 125 GeV Higgs and the Limits on Naturalness", Los Alamos National Laboratory Summer Workshop on LHC after the Higgs, Santa Fe, New Mexico, July 2014
- "The Higgs Portal and Lepton Colliders", Workshop on Unlocking the Higgs Portal, University of Massachusetts, Amherst, May 2014
- "Dark Matter, the Muon Magnetic Moment and the Scale of New Physics", PITT-PACC Workshop on the Next Scale in High Energy Physics, Pittsburgh, Pennsylvania, November 2013
- "The Dilaton, the Radion, and Duality", invited seminar, University of Wisconsin, Madison, November 2013
- "The Dilaton, the Radion, and Duality", invited seminar, University of Minnesota, September 2013
- "The Dilaton, the Radion, and Duality", KITP Conference on Exploring the TeV Scale, Santa Barbara, California, July 2013
- "The Dilaton, the Radion, and Duality", invited seminar, California Institute of Technology, May 2013
- "The Dilaton/Radion and the 125 GeV Resonance", HEFTI Workshop on the Higgs Signal, University of California, Davis, April 2013
- "The Dilaton, the Radion, and Duality", invited seminar, ICTP-SAIFR, Sao Paulo, Brazil, April 2013
- "The Dilaton, the Radion, and Duality", invited seminar, Sao Paulo University, Brazil, April 2013
- "The Dilaton, the Radion, and Duality", invited seminar, Brookhaven National Laboratory, March 2013
- "The Dilaton, the Radion, and Duality", invited seminar, Stanford University, March 2013
- "The Dilaton, the Radion, and Duality", invited seminar, Lawrence Berkeley National Laboratory, March 2013
- "The Dilaton, the Radion, and Duality", invited seminar, University of California, Davis, March 2013
- "Flavored Dark Matter: Direct Detection and Collider Signals", Aspen Winter Workshop on Dark Matter, Aspen, Colorado, January 2013

- "Could the Resonance at 125 GeV Be a Dilaton?", University of Washington Workshop on the Higgs-like Resonance, Seattle, Washington, January 2013
- "Higgs Impostors in Light of New Data", University of Chicago Workshop on LHC Physics in the Higgs Era, Chicago, Illinois, November 2012
- "Flavored Dark Matter: Direct Detection and Collider Signals", invited seminar, Institute of High Energy Physics, Beijing, China, August 2012
- "Flavored Dark Matter: Direct Detection and Collider Signals", invited seminar, University of Texas at Austin, February 2012
- "Flavor and Dark Matter", Workshop on High Energy Physics Phenomenology XII, Mahabaleswar, India, plenary talk, January 2012
- "Flavored Dark Matter: Direct Detection and Collider Signals", SUSY 2011, Fermilab, August 2011
- "Flavored Dark Matter: Direct Detection and Collider Signals", Scalars 2011, Warsaw, Poland, plenary talk, August 2011
- "A Model-Independent Approach to WIMP Dark Matter", invited seminar, Fermi National Accelerator Laboratory, May 2011
- "Flavored Dark Matter and Its Implications for Colliders", Berkeley Center for Theoretical Physics Workshop, Berkeley, California, April 2011
- "Lower Limits on the Strengths of Gamma Ray Lines from WIMP Dark Matter Annihilation", invited seminar, University of California, Davis, April 2011
- "A Model-Independent Approach to WIMP Dark Matter", invited seminar, University of California, Berkeley, March 2011
- "A Model-Independent Approach to WIMP Dark Matter", invited seminar, Perimeter Institute, March 2011
- "A Model-Independent Approach to WIMP Dark Matter", invited seminar, Princeton University, November 2010
- "A Model-Independent Approach to WIMP Dark Matter", invited seminar, University of Michigan, November 2010
- "Is the Dark Matter Particle Its Own Antiparticle?", Los Alamos National Laboratory Summer Workshop on LHC Physics, Santa Fe, New Mexico, July 2010
- "Is the Dark Matter Particle Its Own Antiparticle? What IceCube Can Say", IceCube Collaboration Meeting, Annapolis, Maryland, May 2010
- "Neutrino Mass Seesaw at the Weak Scale, the Baryon Asymmetry and the LHC", invited seminar, Florida State University, April 2010
- "Neutrino Mass Seesaw at the Weak Scale, the Baryon Asymmetry and the LHC", invited seminar, University of California, Berkeley, November 2009
- "Supersymmetry in Slow Motion", SUSY 2009, Boston, Massachusetts, June 2009
- "Probing Resonant Leptogenesis at the LHC", invited seminar, Johns Hopkins University, May 2009
- "Supersymmetry in Slow Motion", invited seminar, Cornell University, April 2009
- "Supersymmetry in Slow Motion", invited seminar, Harvard University, April 2009
- "A Composite Little Higgs", invited seminar, Fermi National Accelerator Laboratory, April 2009
- "A Composite Little Higgs", invited seminar, Stanford University, April 2009

- "A Composite Little Higgs", invited seminar, Yale University, November 2008
- "Quirky Collider Signatures of Folded Supersymmetry", Los Alamos National Laboratory Summer Workshop on LHC Physics, Santa Fe, New Mexico, June 2008
- "Twin Higgs Theories", Workshop on the Origins of P, CP and T Violation, ICTP, Trieste, Italy, June 2008
- "Folded Supersymmetry and the LEP Paradox", invited seminar, University of Minnesota, May 2008
- "A Composite Little Higgs", invited seminar, University of California, Davis, April 2008
- "Quirks", LHC Workshop, Davis, California, November 2007
- "Folded Supersymmetry and the LEP Paradox", invited seminar, State University of New York at Stony Brook, October 2007
- "Folded Supersymmetry and the LEP Paradox", invited seminar, New York University, April 2007
- "Folded Supersymmetry and the LEP Paradox", invited seminar, Columbia University, April 2007
- "Twin Higgs Theories", invited seminar, University of California, San Diego, March 2007
- "Twin Higgs Theories", invited seminar, University of California, Santa Barbara, March 2007
- "Twin Higgs Theories", invited seminar, University of Maryland, College Park, February 2007
- "New Ideas for Electroweak Symmetry Breaking", XII IFT-UAM/CSIC Christmas Workshop, Madrid, Spain, December 2006
- "Folded Supersymmetry and the LEP Paradox", invited seminar, University of Maryland, College Park, October 2006
- "Folded Supersymmetry and the LEP Paradox", invited seminar, University of Delaware, October 2006
- "Folded Supersymmetry and the LEP Paradox", invited seminar, University of Washington, Seattle, October 2006
- "Folded Supersymmetry and the LEP Paradox", invited seminar, Syracuse University, September 2006
- "Folded Supersymmetry and the LEP Paradox", invited seminar, Cornell University, September 2006
- "Direct Detection of Supersymmetric Particles in Neutrino Telescopes", TeV Particle Astrophysics II, Madison, Wisconsin, August 2006
- "Natural Electroweak Breaking from Discrete Symmetries", Aspen Workshop, August 2006, invited participant and speaker
- "Twin Higgs Theories", SUSY 2006, Irvine, California, plenary talk, June 2006
- "Twin Higgs Theories", PLANCK'06, Paris, France, plenary talk, June 2006
- "Twin Higgs Theories", invited seminar, University of California, Davis, April 2006
- "Twin Higgs Theories", invited seminar, University of Oregon, March 2006
- "Twin Higgs Theories", invited seminar, Fermi National Accelerator Laboratory, December 2005

- "Localized Supersoft Supersymmetry Breaking", invited seminar, University of California, Davis, April 2005
- "CMB Signals of Neutrino Mass Generation", invited seminar, Tohoku University, Japan, December 2004
- "Little Supersymmetry and the Supersymmetric Little Hierarchy Problem", LHC Workshop, Kyoto, Japan, December 2004
- "CMB Signals of Neutrino Mass Generation", invited seminar, Argonne National Laboratory, November 2004
- "Little Supersymmetry and the Supersymmetric Little Hierarchy Problem", SUSY 2004, Tsukuba, Japan, June 2004
- "Neutrino Telescopes as a Direct Probe of Supersymmetry Breaking", SUSY 2004, Tsukuba, Japan, June 2004
- "Little Supersymmetry and the Supersymmetric Little Hierarchy Problem", 28th Hopkins Workshop, Baltimore, Maryland, June 2004
- "The Celestial Collider", invited seminar, Harvard University, April 2004
- "Little Supersymmetry and the Supersymmetric Little Hierarchy Problem", invited seminar, Boston University, April 2004
- "Neutrino Telescopes as a Direct Probe of Supersymmetry Breaking, and Vice Versa", Linear Collider Workshop, Stanford Linear Accelerator Center, January 2004

Non-Refereed Presentations

- "Effective Theory of a Light Dilaton", SUSY 2012, Beijing, China, August 2012
- "Is the Dark Matter Particle Its Own Antiparticle?", Planck 2010, CERN, Geneva, Switzerland, June 2010

Colloquia

- "Symmetry as a Guide to New Physics at the Weak Scale", colloquium, University of Maryland, College Park, September 2008
- "New Ideas in Electroweak Symmetry Breaking", Triangle Nuclear Theory colloquium, Duke University, April 2008
- "Symmetry as a Guide to New Physics at the Weak Scale", colloquium, University of California, Santa Barbara, March 2007
- "How is Supersymmetry Broken? New Ideas from Extra Dimensions", colloquium, University of Arizona, March 2003

Historical Conferences, Workshops, Talks (10+ years ago)

- "Extra Dimensions at the Weak Scale and Deviations from Newtonian Gravity", SUSY 2003, Tucson, Arizona, June 2003
- "Addressing the Hierarchy and Cosmological Constant Problems using a Class of Warped Metrics", Argonne National Laboratory Theory Institute, Chicago, Illinois, April 2000

Sponsored Research

- "Physics beyond the Standard Model", NSF Award No. PHY-1315155, Co-PIs on this grant are K. Agashe, S.J. Gates, R.N. Mohapatra and R. Sundrum, \$980,000 till date, 10/13 - (09/16), Co-PI

- "Particle Physics and Cosmology beyond the Standard Model", NSF Award No. PHY-0968854, Co-PIs on this grant were K. Abazajian, K. Agashe, S.J. Gates and R. N. Mohapatra, \$1,145,000, 07/10 - 09/14, Co-PI
- "Anticipating New Physics and Its Signatures at the LHC", NSF Award No. PHY-0801323, \$120,000, 01/09 - 12/11, PI
- "Looking beyond the Standard Model, from Particle Physics to Cosmology", NSF Award No. PHY-0408954, \$75,000, 11/04 - 10/07, PI

Submissions and Works in Progress

Manuscripts under Review

- Z. Chacko, Y. Cui, S. Hong and T. Okui, A Hidden Dark Matter Sector, Dark Radiation, and the CMB, arXiv:1505.04192 [hep-ph], Phys. Rev. D
- P. Agrawal, Z. Chacko, C. Kilic and C.B. Verhaaren, A Couplet from Flavored Dark Matter, arXiv:1503.03057 [hep-ph], JHEP
- Z. Chacko, R.K. Mishra, D. Stolarski and C.B. Verhaaren, Interactions of a Stabilized Radion and Duality, arxiv:1411.3758 [hep-ph], Phys. Rev. D

TEACHING, MENTORING AND ADVISING

Courses Taught

- **PHYS 274**, Mathematical Methods for Physics I, Spring 2015, Enrollment 57
- **PHYS 624**, Advanced Quantum Mechanics, Fall 2014, enrollment 16
- **PHYS 374**, Intermediate Theoretical Methods, Spring 2014, enrollment 38
- **PHYS 624**, Advanced Quantum Mechanics, Fall 2013, enrollment 27
- **PHYS 374**, Intermediate Theoretical Methods, Spring 2013, enrollment 49
- **PHYS 624**, Advanced Quantum Mechanics, Fall 2012, enrollment 26
- **PHYS 374**, Intermediate Theoretical Methods, Spring 2012, enrollment 41
- **PHYS 624**, Advanced Quantum Mechanics, Fall 2011, enrollment 23
- **PHYS 374**, Intermediate Theoretical Methods, Spring 2011, enrollment 49
- **PHYS 410**, Classical Mechanics, Fall 2010, enrollment 29
- **PHYS 752**, Elementary Particle Physics II, Spring 2010, enrollment 10
- **PHYS 410**, Classical Mechanics, Fall 2009, enrollment 36
- **PHYS 752**, Elementary Particle Physics II, Spring 2009, enrollment 5

Advising: Research or Clinical

Doctoral

- Rashmish K. Mishra, (graduated 2013), Research Scientist, Intel Corporation, Advisor
- Prateek Agrawal, (graduated 2012), Postdoctoral Researcher, Fermi National Accelerator Laboratory, Advisor
- Christopher A. Krenke, (graduated 2009 from the University of Arizona), Technical Staff, MIT Lincoln Laboratory, Advisor
- Christopher B. Verhaaren, current graduate student
- Simon Riquelme, current graduate student

Post-doctoral

- Elaine Fortes, 2014 - (2015), Advisor
- David Curtin, 2014 - (2017), Co-Advisor
- Prashant Saraswat, 2013 - (2016), Co-Advisor

- Luca Vecchi, 2012 - (2015), Co-Advisor
- Yanou Cui, 2011 - 2014, 5 Year Postdoctoral Fellow, Perimeter Institute, Co-Advisor
- Roberto Franceschini, 2011 - 2014, Postdoctoral Researcher, CERN, Co-Advisor
- Daniel Stolarski, 2010 - 2013, Postdoctoral Researcher, CERN, Co-Advisor
- Andrey Katz, (2008 - 2011), Staff Member, CERN, Co-Advisor
- Steve Blanchet, 2008 - 2010, Associate at McKinsey and Company, Co-Advisor
- Takemichi Okui, 2007 - 2009, Assistant Professor, Florida State University, Co-Advisor
- Hock-Seng Goh, (2004 - 2007 at the University of Arizona), Senior Financial Officer, Gifford Fong Associates, Co-Advisor

Advising: Other than Research Direction

Undergraduate

- Served as academic advisor to Brian McPeak, Roger Curley, Alexander Ridgway, Daniel Bae, Adnan Chowdhury, Krishna Bhamidipati, Matthew Mondragon and David Bogner

Other Teaching Activities

- Lectures at ICTP-SAIFR Summer School on Particle Physics in the LHC Era, Sao Paulo, Brazil, "Beyond the Standard Model at the LHC (Weakly Coupled Extensions)", 2013
- Lectures at Pre-SUSY 2012 Summer School, Beijing, China, "Beyond the Standard Model Physics", 2012

SERVICE AND OUTREACH

Editorships, Editorial Boards and Reviewing Activities

Reviewing Activities for Journals and Presses

- Reviewer, Annals of Physics, Europhysics Journal C, Europhysics Letters, International Journal of Modern Physics A, Journal of High Energy Physics, Nuclear Physics B, Physical Review D, Physical Review Letters and Physics Letters B

Reviewing Activities for Agencies and Foundations

- Panelist, National Science Foundation, have served on the High Energy Physics and Cosmology grant review panel.
- Reviewer, National Science Foundation, since 2004.

Committees, Professional & Campus Service

Campus Service - Department

- Physics Council, Department of Physics, University of Maryland, 2013-(2015)
- Teaching Interview Committee, Department of Physics, University of Maryland, 2012-2013
- Curriculum Reform Implementation Committee, Department of Physics, University of Maryland, 2012-2013
- Particle Theory Search Committee, Department of Physics, University of Maryland, 2010-2011
- Undergraduate Teaching Assistant Assignments, Department of Physics, University of Maryland, 2010-(2015)
- Committee for Appointments, Promotions and Tenure, Department of Physics, University of Maryland, 2010-2012
- Graduate Admissions Committee, Department of Physics, University of Maryland, 2007-2010

- Colloquium Committee, Department of Physics, University of Maryland, 2007-2009
- Grading and Setting of the Qualifying Exam Questions, Department of Physics, University of Maryland, 2007–
- Graduate Examinations Committee, Department of Physics, University of Arizona, 2006-2007
- Colloquium Committee, Department of Physics, University of Arizona, 2006-2007
- Head, Colloquium Committee, Department of Physics, University of Arizona, 2005-2006
- Committee for Undergraduate Recruitment, Scholarship and Prizes, Department of Physics, University of Arizona, 2004-2006

Campus Service - University

- Senate Committee for Academic Procedures and Standards, University of Maryland, 2009-2010

Leadership Roles in Meetings and Conferences

- Lattice Meets Experiment 2013: Beyond the Standard Model Workshop, Brookhaven National Laboratory, 2013, Scientific Organizer
- Mini-Workshop on LHC physics, University of Maryland, 2008, Co-organizer
- SUSY 2004 Conference, Tsukuba, Japan, 2004, Session Convener

AWARDS, HONORS AND RECOGNITION

Research Fellowships, Prizes and Awards

- Pelczar Award for Outstanding Graduate Study, University of Maryland, College Park, 1998-1999
- Graduate School Fellow, University of Maryland, College Park, 1994-1996

Teaching Awards

- Excellence in Graduate Teaching Award, Physics Department, University of Arizona, 2004-2005
- Outstanding Teaching Assistant Award, Physics Department, University of Maryland, 1997-1998