

CURRICULUM VITAE  
**Christopher F. Kolda**

*Mailing Address:*  
Department of Physics  
225 Nieuwland Hall  
University of Notre Dame  
Notre Dame, Indiana 46556

*Office:* 228 Nieuwland Hall  
*Phone:* (574) 631-6823  
*Fax:* (574) 631-5952  
*E-mail:* ckolda@nd.edu

**Education**

- 1995            **University of Michigan** Ann Arbor, Michigan  
Ph.D. in Physics (Particle Theory).
- 1992            **University of Michigan** Ann Arbor, Michigan  
M.S. in Physics.
- 1990            **Johns Hopkins University** Baltimore, Maryland  
B.A. in Physics and Astronomy.

**Research and Teaching Positions**

- 2000-present    **University of Notre Dame:**
- 2015-            Glynn Family Honors Collegiate Professor of Physics
  - 2014-            Director, Glynn Family Honors Program
  - 2013-            Department Chair, Physics
  - 2011-15        Professor of Physics
  - 2009-11        Provost Fellow
  - 2006-09        Associate Chair & Director of  
                    Undergraduate Studies, Department of Physics
  - 2004-11        Associate Professor of Physics
  - 2000-04        Assistant Professor of Physics
- 1998-00        **Lawrence Berkeley National Laboratory &  
University of California - Berkeley**, Postdoctoral Fellow  
Postdoctoral research in particle physics.
- 1995-98        **Institute for Advanced Study**, Member  
Postdoctoral research in particle physics.

**Awards and Honors**

- 2011            **Shilts/Leonard Teaching Award**, University of Notre Dame  
For outstanding teacher in the College of Science
- 2008-09        **Kaneb Faculty Fellow**, University of Notre Dame
- 2007            **Thomas P. Madden Award**, University of Notre Dame  
For outstanding teaching of first-year students.
- 2005            **Kaneb Teaching Award**, University of Notre Dame
- 1997-98        **Helen and Martin Chooljian Member**, Institute for Advanced Study  
Endowed membership in the School of Natural Sciences.

- 1994-95      **Rackham Fellow**, University of Michigan  
For outstanding graduate research program.
- 1990-93      **Regents-Crane Fellow**, University of Michigan  
For an outstanding graduate student in physics.
- 1990          **Donald E. Kerr Award**, Johns Hopkins University  
Graduated first in class & outstanding undergraduate in physics.
- 1989          **Phi Beta Kappa**, Johns Hopkins University

### Invited Conference Talks & Workshops

- “Ultraviolet Freeze-in,” at the 2015 Phenomenology Symposium (Pheno 2015), May 2015, University of Pittsburgh, Pittsburgh, Pennsylvania (presented by F. Elahi).
- “The Higgs Boson Signal at the LHC,” at the 2012 Workshop at the Center for Underground Theoretical Physics (CETUP\*), July 2012, Deadwood/SURF, South Dakota.
- “The Little Hierarchy Problem in a Generalized NMSSM,” at the 2012 Workshop at the Center for Underground Theoretical Physics (CETUP\*), July 2012, Deadwood/SURF, South Dakota.
- “The Little Hierarchy Problem in a Generalized NMSSM,” at the Scalars 2011 Conference, August 2011, Warsaw, Poland.
- “The End of the Wilderness Years? A Theoretical Perspective,” at the annual US-CMS Collaborations Meeting, May 2011, Notre Dame, Indiana.
- “Constraints on a Light Charged Higgs,” at the 3rd International Workshop on Prospects for Charged Higgs Discovery at Colliders, September 2010, Uppsala University, Sweden.
- “Lifting the Higgs Mass in a Generalized Next-to-Minimal Supersymmetric Standard Model,” at the 12th International Conference from the Planck Scale to the ElectroWeak Scale (Planck 2010), June 2010, CERN, Geneva, Switzerland.
- “Lifting the Higgs Mass in a Generalized NMSSM,” at the 2010 Phenomenology Symposium (Pheno '10), May 2010, University of Wisconsin, Madison, Wisconsin (presented by J.P. Olson).
- “Light Higgs Mass in the S-MSSM,” at the 2010 Phenomenology Symposium (Pheno '10), May 2010, University of Wisconsin, Madison, Wisconsin (presented by A. de la Puente).
- “Minimal Flavor Violation and Neutrinoless Double  $\beta$ -Decay,” at the American Physical Society Division of Particles and Fields meeting (DPF 09), July 2009, Wayne State University, Detroit, Michigan.
- Participant, Aspen Summer Workshop on Physics at the Weak Scale, June–July 2009, Aspen Center for Physics, Aspen, Colorado.
- Participant, Argonne-IIT Workshop on Collider Physics, May 2009, Illinois Institute of Technology, Chicago, Illinois.
- “Theory of Lepton Flavor Violation,” at the 2009 Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2009), May 2009, San Diego, California.
- Participant, Workshop on the Physics of the Large Hadron Collider, January 2008, Michigan Center for Theoretical Physics, University of Michigan, Ann Arbor, Michigan.
- Participant, Workshop on Grand Unification and Proton Decay, July 2007, Abdus Salam International Center for Theoretical Physics, Trieste, Italy.
- “Higgs Physics in the Standard Model and Supersymmetry,” lecture series presented at the 2007 BCSPIN Summer School in Particle Physics And Cosmology, June 2007, Chinese National Academy of Science, Beijing, China.
- “Supersymmetry and the Prospects for a Super-B Factory,” at the *3<sup>rd</sup> Workshop on a Super Flavor Factory (SuperB III)*, June 2006, Stanford Linear Accelerator Center, California.

- “New Physics, Minimal Flavor Violation and Double  $\beta$ -Decay,” at the *14<sup>th</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY-06)*, June 2006, Irvine, California.
- “Conference Summary: Electroweak Physics and Beyond,” at the *2006 Conference on the Intersections of Particle and Nuclear Physics (CIPANP '06)*, June 2006, Rio Mar, Puerto Rico.
- “SUSY at Hadron Colliders: What to Expect and When to Expect It,” at the Aspen Summer Workshop, June 2005, Aspen Center for Physics, Aspen, Colorado.
- “Bridging the Gap between High Energy and High Precision,” at the *2005 Argonne Theory Institute Workshop on Higgs, SUSY and Extra Dimensions*, May 2005, Argonne National Laboratory, Illinois (presented by B. Dudley).
- “Minimal Flavor Violation at Large  $\tan\beta$ : A Review,” at the *12<sup>th</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY-04)*, June 2004, Tsukuba, Japan.
- “New Physics Phases in CP Violation: Supersymmetry” at the *Super B-Factory Workshop in Hawaii*, January 2004, University of Hawaii, Honolulu, Hawaii.
- “CP Asymmetries in Supersymmetry,” at the *2<sup>nd</sup> Workshop on the Discovery Potential of an Asymmetric B-Factory at  $10^{36}$  Luminosity*, October 2003, Stanford Linear Accelerator Center, California.
- “Penguins of a New Breed: Flavor Changing in the SUSY Higgs Sector,” at the *2<sup>nd</sup> International Conference on Flavor Physics*, October 2003, Korean Institute for Advanced Study, Seoul, Korea.
- “Higgs-Mediated Lepton Flavor Violation” at the *11<sup>th</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY-03)*, June 2003, Tucson, Arizona.
- “Flavor Changing at Large  $\tan\beta$ ” at the *2002 Argonne Theory Institute Workshop*, September 2002, Argonne National Lab, Illinois.
- “Rare  $B^0$  Decays at the Tevatron” at the *10<sup>th</sup> International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY-02)*, June 2002, Hamburg, Germany.
- “The Cosmological Triple Coincidence Problem” at the *APS Division of Particle and Fields 2002 Conference (DPF2002)*, May 2002, Williamsburg, Virginia.
- “Electroweak Physics, Quintessence and the Cosmic Coincidence Problem” at the annual United Kingdom *Beyond the Standard Model Cosmology Meeting*, August 2001, Ambleside, England.
- “Particle Physics in an Accelerating Universe” at the *2001 Argonne Theory Institute Workshop*, June 2001, Argonne National Lab, Illinois.
- “Extracting parameters from supersymmetric heavy Higgs bosons” at the *Fermilab 2000 Linear Collider Workshop*, October 2000, Batavia, Illinois.
- “Flavor Violation as a Probe of the MSSM Higgs Sector” at the *VII International Symposium on Particles, Strings and Cosmology (PASCOS-99)*, December 1999, Lake Tahoe, California.
- “Branes and 5-Dimensional Cosmology” at the *Cosmic Genesis and Fundamental Physics Workshop*, October 1999, Rohnert Park, California.
- “Quintessence and Supersymmetry” at the *VII International Conference on Supersymmetries in Physics (SUSY-99)*, June 1999, Fermilab, Illinois.
- “Constraints and Signals for Extra Dimensions” at the *VII International Conference on Supersymmetries in Physics (SUSY-99)*, June 1999, Fermilab, Illinois.
- “Higgs Physics and Signals for Extra Dimensions” at the *Symposium on Phenomenology for the Third Millennium (PHENO 99)*, April 1999, Madison, Wisconsin.
- “Gauge Mediated Supersymmetry Breaking: Theory and Signals” at the *Hadron Collider Physics XII Conference*, June 1997, Stony Brook, New York.

- “Gauge Mediated SUSY Breaking: Introduction, Review and Update” [hep-ph/9707450](#), at the *V International Conference on Supersymmetries in Physics (SUSY-97)*, May 1997, Philadelphia, Pennsylvania.
- “Semi-Perturbative Unification” at the *International Symposium on Recent Developments in Phenomenology (PHENO 97)*, March 1997, Madison, Wisconsin.
- Participant, Workshop on New Directions for High Energy Physics (Snowmass '96), June 1996, Aspen, Colorado.
- “Introduction to Gauge-Mediated Supersymmetry Breaking” at the *Summer Workshop on the Flavor and Gauge Hierarchy Problems*, June 1996, Aspen Center for Physics, Aspen, Colorado.
- “Leptophobic  $U(1)$ 's and  $R_b, R_c$  at LEP” at the *IV International Conference on Supersymmetries in Physics (SUSY-96)*, May 1996, College Park, Maryland.
- “Leptophobic  $U(1)$ 's and the  $R_b-R_c$  Crisis” at the *International Symposium on Recent Developments in Phenomenology (PHENO 96)*, April 1996, Madison, Wisconsin.
- “D-Terms and Flat Directions” at the *Southeastern Regional Mini-Workshop on Supersymmetry*, November 1995, Wakulla Springs, Florida.
- “Is  $R_b$  at LEP telling us that supersymmetry will soon be found?” at the *IV International Conference of Physics Beyond the Standard Model*, December 1994, Lake Tahoe, California.
- “Constrained Minimal Supersymmetry with Stringy Assumptions” at the *International Workshop on Supersymmetry and Unification of the Fundamental Interactions (SUSY-94)*, May 1994, Ann Arbor, Michigan.

### General Public & Outreach Lectures

- “What’s Next for the LHC and for Particle Physics?” given to students in the ISPI/China program, August 2015.
- Shamrock Series TED Talk, Notre Dame-Arizona State Football Game, Dallas, Texas, Oct 2013.
- “The Higgs Boson and the Search for Nothingness,” 28th Rimes Memorial Lecture, Spring Hill College, Mobile, Alabama, Mar 2013.
- Presentation on the Higgs Boson discovery to the Michigan Astronomical Society, Sep 2012.
- Presentation on the Higgs Boson discovery to the QuarkNet/RET teachers, Aug 2012.
- Interviewed on South Dakota Public Radio on discovery of Higgs boson, Feb 27, 2012.
- “A Modern View of Symmetry,” presentation to the Michiana Astronomical Society, May 18, 2009.
- “An Introduction to the Standard Model,” given as a QuarkNet master class, March 14, 2008.
- “A New Spin on Unification: Symmetry and Supersymmetry at the Physics Frontier,” presented at Aquinas College, Grand Rapids, Michigan, February 11, 2008.
- “Welcome from the Faculty,” address to incoming class of 2011 and their parents, freshman orientation, August 2007.
- “God’s Dice: Einstein and the Journey from the Wedgwood Kilns to the Uncertainty Principle,” Tennessee Football Game Pre-Lecture, University of Notre Dame, November 5, 2005.
- “Relativity and Einstein,” Miller Memorial Lecture (Reunion Weekend), University of Notre Dame, June 4, 2005.
- “Einstein’s Miracle Year,” Culver Academy, Culver, Indiana, May 18, 2005.
- “Einstein’s Last Quest: The Search for Extra Dimensions and Parallel Universes”, Miller Memorial Lecture, University of Notre Dame, February 24, 2005.

### **Current University & Departmental Duties**

Director, Glynn Family Honors Program. 2014 -  
Department Chair (Physics). 2013 -  
Provost's Department Chairs Advisory Group. 2013 - *present*. *Chair*, 2014 -  
College of Science College Council. 2009 -  
Glynn Family Honors Program Advisory Board. 2008 -  
Committee for Appointments and Promotions (Physics). 2011 - *present*.  
Zhejiang-Notre Dame Faculty Steering Committee. 2014 -  
Westville Penitentiary Education Initiative, Faculty Steering Committee. 2012 -

### **Previous University & Departmental Duties**

University Accreditation Committee. 2013 - 2014.  
Associate Chair (Physics). 2012 - 2013.  
Provost Fellow. 2009 - 2012.  
Chair, Notre Dame *ad hoc* Committee on ePortfolios. 2011 - 2013.  
Acting Director of Undergraduate Studies (Physics). *Fall 2010*.  
Associate Department Chair & Director of Undergraduate Studies (Physics). 2006 - 2009.  
University Committee on First Year of Studies. 2008 - 2010.  
Drafting Committee, Notre Dame Undergraduate Vision Statement. 2007 - 2009.  
Undergraduate Curriculum Committee (Physics). *Chair*: 2006 - 2009. *Member*: 2009 - *present*.  
Course Offering Committee (Physics). *Chair*, 2006 - 2009. *Member*, 2009 - 2013.  
Strategic Planning Committee (Physics). *Chair*, 2004 - 2005.  
Colloquium Committee (Physics). *Chair*, 2003 - 2004.

Also serve, or served, on university valedictorian selection committee, departmental graduate and undergraduate recruitment committees, space utilization committee, departmental awards committee, Madden Award selection committee, Oxford Program selection committee, COS-JAM and Undergraduate Scholars Conference organizing committees, department teaching advisory committee and faculty mentoring committees.

### **Professional Memberships, Activities and Visiting Positions**

Member of the American Physical Society, Division of Particles and Fields, 1994 – present, and Forum on Physics & Society, 2000 – present.  
Member of the Organizing Committee and Co-Editor of the Proceedings, *SUSY-94 Workshop*, May 1994, Ann Arbor, Michigan.  
Member of the Supersymmetric Theory Working Group, *Workshop on New Directions for High Energy Physics (Snowmass '96)*, June 1996, Aspen, Colorado.  
Participant in the Aspen Summer Workshops, Aspen Center for Physics, 1996, 1997, 1999, 2001, 2005 and 2009.

Contributor to the *Review of Particle Physics*, 1997 – present.

Visiting Scientist, University of Lancaster (England), Nov – Dec 1998.

Organizer of the 1999 LBNL Summer Visitor Program and the 1999–2000 LBNL Visitor Program.

Member of the Particle Data Group, 1999 – present.

Member, Institute for Theoretical Physics, University of California, Santa Barbara, Nov – Dec 1999.

Member of the “Scales Beyond 1 TeV” Working Group, *Workshop on the Future of Particle Physics (Snowmass '01)*, June 2001, Aspen, Colorado.

Convenor, *Beyond the Standard Model Sessions*, APS Division of Particles and Fields 2002 Conference (DPF2002), May 2002, Williamsburg, Virginia.

Visiting Scientist, CERN, May-June 2002.

Scientific Organizing Committee, *11th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY '03)*, June 2003, Tucson, Arizona.

Visiting Scientist, University of Pennsylvania, November 2004.

Scientific Organizing Committee, *13th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY-05)*, Durham, England.

National Science Foundation (NSF) High-Energy Physics Review Panel, 2005 & 2006.

Scientific Organizing Committee, *Conference on the Intersections Between Particle and Nuclear Physics (CIPANP '06)*, June 2006, Puerto Rico.

Local Organizing Committee, 2008 Midwest Relativity Meeting, Oct 2008, Notre Dame.

Referee for the journals *Physical Review*, *Physical Review Letters*, *Physics Letters*, *Nuclear Physics*, and the *Journal of High-Energy Physics*.

### Grants and Funding

2012–15	<b>National Science Foundation</b> , “Electroweak Physics and New Dynamics at the LHC.” <i>Co-PI</i> . \$420K.
2010–13	<b>National Science Foundation</b> , “Probing the Physics of the Hierarchy Problem III.” <i>Sole PI</i> . NSF-PHY09-69445, \$100K.
2004–08	<b>National Science Foundation</b> , “Probing the Physics of the Hierarchy Problem II.” <i>Sole PI</i> . NSF-PHY03-55066, \$105K.
2001–04	<b>National Science Foundation</b> , “Probing the Physics of the Hierarchy Problem.” <i>Sole PI</i> . NSF-PHY00-98791, \$156K.

### Theses Directed & Postdocs Mentored

2009	<b>B. Dudley</b> , Ph.D. Thesis, “Flavor Effects on Beyond the Standard Model Physics.”
2004	<b>J. Lennon</b> , Ph.D. Thesis, “Phenomenology of Supersymmetry with Large $\tan \beta$ .”
2004	<b>M. Byrne</b> , Ph.D. Thesis, “Phenomenological Studies in Supersymmetric and Higher Dimensional Extensions of the Standard Model of Particle Physics.”
2013-	<b>J. Bramante</b> , Postdoctoral research fellow.
2013-15	<b>J. Unwin</b> , Postdoctoral research fellow. Currently visiting faculty at University of Illinois, Chicago.

2003-05      **I. Gogoladze**, Postdoctoral research fellow. Currently at Bartol Institute, University of Delaware.

2001            **William Lahneman**, Undergraduate Honors Thesis, "Modelling Quintessence."

### Teaching Experience

Science 10101      **The Cosmos, Earth and Genome.** Taught Springs 2004 - 2006 with a geologist and biologist. Course introduces non-science majors to the evolution of life from the Big Bang to the development of humans. This was an entirely new course, the physics portions of which I developed at the request of the Dean of Science.  
(101)

Physics 10310      **General Physics I.** Taught Spring 2001 and Falls 2001 - 2002 to freshman College of Engineering and College of Science majors. Course covers Newtonian mechanics and special relativity. Responsibilities included lectures and demonstrations, organizing laboratories, and coordinating teams of graders and teaching assistants. Also taught accompanying lab in Fall 2002.  
(131)

Physics 10342      **Modern Physics: From Quarks to Quasars.** Taught Springs of 2002 - 2005, 2007 - 2008, & 2010 to freshman honors students in the College of Arts & Letters. Covers basics of Newtonian mechanics, special and general relativity, early quantum theory, and cosmology. Course for non-science honors students but centered on problem-solving; an entirely new course developed at request of Honors Program.  
(192)

Physics 10411      **General Physics A/M.** Taught fall 2012. Newtonian mechanics for first-year physics majors.

Physics 20452      **Mathematical Methods in Physics II.** Taught for second half of fall 2015 semester to sophomore physics majors. Linear algebra, partial differential equations, special functions.

Physics 23411      **Sophomore Seminar.** Taught Falls of 2004 - 2009. Course introduces sophomore physics majors to research and physics problem-solving skills.  
(247)

Physics 40453      **Quantum Mechanics I.** Taught Falls 2005 - 2007. An undergraduate course on quantum mechanics for our junior and senior physics majors.  
(453)

Physics 40454      **Quantum Mechanics II.** Taught Spring 2006. Second half of Physics 40453.  
(454)

Physics 43411      **Senior Seminar.** Taught Falls 2013 to 2015 to senior physics majors. Seminar to help students prepare for and apply to graduate school and graduate fellowships.

Physics 451        **Astrophysics.** Taught Fall 2000 to junior and senior physics majors. Course provides an introduction to general relativity, then covers astrophysical measurements, stellar structure and evolution, and cosmic history.

Physics 50472      **Relativity: Special and General.** Taught Spring 2003 for graduate students and senior physics majors. Course covers advanced topics in special and general relativity, differential geometry, tensor analysis, and cosmology.  
(481/581)

Physics 625        **Special Topics in Particle Physics.** Taught/organized Fall 2002. Graduate course covering selected topics in field theory and particle physics.

- Physics 70003 **Mathematical Methods in Physics.** Taught Falls 2009 - 2010 to entering graduate students. Introduction to tensors, group theory, complex functions, ordinary and partial differential equations, integral transforms, and orthogonal functions, as used in advanced physics.
- Physics 80601 **Elementary Particle Physics I.** Taught Springs 2011 - 2013 to 2nd year graduate students. A course on high-energy physics, including the structure and tests of the Standard Model, as well as experimental techniques. One of the main topics is the physics of the Large Hadron Collider.
- Grad Ed 60601 (601) **Preparing for an Academic Career in the Sciences.** Taught Summers of 2004 - 2013 to science and engineering graduate students. Course covers how to apply for a job, teaching and course preparation.
- ALHN 43950 **Senior Honors Research Colloquium.** Taught Fall 2014 to seniors in the Glynn Family Honors Program. Provided instruction and guidance in completing a senior research thesis.
- ALHN 43951 **Senior Moral Problems Colloquium.** Taught Spring 2015 to seniors in the Glynn Family Honors Program. Guided discussions of modern moral issues.



## BIBLIOGRAPHY

### Refereed Publications

1. “Calculable Upper Limit on the Mass of the Lightest Higgs Boson in Perturbatively Valid Supersymmetric Theories with Arbitrary Higgs Sectors” (with G. Kane and J. Wells), [hep-ph/9210242](#), Phys. Rev. Lett. **70**, 2686-2689 (1993).
2. “Study of Constrained Minimal Supersymmetry” (with G. Kane, L. Roszkowski, and J. Wells), [hep-ph/9312272](#), Phys. Rev. **D49**, 6173-6210 (1994).
3. “Predictions of Constrained Minimal Supersymmetry with Bottom-Tau Mass Unification” (with G. Kane, L. Roszkowski, and J. Wells), [hep-ph/9404253](#), Phys. Rev. **D50**, 3498-3507 (1994).
4. “Implications of  $\Gamma(Z \rightarrow b\bar{b})$  for Supersymmetry Searches and Model Building” (with G. Kane and J. Wells), [hep-ph/9408228](#), Phys. Lett. **B338**, 219-228 (1994).
5. “Theory, Phenomenology, and Prospects for Detection of Supersymmetric Dark Matter” (with E. Diehl, G. Kane, and J. Wells), [hep-ph/9502399](#), Phys. Rev. **D52**, 4223-4239 (1995).
6. “Low-Energy Supersymmetry with D-term Contributions to Scalar Masses” (with S. Martin), [hep-ph/9503445](#), Phys. Rev. **D53**, 3871-3883 (1996).
7. “Flat Directions in the Scalar Potential of the Supersymmetric Standard Model” (with T. Gherghetta and S. Martin), [hep-ph/9510370](#), Nucl. Phys. **B468**, 37-58 (1996).
8. “Leptophobic  $U(1)$ ’s and the  $R_b-R_c$  Anomalies” (with K.S. Babu and J. March-Russell), [hep-ph/9603212](#), Phys. Rev. **D54**, 4635-4647 (1996).
9. “Experimental Consequences of a Minimal Messenger Model for Supersymmetry Breaking” (with K.S. Babu and F. Wilczek), [hep-ph/9605408](#), Phys. Rev. Lett. **77**, 3070-3073 (1996).
10. “Low-Energy Signatures of Semi-perturbative Unification” (with J. March-Russell), [hep-ph/9609480](#), Phys. Rev. **D55**, 4252-4261 (1997).
11. “Kinetic Mixing and the Supersymmetric Gauge Hierarchy” (with K. Dienes and J. March-Russell), [hep-ph/9610479](#), Nucl. Phys. **B492**, 104-118 (1997).
12. “Comments on the high- $Q^2$  HERA anomaly” (with K.S. Babu, J. March-Russell and F. Wilczek), [hep-ph/9703299](#), Phys. Lett. **B402**, 367-373 (1997).
13. “Modified parton distributions and the HERA high- $Q^2$  anomaly” (with K.S. Babu and J. March-Russell), [hep-ph/9705399](#), Phys. Lett. **B408**, 268-274 (1997).
14. “Implications of a Charged-Current Anomaly at HERA” (with K.S. Babu and J. March-Russell), [hep-ph/9705414](#), Phys. Lett. **B408**, 261-267 (1997).
15. “Implications of Generalized  $Z-Z'$  Mixing” (with K.S. Babu and J. March-Russell), [hep-ph/9710441](#), Phys. Rev. **D57**, 6788-6792 (1998).
16. “Supersymmetric D-term Inflation, Reheating and Affleck-Dine Baryogenesis,” (with J. March-Russell), [hep-ph/9802358](#), Phys. Rev. **D60**, 023504:1-12 (1999).
17. “Stabilized Singlets in Supergravity as a Source of the  $\mu$ -parameter,” (with S. Pokorski and N. Polonsky), [hep-ph/9803310](#), Phys. Rev. Lett. **80**, 5263-5266 (1998).
18. “CP Violation, Higgs Couplings, and Supersymmetry,” (with K.S. Babu, J. March-Russell and F. Wilczek), [hep-ph/9804355](#), Phys. Rev. **D59**, 016004:1-7 (1999).

19. "Supergravity Resolution of the Unification to Planck Scale Hierarchy," (with N. Polonsky), [hep-ph/9805240](#), *Phys. Lett.* **B433**, 323-327 (1998).
20. "Solving the Supersymmetric Flavor Problem with Radiative Generation of Mass Hierarchies," (with J. Feng and N. Polonsky), [hep-ph/9810500](#), *Nucl. Phys.* **B546**, 3-18 (1999).
21. "Signatures of Supersymmetry and Yukawa Unification in Higgs Decays," (with K.S. Babu), [hep-ph/9811308](#), *Phys. Lett.* **B451**, 77-85 (1999).
22. "Quintessential Difficulties," (with D. Lyth), [hep-ph/9811375](#), *Phys. Lett.* **B458**, 197-201 (1999).
23. "Electroweak Symmetry Breaking and Large Extra Dimensions," (with L. Hall), [hep-ph/9904236](#), *Phys. Lett.* **B459**, 213-223 (1999).
24. "Cosmology of One Extra Dimension with Localized Gravity," (with C. Csáki, M. Graesser and J. Terning), [hep-ph/9906513](#), *Phys. Lett.* **B462**, 34-40 (1999).
25. "Higgs-Mediated  $B^0 \rightarrow \mu^+ \mu^-$  in Minimal Supersymmetry," (with K.S. Babu), [hep-ph/9909476](#), *Phys. Rev. Lett.* **84**, 228-231 (2000).
26. "The Higgs Mass and New Physics Scales in the Minimal Standard Model," (with H. Murayama), [hep-ph/0003170](#), *JHEP* **7**, 35:1-20 (2000).
27. "Review of Particle Physics," (Particle Data Group), *Eur. Phys. J.* **C15**, 1-878 (2000).
28. "A New Perspective on Cosmic Coincidence Problems," (with N. Arkani-Hamed, L. Hall and H. Murayama), [astro-ph/0005111](#), *Phys. Rev. Lett.* **85**, 4434-4437 (2000).
29. "Bounds on charged, stable superpartners from cosmic ray production," (with M. Byrne and P. Regan), *Phys. Rev.* **D66**, 075007:1-5 (2002).
30. "Review of Particle Physics," (Particle Data Group), *Phys. Rev.* **D66**, 010001:1-974 (2002).
31. "Higgs mediated  $\tau \rightarrow 3\mu$  in the supersymmetric seesaw model," (with K.S. Babu), *Phys. Rev. Lett.* **89**: 241802:1-4 (2002).
32. "Updated implications of the muon anomalous magnetic moment for supersymmetry," (with M. Byrne and J. Lennon), *Phys. Rev.* **D67**, 075004:1-11 (2003).
33. " $B_d \rightarrow \phi K_s$  CP asymmetries as an important probe of supersymmetry" (with G. Kane, P. Ko, H. Wang, J. Park and L. Wang), *Phys. Rev. Lett.* **90**, 141803:1-4 (2003).
34. " $B \rightarrow \phi K$  and supersymmetry," (with G. Kane, P. Ko, H. Wang, J. Park and L. Wang), [hep-ph/0212092](#), *Phys. Rev.* **D70**, 035015:1-22 (2004).
35. "Review of Particle Physics," (Particle Data Group), *Phys. Lett. B* **592**, 1-1109 (2004).
36. "Review of Particle Physics" (Particle Data Group), *J. Phys. G* **33**, 1-1232 (2006).
37. "Late Decaying Dark Matter, Bulk Viscosity and the Cosmic Acceleration," (with G. Mathews and N.Q. Lan), [arXiv:0801.0853](#) [[astro-ph](#)], *Phys. Rev.* **D78**, 043525:1-9 (2008).
38. "Review of Particle Physics" (Particle Data Group), *Phys. Lett.* **B667**, 1-1340 (2008).
39. "Supersymmetric Flavor-Changing Sum Rules as a Tool for  $b \rightarrow s\gamma$ ," (with B. Dudley), [arXiv:0805.4565](#) [[hep-ph](#)], *Phys. Rev.* **D79**, 015011:1-12 (2009).
40. "The Effect of Quark Sector Minimal Flavor Violation on Neutrinoless Double Beta Decay" (with B. Dudley), [arXiv:0810.2997](#) [[hep-ph](#)], *Phys. Rev.* **D79**, 013014:1-10 (2009).
41. "Solving the Little Hierarchy Problem with a Singlet and Explicit  $\mu$ -Terms" (with A. Delgado, J.P. Olson, A. de la Puente), [arXiv:1005.1282](#) [[hep-ph](#)], *Phys. Rev. Lett.* **105**, 091802:1-4 (2010).

42. “A Gauge-Mediated Embedding of the S-MSSM” (with A. Delgado, J.P. Olson, A. de la Puente), [arXiv:1005.4901 \[hep-ph\]](#), Phys. Rev. **D82**, 035006:1-13 (2010).
43. “Review of Particle Physics” (Particle Data Group), J. Phys. G **37**, 075021:1-1422 (2010).
44. “Solving the Little Hierarchy Problem with a Light Singlet and Supersymmetric Mass Terms” (with A. Delgado and A. de la Puente), [arXiv:1111.4008 \[hep-ph\]](#), Phys. Lett. **B710**, 460 (2012).
45. “X-ray lines from R-parity violating decays of keV sparticles,” (with J. Unwin), [arXiv:1403.5580 \[hep-ph\]](#), Phys. Rev. D **90**, 023535 (2014).
46. “UltraViolet Freeze-in,” (with F. Elahi and J. Unwin), [arXiv:1410.6157 \[hep-ph\]](#), JHEP **1503**, 048 (2015).

### Other Publications

1. “Dark Matter from Supersymmetric Grand Unification,” (with G. Kane, L. Roszkowski and J. Wells), [hep-ph/9405363](#), in *Sources of Dark Matter in the Universe*, ed. by D. Cline, pp. 163-174.
2. “Upper Bounds in Low-Energy SUSY,” (with G. Kane, L. Roszkowski and J. Wells), [hep-ph/9405364](#), in *Yukawa Couplings and the Origin of Mass*, ed. by P. Ramond, pp.226-231.
3. *Proceedings of the International Workshop on Supersymmetry and Unification of Fundamental Interactions: SUSY-94*, Editor (with J. Wells), Michigan report UM-TH-94-35, September 1994.
4. “Is  $R_b$  at LEP telling us that supersymmetry will soon be found?” Michigan report UM-TH-95-04, in *Beyond the Standard Model IV*, ed. by J. Gunion, T. Han and J. Ohnemus.
5. *Supersymmetriza: Constrained Model-Building in Supersymmetry*, Ph.D. Thesis.
6. “Leptophobic  $U(1)$ ’s and  $R_b$ ,  $R_c$  at LEP,” [hep-ph/9606396](#), in *Supersymmetry '96: Theoretical Perspectives and Experimental Outlook*, ed. by R. Mohapatra and A. Rašin, Nucl. Phys. Proc. Suppl. **52A** (1997) 120-126.
7. *Report of the Supersymmetry Theory Working Group: Snowmass '96*, (with J. Amundson, *et al.*), [hep-ph/9609374](#), in the *Proceedings of 1996 DPF/DPB Summer Study on New Directions for High-Energy Physics*, pp. 655-668.
8. “Gauge-Mediated Supersymmetry Breaking: Introduction, Review and Update,” [hep-ph/9707450](#), in *Proceedings of the 5th International Conference on Supersymmetries in Physics (SUSY '97)*, ed. by M. Cvetič and P. Langacker, Nucl. Phys. Proc. Suppl. **62** (1998) 266-275. (*Cited 32 times in the literature.*)
9. “Supersymmetry and Particle Physics: A Roadmap of Future Directions” (with K. Dienes), in *Perspectives on Supersymmetry*, ed. by G. Kane, World Scientific Press, Singapore, 1998, pp. 99-124.
10. “Review of  $Z'$  Physics,” (with K.S. Babu and J. March-Russell), IAS report IASSNS-HEP-97/130, in the *Review of Particle Physics*, Eur. Phys. J. **C3** (1998) 1.
11. “Review of  $W'$  Physics,” (with K.S. Babu and J. March-Russell), IAS report IASSNS-HEP-97/131, in the *Review of Particle Physics*, Eur. Phys. J. **C3** (1998) 1.
12. “Extra Dimensions?” a subchapter in the popular science book, *The Charm of Strange Quarks – The Mysteries and Revolutions of Particle Physics*, by R.M. Barnett *et al*, Springer-Verlag, pp. 174-180.
13. “Extracting parameters from supersymmetric heavy Higgs bosons,” in *Physics and experiments with future linear  $e+e-$  colliders: LCWS 2000*, ed. by A. Para and H. Fisk (2001), pp. 288-291.

14. “Exponential quintessence and the end of acceleration,” (with W. Lahneman) hep-ph/0105300, undergraduate thesis presentation.
15. “ $B \rightarrow \mu\mu$  as a probe of  $\tan\beta$  at the Tevatron” (with G. Kane and J. Lennon), hep-ph/0310042. (*Cited 35 in the literature.*)
16. “Quintessence and varying alpha from shape moduli,” (with M. Byrne) hep-ph/0402075. (*Cited 12 times in the literature.*)
17. “Minimal flavor violation at large  $\tan(\beta)$ ,” arXiv:hep-ph/0409205, in the proceedings of the International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY 04), Tsukuba, Japan (6 pages).
18. “Perturbative unification and Higgs boson mass bounds,” (with K.S. Babu and I. Gogoladze), hep-ph/0410085. (*Cited 32 times in the literature.*)
19. “CP Asymmetries in Supersymmetry” in *The Discovery Potential of a Super B Factory*, hep-ph/0503261, ed. by J. Hewitt, published by the Stanford Linear Accelerator Center (SLAC), (2005) pp.377-381.
20. “Flavor Physics in the LHC Era,” in the electronic proceedings of the 3rd Workshop on Super Flavor Factory based on Linear Collider Technology (SuperB III), SLAC, Menlo Park, CA. E-conference C06/06/141, <http://www.slac.stanford.edu/econf/C0606141/>, presentation 117.
21. “Theory of lepton flavor violation: A mini-review,” in the proceedings of the 10th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2009), San Diego, CA, AIP Conf. Proc. **1182** (2009) pp. 652-655.
22. “Twenty Open Questions and a Postscript: SUSY Enters the Era of the LHC” (with K. Dienes), in *Perspectives on Supersymmetry II*, ed. by G. Kane, World Scientific Press, Singapore, (2010) pp. 154-221.
23. “The little hierarchy problem in a generalized NMSSM,” in AIP Conf. Proc. **1534**, 277 (2012).