

Curriculum Vitae

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

Signature _____ Date _____

I. PERSONAL INFORMATION

(A). NAME AND CONTACT **Kaustubh S. Agashe** (UID: 109819275)

Email: kagashe@umd.edu

Address: Department of Physics, University of Maryland, College Park, MD 20742, U. S. A.

Webpage:

(B). ACADEMIC APPOINTMENTS AT UMD **Department of Physics**

Professor **2017 to present**

Associate Professor **2012 to 2017**

Assistant Professor **2007 to 2012**

- Founding member of the Maryland Center for Fundamental Physics

(C). ADMINISTRATIVE APPOINTMENTS AT UMD

(D). OTHER EMPLOYMENT **Syracuse University, Department of Physics, Syracuse, NY USA**

Assistant Professor **2005 to 2007**

Cornell University, Department of Physics, Ithaca, NY, USA

Visiting Fellow, High-Energy Phenomenology group **2006-2007**

Institute for Advanced Study, School of Natural Sciences, Princeton, NJ USA

Member **2005**

Johns Hopkins University, Department of Physics and Astronomy, Baltimore, MD USA

Assistant Research Scientist **2004 to 2005**

- Particle Theory Group

Leon Madansky Postdoctoral Fellow **2001 to 2004**

- Particle Theory Group

University of Oregon, Institute of Theoretical Science, Eugene, OR USA

Research Associate **1998 to 2001**

- Theoretical High Energy Physics Group

Lawrence Berkeley National Laboratory, Berkeley, CA USA

Interim Research Associate

1998

- Theoretical Physics Group

University of California, Berkeley, Department of Physics, Berkeley, CA USA

Graduate Student Researcher

1996 to 1998

- Prof. Mahiko Suzuki and Prof. Ian Hinchliffe, PI's

Graduate Student Instructor

1993 to 1995

(E). EDUCATIONAL BACKGROUND **University of California, Berkeley**, Berkeley, California USA

Ph.D., Physics, 1993 to 1998

- Thesis: *Naturalness and supersymmetry*
- Advisers: Professors Mahiko Suzuki and Ian Hinchliffe

Indian Institute of Technology, Bombay, Bombay, India

B.Tech., Electrical Engineering, 1989 to 1993

(E). PROFESSIONAL
CERTIFICATIONS
AND LICENSES

II. RESEARCH, SCHOLARLY AND CREATIVE ACTIVITIES

(A). BOOKS

(B). CHAPTERS

(C). ARTICLES IN
REFEREED
JOURNALS

1. “***R*-parity violation in flavor changing neutral current processes and top quark decays**”
K. Agashe¹ and M. Graesser
Phys. Rev. D **54**, 4445 (1996) [arXiv:hep-ph/9510439]
2. “**A Consistent model of electroweak data including $Z \rightarrow b\bar{b}$ and $Z \rightarrow c\bar{c}$** ”
K. Agashe, M. Graesser, I. Hinchliffe and M. Suzuki
Phys. Lett. B **385**, 218 (1996) [arXiv:hep-ph/9604266]
3. “**Improving the fine tuning in models of low energy gauge mediated supersymmetry breaking**”
K. Agashe and M. Graesser
Nucl. Phys. B **507**, 3 (1997) [arXiv:hep-ph/9704206]
4. “**An improved model of direct gauge mediation**”
K. Agashe
Phys. Lett. B **435**, 83 (1998) [arXiv:hep-ph/9804450]

¹In my research field, i.e., theoretical particle physics, the ideas and the insights are considered to be the true value of papers, and for papers with more than one author those ideas and insights are usually due to a true collaboration between those authors. Thus, it is the convention that the authors are listed alphabetically.

5. **“Supersymmetry breaking and the supersymmetric flavor problem: An analysis of decoupling the first two generation scalars”**
K. Agashe and M. Graesser
Phys. Rev. D **59**, 015007 (1999) [arXiv:hep-ph/9801446]
6. **“GUT and SUSY breaking by the same field”**
K. Agashe
Phys. Lett. B **444**, 61 (1998) [arXiv:hep-ph/9809421]
7. **“Determining the weak phase gamma in the presence of rescattering”**
K. Agashe and N. G. Deshpande
Phys. Lett. B **451**, 215 (1999) [arXiv:hep-ph/9812278]
8. **“Limits on low scale gravity from $e^+e^- \rightarrow W^+W^-$, ZZ and $\gamma\gamma$ ”**
K. Agashe and N. G. Deshpande
Phys. Lett. B **456**, 60 (1999) [arXiv:hep-ph/9902263]
9. **“Determining the weak phase gamma using the decays $B_d, B^+ \rightarrow K\eta$ (η') and $B_s \rightarrow \pi\eta$ (η')”**
K. Agashe and N. G. Deshpande
Phys. Lett. B **454**, 359 (1999) [arXiv:hep-ph/9902395]
10. **“Signals of supersymmetric lepton flavor violation at the LHC”**
K. Agashe and M. Graesser
Phys. Rev. D **61**, 075008 (2000) [arXiv:hep-ph/9904422]
11. **“Implications of the CLEO measurement of $B \rightarrow \pi^+\pi^-$ ”**
K. Agashe and N. G. Deshpande
Phys. Rev. D **61**, 071301 (2000) [arXiv:hep-ph/9909298]
12. **“Can multi-TeV (top and other) squarks be natural in gauge mediation?”**
K. Agashe
Phys. Rev. D **61**, 115006 (2000) [arXiv:hep-ph/9910497]
13. **“Improved GUT and SUSY breaking by the same field”**
K. Agashe
Nucl. Phys. B **588**, 39 (2000) [arXiv:hep-ph/0003236]
14. **“Charged Higgs decays in models with singlet neutrino in large extra dimensions”**
K. Agashe, N. G. Deshpande and G. H. Wu
Phys. Lett. B **489**, 367 (2000) [arXiv:hep-ph/0006122]
15. **“Remarks on models with singlet neutrino in large extra dimensions”**
K. Agashe and G. H. Wu
Phys. Lett. B **498**, 230 (2001) [arXiv:hep-ph/0010117]
16. **“A note on gaugino masses in Kaluza-Klein/radion mediated SUSY breaking”**
K. Agashe
JHEP **0105**, 017 (2001) [arXiv:hep-ph/0012182]
17. **“Can extra dimensions accessible to the SM explain the recent measurement of anomalous magnetic moment of the muon?”**
K. Agashe, N. G. Deshpande and G. H. Wu
Phys. Lett. B **511**, 85 (2001) [arXiv:hep-ph/0103235]

18. **“Universal extra dimensions and $b \rightarrow s\gamma$ ”**
K. Agashe, N. G. Deshpande and G. H. Wu
Phys. Lett. B **514**, 309 (2001) [arXiv:hep-ph/0105084]
19. **“Gauge coupling renormalization in RS1”**
K. Agashe, A. Delgado and R. Sundrum
Nucl. Phys. B **643**, 172 (2002) [arXiv:hep-ph/0206099]
20. **“A note on CFT dual of RS model with gauge fields in bulk”**
K. Agashe and A. Delgado
Phys. Rev. D **67**, 046003 (2003) [arXiv:hep-th/0209212]
21. **“Grand unification in RS1”**
K. Agashe, A. Delgado and R. Sundrum
Annals Phys. **304**, 145 (2003) [arXiv:hep-ph/0212028]
22. **“Supersymmetric flavor models and the $B \rightarrow \phi K_S$ anomaly”**
K. Agashe and C. D. Carone
Phys. Rev. D **68**, 035017 (2003) [arXiv:hep-ph/0304229]
23. **“RS1, custodial isospin and precision tests”**
K. Agashe, A. Delgado, M. J. May and R. Sundrum
JHEP **0308**, 050 (2003) [arXiv:hep-ph/0308036]
24. **“Warped unification, proton stability and dark matter”**
K. Agashe and G. Servant
Phys. Rev. Lett. **93**, 231805 (2004) [arXiv:hep-ph/0403143]
25. **“B-factory signals for a warped extra dimension”**
K. Agashe, G. Perez and A. Soni
Phys. Rev. Lett. **93**, 201804 (2004) [arXiv:hep-ph/0406101]
26. **“Flavor structure of warped extra dimension models”**
K. Agashe, G. Perez and A. Soni
Phys. Rev. D **71**, 016002 (2005) [arXiv:hep-ph/0408134]
27. **“Baryon number in warped GUTs: Model building and (dark matter related) phenomenology”**
K. Agashe and G. Servant
JCAP **0502**, 002 (2005) [arXiv:hep-ph/0411254]
28. **“The Minimal Composite Higgs Model”**
K. Agashe, R. Contino and A. Pomarol
Nucl. Phys. B **719**, 165 (2005) [arXiv:hep-ph/0412089]
29. **“Top compositeness and precision unification”**
K. Agashe, R. Contino and R. Sundrum
Phys. Rev. Lett. **95**, 171804 (2005) [arXiv:hep-ph/0502222]
30. **“Next to minimal flavor violation”**
K. Agashe, M. Papucci, G. Perez and D. Pirjol
arXiv:hep-ph/0509117
LBNL-58627(2005)
31. **“The minimal composite Higgs model and electroweak precision tests”**
K. Agashe and R. Contino
Nucl. Phys. B **742**, 59 (2006) [arXiv:hep-ph/0510164]

32. **“A custodial symmetry for $Zb\bar{b}$ ”**
K. Agashe, R. Contino, L. Da Rold and A. Pomarol
Phys. Lett. B **641**, 62 (2006) [arXiv:hep-ph/0605341]
33. **“Probing the Randall-Sundrum geometric origin of flavor with lepton flavor violation”**
K. Agashe, A. E. Blechman and F. Petriello
Phys. Rev. D **74**, 053011 (2006) [arXiv:hep-ph/0606021]
34. **“Collider Signals of Top Quark Flavor Violation from a Warped Extra Dimension”**
K. Agashe, G. Perez and A. Soni
Phys. Rev. D **75**, 015002 (2007) [arXiv:hep-ph/0606293]
35. **“LHC signals from warped extra dimensions”**
K. Agashe, A. Belyaev, T. Krupovnickas, G. Perez and J. Virzi
Phys. Rev. D **77**, 015003 (2008) [arXiv:hep-ph/0612015]
36. **“Warped Gravitons at the LHC and Beyond”**
K. Agashe, H. Davoudiasl, G. Perez and A. Soni
Phys. Rev. D **76**, 036006 (2007) [arXiv:hep-ph/0701186]
37. **“The S-parameter in holographic technicolor models”**
K. Agashe, C. Csaki, C. Grojean and M. Reece
JHEP **0712**, 003 (2007) [arXiv:0704.1821 [hep-ph]]
38. **“LHC Signals for Warped Electroweak Neutral Gauge Bosons”**
K. Agashe, H. Davoudiasl, S. Gopalakrishna, T. Han, G. Y. Huang, G. Perez, Z. G. Si and A. Soni
Phys. Rev. D **76**, 115015 (2007) [arXiv:0709.0007 [hep-ph]]
39. **“KK Parity in Warped Extra Dimension”**
K. Agashe, A. Falkowski, I. Low and G. Servant
JHEP **0804**, 027 (2008) [arXiv:0712.2455 [hep-ph]]
40. **“Flavor Violation Tests of Warped/Composite SM in the Two-Site Approach”**
K. Agashe, A. Azatov^{*2} and L. Zhu^{*3}
Phys. Rev. D **79**, 056006 (2009) [arXiv:0810.1016 [hep-ph]]
41. **“A Common Origin for Neutrino Anarchy and Charged Hierarchies”**
K. Agashe, T. Okui^{*4} and R. Sundrum
Phys. Rev. Lett. **102**, 101801 (2009) [arXiv:0810.1277 [hep-ph]]
42. **“LHC Signals for Warped Electroweak Charged Gauge Bosons”**
K. Agashe, S. Gopalakrishna, T. Han, G. Y. Huang and A. Soni
Phys. Rev. D **80**, 075007 (2009) [arXiv:0810.1497 [hep-ph]]
43. **“Relaxing Constraints from Lepton Flavor Violation in 5D Flavorful Theories”**
K. Agashe
Phys. Rev. D **80**, 115020 (2009) [arXiv:0902.2400 [hep-ph]]
44. **“Composite Higgs-Mediated FCNC”**
K. Agashe and R. Contino
Phys. Rev. D **80**, 075016 (2009) [arXiv:0906.1542 [hep-ph]]

²graduate student

³graduate student

⁴postdoctoral fellow

45. **“LHC Signals for Coset Electroweak Gauge Bosons in Warped/Composite PGB Higgs Models”**
K. Agashe, A. Azatov^{*5}, T. Han, Y. Li, Z. G. Si and L. Zhu^{*6}
Phys. Rev. D **81**, 096002 (2010) [arXiv:0911.0059 [hep-ph]]
46. **“Astrophysical Implications of a Visible Dark Matter Sector from a Custodially Warped-GUT”**
K. Agashe, K. Blum, S. J. Lee and G. Perez
Phys. Rev. D **81**, 075012 (2010) [arXiv:0912.3070 [hep-ph]]
47. **“Distinguishing Dark Matter Stabilization Symmetries Using Multiple Kinematic Edges and Cusps”**
K. Agashe, D. Kim^{*7}, M. Toharia^{*8} and D. G. E. Walker
Phys. Rev. D **82**, 015007 (2010) [arXiv:1003.0899 [hep-ph]]
48. **“Using M_{T2} to Distinguish Dark Matter Stabilization Symmetries”**
K. Agashe, D. Kim^{*9}, D. G. E. Walker and L. Zhu^{*10}
Phys. Rev. D **84**, 055020 (2011) [arXiv:1012.4460 [hep-ph]]
49. **“Improving the tunings of the MSSM by adding triplets and singlet”**
K. Agashe, A. Azatov, A. Katz^{*11} and D. Kim^{*12}
Phys. Rev. D **84**, 115024 (2011) [arXiv:1109.2842 [hep-ph]]
50. **“A simple, yet subtle “invariance” of two-body decay kinematics”**
K. Agashe, R. Franceschini^{*13} and D. Kim^{*14}
arXiv:1209.0772 [hep-ph]
Phys. Rev. D **88**, 057701 (2013)
51. **“Natural Islands for a 125 GeV Higgs in the scale-invariant NMSSM”**
K. Agashe, Y. Cui^{*15} and R. Franceschini^{*16}.
arXiv:1209.2115 [hep-ph]
JHEP **1302**, 031 (2013)
52. **“Using Energy Peaks to Count Dark Matter Particles in Decays”**
K. Agashe, R. Franceschini^{*17}, D. Kim^{*18} and K. Wardlow^{*19}.
arXiv:1212.5230 [hep-ph]
Phys. Dark Univ. **2**, 72 (2013)
53. **“Using Energy Peaks to Measure New Particle Masses”**
K. Agashe, R. Franceschini^{*20} and D. Kim^{*21}.
arXiv:1309.4776 [hep-ph]
JHEP **1411**, 059 (2014)

⁵graduate student

⁶graduate student

⁷graduate student

⁸postdoctoral fellow

⁹graduate student

¹⁰graduate student

¹¹postdoctoral fellow

¹²graduate student

¹³postdoctoral fellow

¹⁴graduate student

¹⁵postdoctoral fellow

¹⁶postdoctoral fellow

¹⁷postdoctoral fellow

¹⁸graduate student

¹⁹graduate student

²⁰postdoctoral fellow

²¹graduate student

54. **“(In)direct Detection of Boosted Dark Matter”**
 K. Agashe, Y. Cui^{*22}, L. Necib and J. Thaler.
 arXiv:1405.7370 [hep-ph]
 JCAP **1410**, 062 (2014)
55. **“Photon Cascade Decay of the Warped Graviton at LHC14 and a 100 TeV Hadron Collider”**
 K. Agashe, C. Y. Chen, H. Davoudiasl and D. Kim.
 arXiv:1412.6215 [hep-ph]
 Phys. Rev. D **91**, 076002 (2015)
56. **“Warped Dipole Completed, with a Tower of Higgs Bosons”**
 K. Agashe, A. Azatov, Y. Cui^{*23}, L. Randall and M. Son.
 arXiv:1412.6468 [hep-ph]
 JHEP **1506**, 196 (2015)
57. **“Mass Measurement Using Energy Spectra in Three-body Decays”**
 K. Agashe, R. Franceschini, D. Kim and K. Wardlow^{*24}.
 arXiv:1503.03836 [hep-ph]
 JHEP **1605**, 138 (2016)
58. **“Energy spectra of massive two-body decay products and mass measurement”**
 K. Agashe, R. Franceschini, S. Hong^{*25} and D. Kim.
 arXiv:1512.02265 [hep-ph]
 JHEP **1604**, 151 (2016)
59. **“Warped Seesaw mechanism is Physically Inverted”**
 K. Agashe, S. Hong^{*26} and L. Vecchi^{*27}.
 arXiv:1512.06742 [hep-ph]
 Phys. Rev. D **94**, no. 1, 013001 (2016)
60. **“Top quark mass determination from the energy peaks of b-jets and B-hadrons at NLO QCD”**
 K. Agashe, R. Franceschini, D. Kim and M. Schulze.
 arXiv:1603.03445 [hep-ph]
 Eur. Phys. J. C **76**, no. 11, 636 (2016)
61. **“Flavor Universal Resonances and Warped Gravity”**
 K. Agashe, P. Du^{*28}, S. Hong^{*29} and R. Sundrum.
 arXiv:1608.00526 [hep-ph]
 JHEP **1701**, 016 (2017)
62. **“LHC Signals from Cascade Decays of Warped Vector Resonances”**
 K. S. Agashe, J. Collins^{*30}, P. Du^{*31}, S. Hong^{*32}, D. Kim and R. K. Mishra^{*33}.
 arXiv:1612.00047 [hep-ph]
 JHEP **1705**, 078 (2017)

²²postdoctoral fellow

²³postdoctoral fellow

²⁴graduate student

²⁵graduate student

²⁶graduate student

²⁷postdoctoral fellow

²⁸graduate student

²⁹graduate student

³⁰postdoctoral fellow

³¹graduate student

³²graduate student

³³postdoctoral fellow

63. **“LHC signals for Singlet Neutrinos from a Natural Warped Seesaw (I)”**
 K. Agashe, P. Du^{*34} and S. Hong^{*35}.
 arXiv:1612.04810 [hep-ph]
 Phys. Rev. D **97**, no. 7, 075032 (2018)
64. **“LHC Signals for Singlet Neutrinos from a Natural Warped Seesaw (II)”**
 K. Agashe, P. Du^{*36} and S. Hong^{*37}.
 arXiv:1703.07763 [hep-ph]
 Phys. Rev. D **97**, no. 7, 075033 (2018)
65. **“Dedicated Strategies for Triboson Signals from Cascade Decays of Vector Resonances”**
 K. Agashe, J. H. Collins^{*38}, P. Du^{*39}, S. Hong, D. Kim and R. K. Mishra.
 arXiv:1711.09920 [hep-ph]
 UMD-PP-017-33
66. **“Hybrid seesaw leptogenesis and TeV singlets”**
 K. Agashe, P. Du^{*40}, M. Ekhterachian^{*41}, C. S. Fong, S. Hong and L. Vecchi.
 arXiv:1804.06847 [hep-ph]
 Phys. Lett. B **785**, 489 (2018)
67. **“Detecting a Boosted Diboson Resonance”**
 K. Agashe, J. H. Collins^{*42}, P. Du^{*43}, S. Hong, D. Kim and R. K. Mishra.
 arXiv:1809.07334 [hep-ph]
 JHEP **1811**, 027 (2018)
68. **“Natural Seesaw and Leptogenesis from Hybrid of High-Scale Type I and TeV-Scale Inverse”**
 K. Agashe, P. Du^{*44}, M. Ekhterachian^{*45}, C. S. Fong, S. Hong and L. Vecchi.
 arXiv:1812.08204 [hep-ph]
 UMD-PP-018-11

(D). PUBLISHED
 CONFERENCE
 PROCEEDINGS

(1). **Refereed Conference Proceedings**

(2). **Non-Refereed Conference Proceedings**

1. **“Probing tau sneutrino NLSP scenario in gauge mediated supersymmetry breaking models at LEP-2”**

K. Agashe and D. K. Ghosh
 Pramana **51**, 289 (1998)

Report of the B-Physics and collider physics working group at the 5th Workshop on High-Energy Physics Phenomenology (WHEPP 5), Pune, India, January 1998

³⁴graduate student
³⁵graduate student
³⁶graduate student
³⁷graduate student
³⁸postdoctoral fellow
³⁹graduate student
⁴⁰graduate student
⁴¹graduate student
⁴²postdoctoral fellow
⁴³graduate student
⁴⁴graduate student
⁴⁵graduate student

2. **“Remarks on models with singlet neutrino in large extra dimensions”**
K. Agashe
Proceedings of the 9th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY01), Dubna, Russia, June 2001.
3. **“Charged Higgs decays in models with singlet neutrino in large extra dimensions”**
K. Agashe, D. K. Ghosh and M. Guchait
Pramana **60**, 392 (2003)
Report of the collider and B physics working group at the 7th Workshop on High-Energy Physics Phenomenology (WHEPP 7), Allahabad, India, January 2002
4. **“Grand Unification in RS1, Naturally (and without SUSY)”**
K. Agashe
Proceedings of the 11th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 2003), Tucson, Arizona, June 2003
5. **“Warped Extra Dimensions Signatures in B Decays”**
K. Agashe
Section 5.4.5 of arXiv:hep-ph/0503261
SLAC-R-709(2004)
Proceedings of two workshops on the Discovery Potential of an Asymmetric B Factory at 10^{36} Luminosity at the Stanford Linear Accelerator Center, California, May and October 2003.
6. **“Neutrino masses and mixings in warped extra dimensions”**
K. Agashe, P. Das, A. Dighe, P. Mehta and P. Roy
Pramana **63**, 1395 (2004) [pages 5-6 of arXiv:hep-ph/0409225]
Report of the Neutrino and astroparticle physics working group at the 8th Workshop on High-Energy Physics Phenomenology (WHEPP 8), Bombay, India, January 2004
7. **“Collider signals for Randall-Sundrum model (RS1) with SM gauge and fermion fields in the bulk”**
K. Agashe, K. Assamagan, J. Forshaw and R. M. Godbole
Pramana **63**, 1341 (2004) [pages 16-19 of arXiv:hep-ph/0410340]
Report of the high energy and collider physics working group at the 8th Workshop on High-Energy Physics Phenomenology (WHEPP 8), Bombay, India, January 2004
8. **“Top Compositeness at Colliders”**
K. Agashe
Section 4.1 of arXiv:hep-ph/0601112
FERMILAB-CONF-06-006-T(2006)
Report of the top/QCD working group at the 2005 International Linear Collider Physics and Detector Workshop and 2nd ILC Accelerator Workshop, Snowmass, Colorado, August 2005
9. **“Extra Dimensions”**
K. Agashe
Proceedings of the Theoretical Advanced Study Institute (TASI), University of Colorado, Boulder, June 2006
10. **“LHC studies inspired by warped extra dimensions”**
K. Agashe, L. Basso, G. Brooijmans, S.P. Das, H. Gray, M. Guchait, J. Jackson, M. Karagoz, S.J. Lee, R. Rosenfeld, C. Shepherd-Themistocleous and M. Vos
Section 9 of arXiv:1005.1229 [hep-ph]

CERN-PH-TH-2010-096

Report of the New Physics Working Group at the Physics at TeV Colliders Workshop, Les Houches, France, June 2009

11. **“Charged Leptons”**
B.C.K. Casey, Y. Grossman, A. Roodman (Conveners), K. Agashe et al.
Section 3 of arXiv:1205.2671 [hep-ex]
ANL-HEP-TR-12-25, SLAC-R-991
Proceedings of the workshop on Fundamental Physics at the Intensity Frontier at Rockville, MD, December 2011
12. **“Warped Extra Dimensional Benchmarks for Snowmass 2013”**
K. Agashe *et al.*
arXiv:1309.7847 [hep-ph]
Whitepaper contributed for “Snowmass 2013 Community Summer Study”
13. **“Constraining RS Models by Future Flavor and Collider Measurements: A Snowmass Whitepaper”**
K. Agashe, M. Bauer, F. Goertz, S. J. Lee, L. Vecchi, L. -T. Wang and F. Yu.
arXiv:1310.1070 [hep-ph]
Whitepaper contributed for “Snowmass 2013 Community Summer Study”
14. **“New Particles Working Group Report of the Snowmass 2013 Community Summer Study”**
Y. Gershtein, M. Luty, M. Narain, L. -T. Wang, D. Whiteson (Conveners), K. Agashe *et al.*
arXiv:1311.0299 [hep-ex]
Report of the “The Path Beyond the Standard Model - New Particles, Forces, and Dimensions” subgroup of the Snowmass 2013 (Community Summer Study) process
15. **“Snowmass 2013 Top quark working group report”**
K. Agashe, R. Erbacher, C. E. Gerber, K. Melnikov, R. Schwienhorst (Conveners) *et al.* [Top Quark Working Group Collaboration]
arXiv:1311.2028 [hep-ph]
Report of the “Fully Understanding the Top Quark” subgroup of the Snowmass 2013 (Community Summer Study) process
16. **“Planning the Future of U.S. Particle Physics (Snowmass 2013): Chapter 3: Energy Frontier”**
R. Brock, M. E. Peskin (Conveners), K. Agashe *et al.*
arXiv:1401.6081 [hep-ex]
Report of the “Energy Frontier” Group of the Snowmass 2013 (Community Summer Study) process

(E).
CONFERENCES,
WORKSHOPS, AND
TALKS

(1). Keynotes

1. **Extra Dimensions at the LHC (Plenary)**
“16th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 08)”, Seoul, Korea, June 2008
2. **Extra Dimensions at the LHC (Plenary)**
“Pheno 2009”, Symposium at the University of Wisconsin, Madison, May 2009
3. **Top conclusions (preliminary, selected, in-progress)**
“Snowmass: Seattle Energy Frontier Workshop” University of Washington, Seattle, June 2013

(2) Invited Talks

At Universities

1. **Are Heavy Scalars of 1st and 2nd Generations a Solution to the SUSY Flavor Problem?**
Particle theory seminar at Argonne National Laboratory, Illinois, February 1998
2. **Are Heavy Scalars of 1st and 2nd Generations a Solution to the SUSY Flavor Problem?**
Particle theory seminar at the University of Illinois, Chicago, February 1998
3. **An Improved Model of Direct Gauge Mediation**
Particle theory seminar at Stanford Linear Accelerator Center, California, June 1998.
4. **An Improved Model of Direct Gauge Mediation**
Particle theory seminar at Tata Institute of Fundamental Research, Mumbai, India, July 1999
5. **GUT and SUSY Breaking by the Same Field**
Particle theory seminar at the University of Washington, Seattle, October 2000
6. **GUT and SUSY Breaking by the Same Field**
Particle theory seminar at Lawrence Berkeley National Laboratory and the University of California, Berkeley, November 2000
7. **GUT and SUSY Breaking by the Same Field**
Particle theory seminar at Tata Institute of Fundamental Research, Mumbai, India, June 2001
8. **SM in Extra Dimensions: $(g-2)_\mu$ and $b \rightarrow s\gamma$**
Particle theory seminar at Stanford Linear Accelerator Center, California, July 2001
9. **SM in Extra Dimensions: $(g-2)_\mu$ and $b \rightarrow s\gamma$**
Particle theory seminar at Tata Institute of Fundamental Research, Mumbai, India, January 2002
10. **Gauge Coupling Renormalization and Unification in RS1**
Particle theory seminar at the University of Maryland, College Park, November 2002
11. **Gauge Coupling Renormalization and Unification in RS1**
Particle theory seminar at the University of Michigan, Ann Arbor, December 2002
12. **Gauge Coupling Renormalization and Unification in RS1**
Particle theory seminar at College of William and Mary, Williamsburg, Virginia, January 2003
13. **Gauge Coupling Renormalization and Unification in RS1**
Particle theory seminar at Yale University, New Haven, Connecticut, January 2003
14. **Grand Unification in RS1, Naturally (and without SUSY)**
Particle theory seminar at Boston University, Massachusetts, March 2003
15. **Grand Unification in RS1, Naturally (and without SUSY)**
Particle theory seminar at Cornell University, Ithaca, New York, May 2003

16. **Grand Unification in RS1, Naturally (and without SUSY)**
Particle theory seminar at Stanford Linear Accelerator Center, California, June 2003
17. **Grand Unification in RS1, Naturally (and without SUSY)**
Particle theory seminar at Lawrence Berkeley National Laboratory and the University of California, Berkeley, June 2003
18. **Grand Unification in RS1, Naturally (and without SUSY)**
Particle theory seminar at Fermi National Accelerator Laboratory, Batavia, Illinois, September 2003
19. **Breaking Electroweak Symmetry Strongly and Consistently with Precision Data, Flavor, and Grand Unification**
Particle theory seminar at the University of Notre Dame, South Bend, Indiana, October, 2003
20. **Breaking Electroweak Symmetry Strongly and Consistently with Precision Data, Flavor, and Grand Unification**
Particle theory seminar at Bartol Research Institute, University of Delaware, Newark, October, 2003
21. **Warped Compactifications: Flavor, Precision Tests and Grand Unification**
Particle Theory seminar at California Institute of Technology, Pasadena, November 2003
22. **Warped Compactifications: Flavor, Precision Tests and Grand Unification**
Particle Theory seminar at the University of California, San Diego, November, 2003
23. **Warped Compactifications: Flavor, Precision Tests and Grand Unification**
High energy theory seminar at Brookhaven National Laboratory, Upton, New York, December, 2003
24. **Warped Compactifications: Flavor, Precision Tests and Grand Unification**
Particle theory seminar at Columbia University, New York, February, 2004
25. **Warped Unification, Proton Stability and Dark Matter**
Particle theory seminar at Institute for Advanced Study, Princeton, April, 2004
26. **B-Factor Signals for a Warped Extra Dimension**
Particle theory seminar at Lawrence Berkeley National Laboratory and the University of California, Berkeley, May, 2004
27. **B-Factor Signals for a Warped Extra Dimension**
Particle theory seminar at the University Of Oregon, Eugene, June, 2004
28. **B-Factor Signals for a Warped Extra Dimension**
Particle physics seminar at Stanford Linear Accelerator Center, June, 2004
29. **B-Factor Signals for a Warped Extra Dimension**
Particle theory seminar at Purdue University, West Lafayette, Indiana, September, 2004

30. ***B*-Factory Signals for a Warped Extra Dimension**
Particle theory seminar at Fermi National Accelerator Laboratory, Batavia, Illinois, September 2004
31. ***B*-Factory Signals for a Warped Extra Dimension**
Particle theory seminar at the University of Maryland, College Park, September, 2004
32. ***B*-Factory Signals for a Warped Extra Dimension**
Particle theory seminar at the University of Wisconsin, Madison, November, 2004
33. ***B*-Factory Signals for a Warped Extra Dimension**
Particle theory seminar at the University of Michigan, Ann Arbor, November, 2004
34. **Warped Compactifications: Flavor, Unification and Dark Matter**
Theory Division Seminar at CERN, Geneva, Switzerland, January 2005
35. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Cornell University, February 2005
36. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Syracuse University, February 2005
37. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Fermi National Accelerator Laboratory, Batavia, Illinois, February 2005
38. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at the University of Colorado, Boulder, March 2005
39. **Particle Physics from a Warped Extra Dimension**
Particle theory seminar at the University of California, Davis, March 2005
40. **Particle Physics from a Warped Extra Dimension**
Particle theory seminar at the University of Maryland, March 2005
41. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Perimeter Institute, Waterloo, Ontario, Canada, March 2005
42. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at the Ohio State University, May 2005
43. **Warped Compactifications: Flavor, Unification and Dark Matter**
High energy theory seminar at Brookhaven National Laboratory, July 2005
44. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Stanford Linear Accelerator Center, October 2005
45. **Warped Compactifications: Flavor, Unification and Dark Matter & New and Improved Composite Higgs Models**
Particle theory seminars at Lawrence Berkeley National Laboratory and University of California, Berkeley, October 2005
46. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at the Michigan State University, October 2005
47. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at New York University, November 2005

48. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Institute for Advanced Study, Princeton, November 2005
49. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at the University of Toronto, Ontario, Canada, December 2005
50. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at the University of Wisconsin, Madison, December 2005
51. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Tata Institute for Fundamental Research, Mumbai, India, January 2006
52. **Signals for a Warped Extra Dimension**
Particle theory seminar at the University of Maryland, February 2006
53. **A Custodial Symmetry for $Zb\bar{b}$**
Particle theory seminar at Lawrence Berkeley National Laboratory and the University of California, Berkeley, July 2006
54. **Warped Compactifications: Flavor, Unification and Dark Matter**
Particle theory seminar at Boston University, Massachusetts, November 2006
55. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle Theory seminar at the University of Maryland, February 2007
56. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle Theory seminar at Cornell University, March 2007
57. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle theory seminar at the University of California, Davis, March 2007
58. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle theory seminar at Stanford Linear Accelerator Center, March 2007
59. **Warped Compactifications: Flavor, Unification and Dark Matter & Signals for Composite Higgs Models in top and W/Z Physics**
Particle theory seminars at the University of Washington, Seattle, May 2007
60. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle physics seminar at the University of Virginia, Charlottesville, October 2007
61. **Signals for Composite Higgs Models in top and W/Z Physics**
Particle theory seminar at Florida State University, November 2007
62. **Extra Dimensions at the LHC**
Particle theory seminar at the University of Delaware, May 2008
63. **Extra Dimensions at the LHC**
High energy theory seminar at the Brookhaven National Laboratory, August 2008
64. **Extra Dimensions at the LHC**
Theory Division Seminar, CERN, Geneva, Switzerland, June 2009
65. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at Tata Institute for Fundamental Research, Mumbai, India, January 2010

66. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at the University of California, Davis, March 2010
67. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at Lawrence Berkeley National Laboratory and the University of California, Berkeley, March 2010
68. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at Brookhaven National Laboratory, jointly with the State University of New York, Stony Brook, February 2011
69. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at Virginia Polytechnic Institute and State University, March 2011
70. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Particle theory seminar at the University of Delaware, May 2011
71. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
Physics Division seminar at Argonne National Laboratory, July 2011
72. **New Technique(s) for Mass Measurement at Hadron Colliders**
Particle theory seminar at the University of Virginia, November 2012
73. **New Technique(s) for Mass Measurement at Hadron Colliders**
Particle theory seminar at the University of California, Berkeley, November 2012
74. **New Technique(s) for Mass Measurement at Hadron Colliders**
Particle theory seminar at Stanford Linear Accelerator Center, November 2012
75. **Using energy-peaks to measure particle (new and old) masses**
Particle theory seminar at Rutgers University, November 2013
76. **Using energy-peaks to measure particle (new and old) masses**
Particle theory seminar at Brookhaven National Laboratory, jointly with the State University of New York, Stony Brook, April 2014
77. **Using energy-peaks to measure particle (new and old) masses**
“Topic of the Week” Seminar at LHC Physics Center, Fermi National Accelerator Laboratory, April 2014
78. **Using energy-peaks to measure particle (new and old) masses**
Pittsburgh Particle Physics, Astrophysics, and Cosmology Center (PITT-PACC) seminar, University of Pittsburgh, March 2015
79. **Using energy-peaks to measure particle (new and old) masses**
Particle theory seminar, Perimeter Institute for Theoretical Physics, October 2015
80. **Composite (PNGB) Higgs and Partially Composite (Rest of) SM (with a Broad Brush)**
Particle theory seminar, Fermi National Accelerator Laboratory, Batavia, Illinois, October 2015
81. **Using energy-peaks to measure particle (new and old) masses**
Informal Particle theory seminar, Tata Institute for Fundamental Research, Mumbai, India, January 2016
82. **Composite (PNGB) Higgs and Partially Composite (Rest of) SM (with a Broad Brush)**
Particle theory seminar, Tata Institute for Fundamental Research, Mumbai, India, January 2016

83. **Top-Partners from Composite Higgs**
Heavy Quarks and Top Subgroup Meeting, ATLAS collaboration, May, 2016
84. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Particle theory seminar, Argonne National Laboratory, January, 2017
85. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Particle theory seminar, University of Delaware, February, 2017
86. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Physics Forum, LHC Physics Center, Fermi National Accelerator Laboratory, March, 2017
87. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Particle theory seminar, Brookhaven National Laboratory, April, 2017
88. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Pittsburgh Particle Physics, Astrophysics, and Cosmology Center (PITT-PACC) seminar, University of Pittsburgh, April, 2017
89. **(Towards a) Production Model-Independent Top Mass Measurement Using B -hadron Decay Length**
CMS collaboration meeting, July 2017
90. **Using energy-peaks to measure particle (new and old) masses**
Joint theory and experiment seminar, Cornell University, September, 2017
91. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
Pheno and Vino seminar at Princeton University, January 2018
92. **(Generalized) Tri-Boson Signals from a Warped Extra Dimension**
Exotics subgroup meeting, CMS collaboration, September 2018
93. **(Generalized) Tri-Boson Signals from a Warped Extra Dimension**
Exotics subgroup meeting, ATLAS collaboration, November 2018
94. **(Generalized) Tri-Boson Signals from a Warped Extra Dimension**
Tata Institute of Fundamental Research, India, January 2019

At Conferences

95. **B-physics in RS1**
“Second Workshop on the Discovery Potential of an Asymmetric B Factory at 10^{36} Luminosity”, Stanford Linear Accelerator Center, California, October 2003
96. **B -Factory Signals for a Warped Extra Dimension**
April Meeting of the American Physical Society, Tampa, Florida, April 2005
97. **New and Improved Composite Higgs Models**
“New Approaches to Electroweak Symmetry Breaking”, Workshop at the Aspen Center for Physics, Aspen, Colorado, June-July 2005

98. **Particle Physics from a Warped Extra Dimension; Dark Matter from Extra Dimensions & Top Compositeness at Colliders**
 “International Linear Collider Physics and Detector Workshop”, Snowmass, Colorado, August 2005
99. **Signals for a Warped Extra Dimension**
 “Monte Carlo Tools for Beyond the Standard Model Physics”, Workshop at Fermi National Accelerator Laboratory, Batavia, Illinois, March 2006
100. **Signals from a Warped Extra Dimension**
 “14th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 06)”, University of California, Irvine, June 2006
101. **A Custodial Symmetry for $Zb\bar{b}$**
 “Particle Theory in Anticipation of the LHC”, Workshop at the Aspen Center for Physics, Aspen, Colorado, August-September, 2006
102. **Extra Dimensions at the LHC**
 “Revealing the Nature of Electroweak Symmetry Breaking”, Conference at the Aspen Center for Physics, Aspen, Colorado, January 2008
103. **Extra Dimensions at the LHC**
 “Anticipating Physics at the LHC”, Conference at the Kavli Institute of Theoretical Physics, University of California, Santa Barbara, June 2008
104. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
 “Lepton and Baryon Number Violation”, Workshop at the University of Wisconsin, Madison, September 2009
105. **Exotic Dark Matter at Colliders as Spin-Off of Proton Stability**
 “Waiting for the LHC: Electroweak and Flavour Dynamics”, Workshop at the Institute for Advanced Studies of the Technical University, Munich (Germany), May 2010
106. **Discovery Potential in Charged Leptons Properties and Decays**
 “Fundamental Physics at the Intensity Frontier” Workshop at Rockville, MD, December 2011
107. **(Charged) Lepton Flavor Violation in Beyond the Standard Model: an Overview**
 “7th International Workshop on the CKM Unitarity Triangle”, University of Cincinnati, Ohio, October 2012
108. **Warped Overview**
 “Snowmass 2013: Energy Frontier Workshop on BSM Physics” University of California, Irvine, January 2013
109. **Top related benchmarks**
 “Snowmass Energy Frontier Workshop” Brookhaven National Laboratory, April 2013
110. **New techniques for mass measurement at hadron colliders**
 “LHC-The First Part of the Journey”, Conference at the Kavli Institute of Theoretical Physics, University of California, Santa Barbara, July 2013
111. **Theory Shaping Experiment**
 Theory Panel session of “CSS2013 (Snowmass on the Mississippi)”, Workshop at the University of Minnesota, Minneapolis, August 2013

112. **Strongly Coupled (BSM) Higgs**
 “Experimental Challenges for the LHC Run II”, Workshop at the Kavli Institute of Theoretical Physics, University of California, Santa Barbara, April 2016
113. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
 “What’s going on at the weak scale”, CERN-CKC workshop, Jeju Island, South Korea, June 2017
114. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
 “Beyond the Standard Model-Exploring the Frontier”, The Johns Hopkins Workshop Series on Current Problems in Particle Theory, Budapest, Hungary, July 2017
115. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
 “Blueprints Beyond the Standard Model”, Workshop at the Tata Institute of Fundamental Research, Mumbai, India, January 2018
116. **Natural Seesaw in Warped/Composite Higgs framework and its LHC Signals**
 Santa Fe Summer Workshop in Particle Physics, July 2018
117. **(Generalized) Tri-Boson Signals from a Warped Extra Dimension**
 “Multi-Boson Interactions”, Workshop at the University of Michigan, Ann Arbor, August 2018

(3). Refereed Presentations

1. **Detecting SUSY Lepton Flavor Violation at the LHC**
 “Higgs and Supersymmetry”, Conference at the University of Florida, Gainesville, March 1999.
2. **GUT and SUSY Breaking by the Same Field**
 “7th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 99)”, Fermi National Accelerator Laboratory, Batavia, Illinois, June 1999.
3. **Can Multi-TeV (Top and Other) Squarks be Natural in Gauge Mediation?**
 “8th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 2K)”, CERN, Geneva, Switzerland, June-July 2000.
4. **Remarks on Models with Singlet Neutrino in Large Extra Dimensions**
 “11th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 01)”, Joint Institute for Nuclear Research, Dubna, Russia, June 2001.
5. **Universal Extra Dimensions and $b \rightarrow s\gamma$**
 Division of Particles and Fields Meeting, College of William and Mary, Williamsburg, Virginia, May 2002.
6. **Gauge Coupling Renormalization in RS1**
 “Advances in Field Theory and Applications to Particle Physics”, Workshop at the Aspen Center for Physics, Colorado, July-August, 2002.
7. **Grand Unification in RS1, Naturally (and without SUSY)**
 “Pheno 2003”, Symposium at the University of Wisconsin, Madison, May 2003.

8. **Grand Unification in RS1, Naturally (and without SUSY)**
 “11th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 03)”, University of Arizona, Tucson, June 2003.
 9. **Grand Unification in RS1, Naturally (and without SUSY)**
 “Theory and Phenomenology of Physics at the TeV Scale”, Workshop at the Aspen Center for Physics, Aspen, Colorado, June-July, 2003.
 10. **B-physics in RS1**
 “Pheno 2004”, Symposium at the University of Wisconsin, Madison, April 2004.
 11. **Flavor Physics in RS1**
 “Supersymmetry, Extra Dimensions, and Higgs Bosons”, Theory Institute at Argonne National Laboratory, Illinois May 2004.
 12. **Warped Unification, Proton Stability and Dark Matter**
 “Beyond the Higgs”, Workshop in Santa Fe, New Mexico, August 2004.
 13. **Warped Unification, Proton Stability and Dark Matter**
 “Frontiers Beyond the Standard Model II”, Conference at the University of Minnesota, Minneapolis, October, 2004.
 14. **Signals for Composite Higgs Models in top and W/Z Physics**
 “Brookhaven Forum 2007: New Horizons at Colliders”, Conference at the Brookhaven National Laboratory, Upton, New York, May-June 2007.
 15. **Using energy-peaks to measure particle (new and old) masses**
 “LHC After the Higgs” Workshop in Santa Fe, New Mexico, June-July 2014.
- (4). **Refereed Abstracts**
 - (5). **Refereed Posters**
 - (6). **Refereed Panels**
 - (7). **Non-Refereed Presentations**
 - (8). **Non-Refereed Abstracts**
 - (9). **Non-Refereed Posters**
 - (10). **Non-Refereed Panels**
 - (11). **Symposia**
 - (12). **Workshops**
 - (13). **Colloquia**
 1. **A Warped Extra Dimension**
 Department of Physics Colloquium at the University of British Columbia, Vancouver, Canada, March, 2004
 2. **Particle Physics from a Warped Extra Dimension**
 Department of Physics Colloquium at Syracuse University, February 2005

3. **Particle Physics from a Warped Extra Dimension**
Department of Physics Colloquium at the University of Colorado, Boulder, March 2005
4. **Particle Physics from a Warped Extra Dimension**
Department of Physics Colloquium at Johns Hopkins University
5. **Particle Physics from a Warped Extra Dimension**
Department of Physics Colloquium at the University of Wisconsin, Madison, December 2005
6. **Particle Physics from a Warped Extra Dimension**
Department of Physics Colloquium at Rutgers University, November 2011
7. **Particle Physics from a Warped Extra Dimension**
Department of Theoretical Physics colloquium, Tata Institute of Fundamental Research, January 2016
8. **Is the Higgs Boson Composite?**
Department of Theoretical Physics colloquium, Tata Institute of Fundamental Research, January 2018
9. **What's up with Beyond the Standard Model of Particle Physics?**
Department of Theoretical Physics colloquium, Tata Institute of Fundamental Research, India, January 2019

(F) PROFESSIONAL
PUBLICATIONS

(G) BOOK
REVIEWS, NOTES,
AND OTHER
CONTRIBUTIONS

(H) COMPLETED
CREATIVE WORKS

(I) SIGNIFICANT
WORKS IN PUBLIC
MEDIA

(J) SPONSORED
RESEARCH

(1). **Grants**

1. Department of Energy; "Research Program in Elementary Particle Theory" (#DE-FG-02-85ER40231); 2007; co-PI (with A. P. Balachandran, S. Catterall and J. Schechter); my share: about \$40,000 per year
2. National Science Foundation; "Supersymmetry and Superstrings and Physics Beyond the Standard Model" (#PHY-0652363); 2008-2010; co-PI (with S. J. Gates and R. N. Mohapatra); my share: about \$30,000 per year
3. National Science Foundation; "Particle Physics and Cosmology Beyond the Standard Model" (#PHY-0968854); 2010-2013; co-PI (with S. J. Gates and R. N. Mohapatra); about \$310,000 per year (total for the group of three)

4. National Science Foundation; “LHC-Theory Initiative Graduate Fellowship” (#PHY-0969510); 2012-2013; PI on subaward from Johns Hopkins University; \$40,000
5. National Science Foundation; “Physics Beyond the Standard Model” (#PHY-1315155); 2013-2016; co-PI (with Z. Chacko, S. J. Gates, R. N. Mohapatra and R. Sundrum); about \$490,000 per year (total for the group of five)
6. National Science Foundation; “Physics Beyond the Standard Model” (#PHY-1620074); 2016-2019; co-PI (with Z. Chacko, S. J. Gates, R. N. Mohapatra and R. Sundrum); about \$550,000 per year (total for the group of five)

(2). Contracts

(K). FELLOWSHIPS,
GIFTS AND OTHER
FUNDED
RESEARCH

(L). SUBMISSIONS (1). **Current Grant Applications**
AND WORKS IN
PROGRESS (2). **Manuscripts in Preparation**

(3). **Manuscripts under Review**

(4). **Working Papers in Preparation**

(5). **Designs in Preparation**

(M). CENTERS
FOR RESEARCH,
SCHOLARSHIP, AND
CREATIVE
ACTIVITIES

(N). PATENTS

III. TEACHING, MENTORING AND ADVISING

(A) COURSES
TAUGHT

Department of Physics, University of Maryland

- Spring 2019: Physics 272, Introductory Physics: Fields; approximate enrollment: 50
- Fall 2018: Physics 601, Theoretical Dynamics; approximate enrollment: 20
- Spring 2018: Physics 272, Introductory Physics: Fields; approximate enrollment: 55
- Fall 2017: Physics 601, Theoretical Dynamics; approximate enrollment: 25
- Spring 2017: Physics 752, Elementary Particle Physics II: Theory; approximate enrollment: 10
- Fall 2016: Physics 601, Theoretical Dynamics; approximate enrollment: 35
- Fall 2015: Physics 601, Theoretical Dynamics; approximate enrollment: 25
- Fall 2015: Physics 373, Mathematical Methods for Physics II; approximate enrollment: 30

- Spring 2015: Physics 373, Mathematical Methods for Physics II; approximate enrollment: 55
- Fall 2014: Physics 411, Intermediate Electricity and Magnetism; approximate enrollment: 35
- Spring 2014: Physics 752, Elementary Particle Physics II: Theory; approximate enrollment: 10
- Fall 2013: Physics 411, Intermediate Electricity and Magnetism; approximate enrollment: 25
- Fall 2012: Physics 411, Intermediate Electricity and Magnetism; approximate enrollment: 35
- Spring 2012: Physics 752, Elementary Particle Physics II: Theory; approximate enrollment: 5
- Fall 2011: Physics 411, Intermediate Electricity and Magnetism; approximate enrollment: 15
- Spring 2011: Physics 752, Elementary Particle Physics II: Theory; approximate enrollment: 10
- Fall 2010: Physics 624, Advanced Quantum Mechanics; approximate enrollment: 15
- Spring 2010: Physics 260, General Physics: Oscillations, Fluids, Waves, Heat, Electricity; approximate enrollment: 120
- Fall 2009: Physics 624, Advanced Quantum Mechanics; approximate enrollment: 20
- Spring 2009: Physics 260, General Physics: Oscillations, Fluids, Waves, Heat, Electricity; approximate enrollment: 120
- Fall 2008: Physics 624, Advanced Quantum Mechanics; approximate enrollment: 30
- Spring 2008: Physics 260, General Physics: Oscillations, Fluids, Waves, Heat, Electricity; approximate enrollment: 100
- Fall 2007: Physics 858, Theory and Phenomenology of Extra Dimensions; approximate enrollment: 10

Department of Physics, Syracuse University

- Spring 2007: Physics 885, Quantum Field Theory; approximate enrollment: 10
- Spring 2006: Physics 880, Theory and Phenomenology of Extra Dimensions; approximate enrollment: 5

Department of Physics, University of Oregon

- Spring 2001: Physics 415, Quantum Physics; approximate enrollment: 20

(B). TEACHING INNOVATIONS

- (1). Major Programs Established**
- (2). Education Abroad Established**
- (3). Software, Applications, Online Education**
- (4). Instructional Workshops and Seminars Established**
- (5). Course or Curriculum Development**

Department of Physics, University of Maryland

- Theory and Phenomenology of Extra Dimensions, Physics 858

Department of Physics, Syracuse University

- Theory and Phenomenology of Extra Dimensions, Physics 880

(C) ADVISING:
RESEARCH OR
CLINICAL

(1). Undergraduate

- Mandeep Bedi, 2009 (research project on extra dimensions), software engineer at Palantir Technologies
- A few students (as part of a course on experimental high-energy physics research) during each Spring semester, 2016-present

(2). Master's

(3). Doctoral

- Aleksandr Azatov, 2008-2010 (Co-chair), Faculty at SISSA, Trieste, Italy
- Lijun Zhu, 2007-2010, Data Scientist at Facebook
- Doojin Kim, 2008-2013, Postdoctoral Fellow, CERN
- Kyle Wardlow, 2011-2015, Developer, Education Software Technology, Wolfram Research Inc.
- Sungwoo Hong, 2013-2017, Outstanding Graduate Assistant Award (2015), Hans Bethe Postdoctoral fellow, Cornell University
- Peizhi Du, 2015-present, awarded the Ann G. Wylie fellowship for Fall 2018
- Majid Ekhterachian, 2016-present

(4). Postdoctoral

- Dr. Manuel Toharia, 2006-2010, Faculty at Dawson College and Research associate at Concordia University, Canada
- Dr. Takemichi Okui, 2007-2009, Associate professor at Florida State University
- Dr. Andrey Katz, 2008-2011, Faculty position at University of Geneva and CERN
- Dr. Daniel Stolarski, 2010-2013, Faculty position at Carleton University, Canada
- Dr. Yanou Cui, 2011-2014, Assistant Professor, University of California, Riverside
- Dr. Roberto Franceschini, 2011-2014, Faculty position at the University of Rome, Italy
- Dr. Luca Vecchi, 2012-2015, Postdoctoral Fellow at EPFL, Lausanne, Switzerland
- Dr. Prashant Saraswat, 2013-2016, Postdoctoral fellow, California Institute of Technology
- Dr. David Curtin, 2014-2017, Faculty position at the University of Toronto, Canada
- Dr. Yuhsin Tsai, 2015-present
- Dr. Jack Collins, 2016-present
- Dr. Michael Geller, 2016-2018

- Dr. Zhen Liu, 2018-present
- Dr. Gustavo Maques-Tavares, 2018-present

(4). Other Research Directions (K-12 Interactions)

(D). MENTORSHIP

(E). ADVISING:
OTHER THAN
RESEARCH
DIRECTION

(1). Undergraduate

- 4 students (currently): Graham Hyde, Sean Kim, Jason Campanella, Derrick Choi

(2). Master’s

(3) Doctoral

- 3 students (currently): Saurabh Kadam, Dawid Brzeminski, Yuxun Guo

(4). Post-doctoral

(F).
PROFESSIONAL
AND EXTENSION
EDUCATION

(1). Professional Programs Established

(2). Major Extension Programs

(3) Workshops

- Co-organizer, Workshop at the Maryland Center for Fundamental Physics, May 2008
- Co-organizer, *Strongly Coupled Physics Beyond the Standard Model*, School and Workshop at the Abdus Salam International Center for Theoretical Physics, Trieste, Italy, January 2012
- Member, Scientific Organizing Committee for the workshop *Lattice for Beyond the Standard Model Physics* at the Lawrence Livermore National Laboratory, California, April 2015
- Co-convener for “Alternative Theories” track for the 23rd *International Conference on Supersymmetry and Unification of Fundamental Interactions* (SUSY 2015), Lake Tahoe, California, August, 2015
- Co-convener for the “Alternatives to Supersymmetry” session during the 27th *International Conference on Supersymmetry and Unification of Fundamental Interactions* (SUSY2019), Texas A&M University, May 2019
- Co-convener for Working Group on “Beyond the Standard Model” at the 2019 Division of Particles and Fields meeting of the American Physical Society (DPF2019), Northeastern University, Boston, July-August, 2019

(4). Other

Thesis committee member (non-Chair)

- PhD. : 26
- PhD. proposal defense: 3
- Honors (undergraduate): 1

Research Advising for High School students

- Srinivas Vasudevan (senior student from Montgomery Blair), research project on the idea of supersymmetry which received a semi-finalist position in the Intel and Siemens High School Science competitions

(G). OTHER
TEACHING
ACTIVITIES

Lectures at Schools

- “Extra Dimensions” at Theoretical Advanced Study Institute (TASI), University of Colorado, Boulder, June 2006
- “Beyond the Standard Model” at the Coordinated Theoretical-Experimental Project on QCD (CTEQ) school, University of Wisconsin, Madison, July 2011
- “Beyond the Standard Model” at the Coordinated Theoretical-Experimental Project on QCD (CTEQ) school, University of Pittsburgh, July 2017

IV. SERVICE AND OUTREACH

(A) EDITORSHIPS, (1). **Editorships**
EDITORIAL
BOARDS, AND
REVIEWING
ACTIVITIES

- **“Extra Space Dimensions”**
K. Agashe and A. Pomarol (Editors)
New Journal of Physics 12, 075010 (2010)
Focus issue

(2). **Editorial Boards**

(3). **Reviewing Activities for Journals and Presses**

Referee for the journals: *Physical Review Letters*, *Physical Review D*, *Nuclear Physics B*, *Journal of High Energy Physics*, *International Journal of Modern Physics A*, *Physics Letters B*, *New Journal of Physics*, *Advances in High Energy Physics & European Physical Journal C*

Activities for *Review of Particle Physics* by the Particle Data Group, Lawrence Berkeley National Laboratory: referee for reviews (in general); “overseer” of data listings and reviews for the topic of “technicolor and compositeness” (2013-present)

(4). **Reviewer for Agencies and Foundations**

- Grant proposals for National Science Foundation, 2008-present
- Physics Frontiers Centers proposal, National Science Foundation, 2008
- Grant proposal for Israeli Science Foundation, 2009
- Grant proposal, French National Research Agency
- Marie Skłodowska-Curie Fellowship

(5). **Reviewing Activities for Conferences**

- Sorting abstracts for April meeting of American Physical Society, 2013, 2014

(B) COMMITTEES, (1). **Campus Service – Department**
PROFESSIONAL &
CAMPUS SERVICE

- Physics Department (University of Maryland) Salary Committee, 2018-present
- Physics Department Education Committee, 2017-present
- Physics Department (University of Maryland) Assignment of undergraduate teaching assistants, 2016-present
- Physics Department (University of Maryland) Appointment, Promotion and Tenure Committee, 2013-2014
- Physics Department (University of Maryland) Promotion committee of Dr. Michelle Girvan (from Associate to Full Professor), 2017

- Physics Department (University of Maryland) Promotion committee of Dr. Arpita Upadhyaya (from Assistant to Associate Professor), 2013
- Physics Department (University of Maryland) Elementary Particle Theory Faculty Search Committee, 2011-2012, 2015-2016 and 2016-2017
- Physics Department (University of Maryland) Expanded Qualifier Examination Committee, intermittently
- Physics Department (University of Maryland) Graduate Admissions Committee, 2010-present
- Physics Department (University of Maryland) Colloquium Committee, 2008-2009
- Organizer, Joint particle theory and experiment and joint University of Maryland and Johns Hopkins University meetings, 2007-present
- Organizer, Elementary Particle Theory Seminars (Physics 759) at the University of Maryland, 2009-present
- Conducting Physics GRE preparation for undergraduates, Fall of 2011, 2012 and 2013
- Lecturer in Physics 299C (“Special Problems in Physics”: Undergraduate Physics Colloquium Series) at the University of Maryland, Winter 2008 & Winter 2010
- Lecturer in “Foundations and Frontiers of Physics” (Seminar for Graduate Students) at the University of Maryland, Spring 2008, 2012, 2013 and 2015
- Member of Physics Council at the University of Maryland, 2008-2010
- Setting and grading problems for qualifying examination in Physics department at the University of Maryland, intermittently
- Physics Department (Syracuse University) Colloquium Committee, 2006-2007
- Organizer, Joint Syracuse University-Cornell University particle theory seminars, 2006

(2). Campus Service – College

- College of Computer, Mathematical and Natural Sciences (University of Maryland) Physics Department Chair Review Committee, 2010-2011

(3). Campus Service - University

(4). Campus Service - Special Administrative Assignment

(5). Campus Service - Other

- “Freshman Forum” (orientation course for freshman students), Syracuse University, 2006

(6). Offices and Committee membership

(7). Leadership Roles in Meetings and Conferences

- Co-convenor, *Fully Understanding the Top Quark*, a subgroup of the High Energy Frontier Study Group of *Snowmass 2013*, a process of long-term planning for US high-energy physics initiated by the American Physical Society’s Division of Particles and Fields, 2012-2013

(8). Other Non-University Committees, Memberships, Panels

(C). EXTERNAL
SERVICE AND
CONSULTING

(D).
NON-RESEARCH
PRESENTATIONS

(1). Outreach Presentations

- Volunteer for Maryland Day program of Physics Department (University of Maryland), 2009, 2010, 2011, 2012, 2013, 2014, 2017 and 2018

(E). MEDIA
CONTRIBUTIONS

(F). COMMUNITY
& OTHER SERVICE

V. AWARDS, HONORS AND RECOGNITION

(1). RESEARCH
FELLOWSHIPS,
PRIZES AND
AWARDS

- *Leon Madansky Postdoctoral Fellowship*, Johns Hopkins University, 2001-2004
- *Distinguished Scholar*, Fermi National Accelerator Laboratory, 2017-2019

(2). TEACHING
AWARDS

(3). SERVICE
AWARDS AND
HONORS

(4). RECOGNITION
IN MEDIA

(5). OTHER
SPECIAL
RECOGNITION

- *President of India Gold Medal*, Indian Institute of Technology, Bombay, India, 1993 (1st rank among 350 seniors graduating from all the undergraduate departments)
- *Berkeley Fellowship for Graduate Study*, University of California, Berkeley, 1993-1995 & 1997-1998