Last updated: 1/4/17

Curriculum Vitae: Richard F. Lebed

Contents

Curriculum Vitae

Richard F. Lebed

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P.O. Box 871504	Office: Goldwater Center 526
Tempe, AZ 85287-1504	Email: richard.lebed@asu.edu

1 Education

1990–1994 **University of California, Berkeley**
Awarded Ph.D. in physics
Dissertation: *Topics in the Structure of Hadronic Systems*
Committee: *M. Suzuki* (Chair), *J.D. Jackson*, *M.D. Shapiro*, *A.V. Filippenko*

1988–1990 **University of California, Berkeley**
Awarded M.A. in physics

1984–1988 **Michigan State University**
Awarded B.S. in physics and mathematics

2 Academic Employment

2013–present **Arizona State University**
Director of Undergraduate Studies in Physics

2011–present **Arizona State University**
Professor of Physics

2006–2011 **Arizona State University**
Associate Professor of Physics

2000–2006 **Arizona State University**
Assistant Professor of Physics

2000 (Fall) **University of Maryland**
Visiting Professor

1997–2000 **Thomas Jefferson National Accelerator Facility**
Postdoctoral Research Associate

1994–1997 **University of California, San Diego**
Postdoctoral Research Associate

1991–1994 **University of California, Berkeley**
Graduate Student Research Assistant

1988–1991 **University of California, Berkeley**
Graduate Student Teaching Assistant

3 Summary of Research and Teaching Interests

I work in many areas of particle theory, from the energy scales associated with nuclear physics all the way up to the energy scales associated with hypothetical theories such as supersymmetry and grand unification, and even string theory. Such topics on which I have worked include neutrino masses and mixing, the physics of particles containing heavy quarks, quark-hadron duality, the possible experimental signatures of noncommutative spacetime, QCD behavior as determined by an equivalent gravity theory on curved

spacetime ("AdS/QCD"), exotic atoms like "true muonium," and tetraquark and pentaquark states. I am perhaps best known for my work on large N_c QCD and how near our $N_c=3$ universe lies to this formal limit.

I very much enjoy teaching and the interactions with students that it affords. Thus far, I have taught physics majors from the sophomore to senior levels as well as physics graduate students, and anticipate enjoying teaching non-majors in the future. I never tire of the delight of "letting them in on the secret" of understanding, both in the classroom and one-on-one mentoring settings.

4 Professional Affiliations

- American Physical Society:
  Division of Particles and Fields
  Division of Nuclear Physics
  Topical Group on Hadronic Physics
- University of Washington, Visiting Scholar
- ECT* (*European Centre for Theoretical Studies*) Associate
- West Coast LHC Theory Network

5 Courses Taught

5.1 At Arizona State

[N = Number of enrolled students]

Spring 2001	**PHY 462** (Nuclear and Particle Physics) [N=9]
Fall 2001	**PHY 492** (Honors Directed Study) [N=1]
	PHY 590 (Reading and Conference) [N=3]
Spring 2002	**PHY 462** (Nuclear and Particle Physics) [N=4]
Fall 2002	**PHY 302** (Mathematical Methods in Physics II) [N=22]
	PHY 499 (Individualized Instruction) [N=4]
Spring 2003	**PHY 201** (Mathematical Methods in Physics I) [N=31]
Fall 2003	**PHY 302** (Mathematical Methods in Physics II) [N=28]
	PHY 499 (Individualized Instruction) [N=13]
Spring 2004	**PHY 201** (Mathematical Methods in Physics I) [N=29]
Fall 2004	**PHY 302** (Mathematical Methods in Physics II) [N=29]
	PHY 499 (Individualized Instruction) [N=14]
Spring 2005	**PHY 201** (Mathematical Methods in Physics I) [N=33]
	PHY 499 (Individualized Instruction [N=1]
Fall 2005	**PHY 302** (Mathematical Methods in Physics II) [N=19]
	PHY 499 (Individualized Instruction) [N=11]
Spring 2006	**PHY 462** (Nuclear and Particle Physics) [N=10]
1st Summer 2006	**PHY 499** (Individualized Instruction) [N=3]
Fall 2006	**PHY 314** (Quantum Physics I) [N=30]
	PHY 499 (Individualized Instruction) [N=1]
Spring 2007	**PHY 315** (Quantum Physics II) [N=31]
	PHY 590 (Reading and Conference) [N=1]
Fall 2007	**PHY 314** (Quantum Physics I) [N=27]
	PHY 500 (Research Methods) [N=1]

Spring 2008	**PHY 315** (Quantum Physics II) [N=17]
	PHY 500 (Research Methods) [N=1]
Fall 2008	**PHY 314** (Quantum Physics I) [N=36]
	PHY 500 (Research Methods) [N=1]
Fall 2009	**PHY 314** (Quantum Physics I) [N=32]
Spring 2010	**PHY 315** (Quantum Physics II) [N=23]
Fall 2010	**PHY 314** (Quantum Physics I) [N=46]
	PHY 499 (Individualized Instruction) [N=1]
	PHY 500 (Research Methods) [N=1]
Spring 2011	**PHY 315** (Quantum Physics II) [N=39]
Fall 2011	**PHY 577** (Advanced Quantum Theory) [N=7]
	PHY 792 (Research) [N=1]
Spring 2012	**PHY 462** (Particle and Nuclear Physics) [N=18]
	PHY 500 (Research Methods) [N=1]
	PHY 792 (Research) [N=1]
Fall 2012	**PHY 577** (Advanced Quantum Theory) [N=12]
	PHY 792 (Research) [N=1]
Spring 2013	**PHY 462** (Particle and Nuclear Physics) [N=16]
	PHY 500 (Research Methods) [N=1]
	PHY 792 (Research) [N=1]
Fall 2013	**PHY 577** (Introduction to Quantum Field Theory) [N=10]
	PHY 792 (Research) [N=2]
Spring 2014	**PHY 462** (Particle and Nuclear Physics) [N=17]
	PHY 792 (Research) [N=1]
	PHY 799 (Dissertation) [N=1]
Fall 2014	**PHY 314** (Quantum Physics I) [N=60]
	PHY 492 (Honors Directed Study) [N=1]
	PHY 792 (Research) [N=2]
Spring 2015	**PHY 462** (Particle and Nuclear Physics) [N=21]
	PHY 493 (Honors Thesis) [N=1]
	PHY 792 (Research) [N=1]
	PHY 799 (Dissertation) [N=1]
Fall 2015	**PHY 792** (Research) [N=1]
	PHY 799 (Dissertation) [N=1]
Spring 2016	**PHY 799** (Dissertation) [N=1]
Fall 2016	**PHY 314** (Quantum Physics I) [N=87]
	PHY 500 (Research Methods) [N=1]

5.2 Other Teaching Experience

1998	Invited lecturer, *11th Indian-Summer School of Nuclear Physics*, Charles University, Prague
1998	Lecturer, *Theory Group Minilecture Series*, Jefferson Lab
1996	Invited lecturer, *HUGS at CEBAF Summer School*, Jefferson Lab
1991	Lecturer, U.C. Berkeley Graduate Student Instructor Training Seminar
1988–91	Graduate Student Instructor, U.C. Berkeley Taught physics courses at all levels: undergraduate lower and upper division, and graduate

6 Graduate Student Mentoring

• Graduate research advisor (**PHY 792**) and dissertation advisor (**PHY 799**):
Daniel Martin (S 02–Su 05; defended Ph.D. 7/05, formal graduation 12/05)
Lang Yu (F 08–S 10)
Russell TerBeek (F 11–S 15; defended Ph.D. 4/15)
Hank Lamm (F 13–S 16; defended Ph.D. 4/16)
• Ph.D. thesis committee member:
Alankrita Priya (Advisor: C. Lunardini)
Glenn Randall (Advisor: R. Alarcon)
Yao Ji (Advisor: A. Belitsky)
Jayden Newstead (Advisor: L. Krauss)
Lifang Xia (Advisor: I. Shovkovy)
Joel Lynn (Advisor: K. Scmhidt)
Lang Yu (Advisor: I. Shovkovy)
Lauren Ice (Advisor: R. Alarcon)
Ross Tucker (Advisor: B.G. Ritchie)
Lang Yu (Advisor: I. Shovkovy)
Ben O'Neill (Advisor: R. Alarcon)
Jie Zhang (Advisor: K. Schmidt)
Joel Lynn (Advisor: A.V. Belitsky)
Jim Ball (Advisor: B.G. Ritchie)
Patrick Collins (Advisor: B.G. Ritchie)
Nimish Hathi (Advisor: R. Windhorst)
Amber Straughn (Advisor: R. Windhorst)
• Department of Physics & Astronomy graduate academic mentor:
Mohamed Bouadani (2004–6)
Liang Gao (2004–5)
• Department of Physics Research Rotation Advisor:
Jared Warner (F 2007)
Lang Yu (S 2008)
Miao He (F 2008)
Russell TerBeek (F 2010)
Lifang Xia (S 2012)
Dongrin Kim (S 2013)
Jyotirish Das (F 2016)

7 Undergraduate Student Mentoring

• Undergraduate research advisor (**PHY 495**):
Janice Hester (S 02); based on our research, she won the Jacob Undergraduate Research Award, as well as published a peer-reviewed paper (see §10.2)
• Undergraduate Honors Thesis advisor/committee member:
(**WST 493**): *Justice Bruursema* (F 04); title: "Why Janey Can't Read Equations: An Investigation of Gender and Physics at ASU" (Chair: A.H. Koblitz, Department of Women's Studies)
• *Isaac Saldivar* (S 12) (Chair: R. Alarcon)
• Undergraduate research advisor:
Christopher Sheridan (S 10–F 10)
• Honors project advisor:
Alexander Brown (F 11)
• Honors thesis advisor:
Sam Blitz (F 14–S 15); won the ASU Barrett Honors College Senior Project Award

8 Grants

1. *Pending:*
   National Science Foundation (Nuclear Theory)
   "Probing the Structure of Exotic and Conventional Hadrons"
   Sept. 2017–Aug. 2020
   $481,328
   R. Lebed PI.

2. *Active:*
   National Science Foundation (Nuclear Theory)
   "Theory and Phenomenology of Strong Interactions"
   Sept. 2014–Aug. 2017
   $600,000 ($200,000 per year for each of FY 2015, 2016, 2017)
   R. Lebed PI, A. Belitsky co-PI.

3. *Complete:*
   National Science Foundation (Nuclear Theory)
   "New Perspectives on Bound States and the Flavor Problem"
   Aug. 2011–Dec. 2015
   $600,000 ($200,000 per year for each of FY 2012, 2013, 2014)
   R. Lebed PI, A. Belitsky co-PI.

4. *Complete:*
   ASU College of Liberal Arts and Sciences Seed Grant
   "High Precision Simulation of the True Muonium Atom in Light-Front Quantization"
   Jan. 2014–Dec. 2014
   $28,710
   R. Lebed, sole PI.

5. *Complete:*
   National Science Foundation (Nuclear Theory)
   "New Tools to Study Strong Interaction Physics"
   Aug. 2008–Aug. 2011
   $480,000 ($160,000 per year for each of FY 2009, 2010, 2011)
   A. Belitsky PI, R. Lebed co-PI

6. *Complete:*
   National Science Foundation (Nuclear Theory)
   PHY-0456520, "Topics in Hadron and Flavor Physics, and Yang-Mills Integrability"
   Aug. 2005–Aug. 2008
   $426,000 ($142,000 per year for each of FY 2006, 2007, 2008)
   R. Lebed PI, A. Belitsky co-PI

7. *Complete:*
   National Science Foundation (Nuclear Theory)
   PHY-0140362, "Phenomenology of Hadrons and Fundamental Particles"
   Aug. 2002–Aug. 2005
   $150,000 ($50,000 per year each of FY 2003, 2004, 2005)
   R. Lebed sole PI

8. *Complete:*
   National Science Foundation (Nuclear Theory)
   PHY-0352699, "Phenomenology of Hadrons and Fundamental Particles"
   Mar. 2004–Aug. 2005
   $20,195
   R. Lebed sole PI

9. *Complete:*
   American Institute of Physics
   "Analysis of the Crystal Structure of Oxalate Kidney Stones" Jan. 2005–May. 2006
   $1,952
   R. Lebed, PI (as advisor to ASU Society of Physics Students)

10. *Complete:*
    ASU College of Liberal Arts and Sciences Faculty Grant-In-Aid Award
    "Neutrino Physics and the Three-Flavor Problem"
    Jan. 1, 2004–Dec. 1, 2004,
    $6,951
    R. Lebed sole PI

9 Awards and Honors

9.1 Teaching Awards

2015 Nominee, College of Liberal Arts and Sciences Quality Teaching Award
2012 Nominee, College of Liberal Arts and Sciences Quality Teaching Award
2011 Department of Physics Outstanding Faculty Teaching Award
2011 Nominee, College of Liberal Arts and Sciences Quality Teaching Award
2010 Nominee, College of Liberal Arts and Sciences Quality Teaching Award
2009 Nominee, College of Liberal Arts and Sciences Quality Teaching Award
2008 Nominee, Dean's Quality Teaching Award
2007 Nominee, ASU Parents' Association Professor of the Year
2005 Department of Physics & Astronomy Outstanding Faculty Teaching Award
2005 Nominee, Dean's Distinguished Teaching Award
2004 Golden Opus Award for Teaching Excellence
2002 Nominee, ASU Centennial Professor Award
1991 Outstanding Graduate Student Instructor Award (U.C. Berkeley)

9.2 Academic Honors

2015 Fellow, American Physical Society
1994 Department of Education Fellow
1990–1 Department of Education Fellow
1988–9 Regents Fellow
1988 Outstanding Senior Award
1988 Board of Trustees Award (Highest graduating GPA at Michigan State)
1984–8 Distinguished Freshman Scholar
1984–8 National Merit Scholar

9.3 Academic Honor Societies

Phi Beta Kappa, Sigma Pi Sigma, Pi Mu Epsilon, Phi Kappa Phi

10 Publications

Note: Standard etiquette in nuclear/particle theory publications is to list authors alphabetically rather than in order of effort or prominence.

10.1 Publication Summary

- 94 articles accepted for publication in peer-reviewed journals,
  65 of these published since employed at ASU
- 1 article currently accepted for publication and
- 17 articles published in conference proceedings (including ones not in particle physics),
  10 of these since employed at ASU
- Sole editor of published conference proceedings, and joint editor of published conference proceedings

10.2 Since Employed at Arizona State

10.2.1 Articles Published or Accepted In Peer-Reviewed Journals

1. "Heavy Quark QCD Exotica"
   Richard F. Lebed, Ryan E. Mitchell, and Eric S. Swanson
   Progress in Particle & Nuclear Physics
   Published online Dec. 2016 by journal at
   http://www.sciencedirect.com/science/article/pii/S0146641016300734
   Final bibliographic details to appear soon.

2. "QCD Compositeness As Revealed in Exclusive Vector Boson Reactions Through Double-Photon Annihilation: $e^+e^- \to \gamma\gamma^* \to \gamma V^0$"
   Stanley J. Brodsky, Richard F. Lebed, and Valery E. Lyubovitskij
   Physics Letters B **764**, 174 (2017).

3. "How Often Do Diquarks Form? A Very Simple Model"
   Richard F. Lebed
   Physical Review D **94**, 034039 (2016).

4. "High Resolution Nonperturbative Light-Front Simulations of the True Muonium Atom"
   Henry Lamm and Richard F. Lebed
   Physical Review D **94**, 016004 (2016).

5. "Exotic Discoveries in Familiar Places: Theory of the Onia and Exotics"
   Richard F. Lebed
   Proceedings of Science BEAUTY2016, 052 (2016).

6. "$\chi_{c0}(3915)$ As the Lightest $c\bar{c}s\bar{s}$ State"
   Richard F. Lebed and Antonio D. Polosa
   Physical Review D **93**, 094024 (2016).

7. "Nonperturbative True Muonium on the Light Front with TMSWIFT"
   Henry Lamm and Richard F. Lebed
   Few Body Systems **57**, 663 (2016).

8. "Issues and Opportunities in Exotic Hadrons"
   R.A. Briceño *et al.*
   Chinese Physics C **40**, 042001 (2016).

9. "Do the P_c^+ Pentaquarks Have Strange Siblings?"
   Richard F. Lebed
   Physical Review D **92**, 114030 (2015).

10. "Diquark Substructure in ϕ Photoproduction"
    Richard F. Lebed
    Physical Review D **92**, 114006 (2015).

11. "Above-Threshold Poles in Model-Independent Form Factor Parametrizations"
    Benjamín Grinstein and Richard F. Lebed
    Physical Review D **92**, 116001 (2015).

12. "The Pentaquark Candidates in the Dynamical Diquark Picture"
Richard F. Lebed
Physics Letters B **749**, 454 (2015).

13. "The QCD Dynamics of Tetraquark Production"
Stanley J. Brodsky and Richard F. Lebed
Physical Review D **91**, 114025 (2015).

14. "Tetraquark Cusp Effects from Diquark Pair Production"
Samuel H. Blitz and Richard F. Lebed
Physical Review D **91**, 094025 (2015).

15. "True Muonium ($\mu^+\mu^-$) on the Light Front"
Henry Lamm and Richard F. Lebed
Journal of Physics G **41** (2014) 12, 125003.

16. "Dynamical Picture for the Formation and Decay of the Exotic XYZ Mesons"
Stanley J. Brodsky, Dae Sung Hwang, and Richard F. Lebed
Physical Review Letters **113**, 112001 (2014).

17. "Are There Tetraquarks at Large N_c in QCD(F)?"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **90**, 016001 (2014).

18. "Tetraquarks with Exotic Flavor Quantum Numbers at Large N_c in QCD(AS)"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **89**, 054018 (2014).

19. "Large-N Structure of Tetraquark Mesons"
Richard F. Lebed
Physical Review D **88**, 057901 (2013).

20. "The Lee-Wick Standard Model at Finite Temperature"
Richard F. Lebed, Andrew J. Long, and Russell H. TerBeek
Physical Review D **88**, 085014 (2013).

21. "Precision Electroweak Constraints on the $N = 3$ Lee-Wick Standard Model"
Richard F. Lebed and Russell H. TerBeek
Physical Review D **87**, 015006 (2013).

22. "Collider Signatures of the $N = 3$ Lee-Wick Standard Model"
Richard F. Lebed and Russell H. TerBeek
Journal of High Energy Physics **1209**, 099 (2012).

23. "Alternate $1/N_c$ Expansions and SU(3) Breaking from Baryon Lattice Results"
Aleksey Cherman, Thomas D. Cohen, and Richard F. Lebed
Physical Review D **86**, 016002 (2012).

24. "Gauged Baryon and Lepton Number in MSSM_4 Brane Worlds"
Richard F. Lebed and Van E. Mayes
Physical Review D **84**, 075016 (2011).

25. "Natural Four-Generation Mass Textures in MSSM Brane Worlds"
Richard F. Lebed and Van E. Mayes
Physical Review D **84**, 105015 (2011).

26. "Realistic Four-Generation MSSM in Type II String Theory"
A. V. Belitsky, Richard F. Lebed, and Van E. Mayes
Physics Letters B **697**, 343 (2011).

27. "Tribimaximal Neutrino Mixing from A_4 Replication"
Christopher D. Carone and Richard F. Lebed
Physics Letters B **696**, 454 (2011).

28. "Baryon Magnetic Moments in Alternate $1/N_c$ Expansions"
Richard F. Lebed and Russell H. TerBeek
Physical Review D **83**, 016009 (2011).

29. "Baryons in $\mathrm{QCD}_{\mathrm{AS}}$ at Large N_c: A Roundabout Approach"
Thomas D. Cohen, Daniel L. Shafer, and Richard F. Lebed
Physical Review D **81**, 036006 (2010).

30. "Optimal Parametrization of Deviations from Tribimaximal Form of the Neutrino Mass Matrix"
Christopher D. Carone and Richard F. Lebed
Physical Review D **80**, 117301 (2009).

31. "All you need is N: Baryon spectroscopy in two large N limits"
Aleksey Cherman, Thomas D. Cohen, and Richard F. Lebed
Physical Review D **80**, 036002 (2009).

32. "Pion Electroproduction Amplitude Relations in the $1/N_c$ Expansion"
Richard F. Lebed and Lang Yu
Physical Review D **80**, 076006 (2009).

33. "Production of the Smallest QED Atom: True Muonium ($\mu^+\mu^-$)"
Stanley J. Brodsky and Richard F. Lebed
Physical Review Letters **102**, 213401 (2009).

34. "A Higher-Derivative Lee-Wick Standard Model"
Christopher D. Carone and Richard F. Lebed
Journal of High Energy Physics **0901**, 043 (2009).

35. "Minimal Lee-Wick Extension of the Standard Model"
Christopher D. Carone and Richard F. Lebed
Physics Letters **B668**, 221 (2008).

36. "Pion Form Factor in Improved Holographic QCD Backgrounds"
Herry J. Kwee and Richard F. Lebed
Physical Review D **77**, 115007 (2008).

37. "Pion Form Factors in Holographic QCD"
Herry J. Kwee and Richard F. Lebed
Journal of High Energy Physics **0801**, 027 (2008).

38. "An Identity on SU(2) Invariants"
Herry J. Kwee and Richard F. Lebed
Journal of Physics A: Mathematical and Theoretical **41** 015206 (2008).

39. "$1/N_c$ Corrections in Meson-Baryon Scattering"
Herry J. Kwee and Richard F. Lebed
Journal of High Energy Physics **0710**, 046 (2007).

40. "$\pi N \to$ Multi-πN Scattering in the $1/N_c$ Expansion"
Herry J. Kwee and Richard F. Lebed
Physical Review D **75**, 016002 (2007).

41. "Interplay of the Chiral and Large N_c Limits in πN Scattering"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **74**, 056006 (2006).

42. "Decoupling Spurious Baryon States in the $1/N_c$ Expansion of QCD"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **74**, 036001 (2006).

43. "The Large N_c Baryon-Meson $I_t = J_t$ Rule Holds for Three Flavors"
Richard F. Lebed
Physics Letters B **639**, 68 (2006).

44. "Diquark Correlations from Nucleon Charge Radii"
Carl E. Carlson, Christopher D. Carone, Herry J. Kwee, and Richard F. Lebed
Physics Letters B **635**, 100 (2006).

45. "On the Existence of Heavy Pentaquarks"
Thomas D. Cohen, Paul M. Hohler, and Richard F. Lebed
Physical Review D **72**, 074010 (2005).

46. "Phenomenology of the Baryon Resonance 70-plet at Large N_c"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **72**, 056001 (2005).

47. "SU(3) Baryon Resonance Multiplets in Large N_c QCD"
Thomas D. Cohen and Richard F. Lebed
Physics Letters B **619**, 115 (2005).

48. "Pion Photoproduction Amplitude Relations in the $1/N_c$ Expansion"
Thomas D. Cohen, Daniel C. Dakin, Richard F. Lebed, and Daniel R. Martin
Physical Review D **71**, 076010 (2005).

49. "SU(3) Clebsch-Gordan Coefficients for Baryon-Meson Coupling at Arbitrary N_c"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **70**, 096015 (2004).

50. "Hyperon Radiative Decays in the $1/N_c$ Expansion"
Richard F. Lebed and Daniel R. Martin
Physical Review D **70**, 057901 (2004).

51. "Complete Analysis of Baryon Magnetic Moments in $1/N_c$"
Richard F. Lebed and Daniel R. Martin
Physical Review D **70**, 016008 (2004).

52. "Pion-Nucleon Scattering Relations at Next-to-Leading Order in $1/N_c$"
Thomas D. Cohen, Daniel C. Dakin, Abhinav Nellore, and Richard F. Lebed
Physical Review D **70**, 056004 (2004).

53. "Constraints on Natural MNS Parameters from $|U_{e3}|$"
Richard F. Lebed and Daniel R. Martin
Physical Review D **70**, 013004 (2004).

54. "Excited Baryon Decay Widths in Large N_c QCD"
Thomas D. Cohen, Daniel C. Dakin, Abhinav Nellore, and Richard F. Lebed
Physical Review D **69**, 056001 (2004).

55. "Partners of the Θ^+ in Large N_c QCD"
Thomas D. Cohen and Richard F. Lebed
Physics Letters B **578**, 150 (2004).

56. "Compatibility of Quark and Resonant Picture Excited Baryon Multiplets in $1/N_c$ QCD"
Richard F. Lebed and Thomas D. Cohen
Physical Review D **68**, 056003 (2003).

57. "Excited Baryons in Large N_c QCD Revisited: The Resonance Picture Versus Single Quark Excitations"
Thomas D. Cohen and Richard F. Lebed
Physical Review D **67** (2003) 096008.

58. "New Relations for Excited Baryons in Large N_c QCD"
Thomas D. Cohen and Richard F. Lebed
Physical Review Letters **91** (2003) 012001.

59. "Supersymmetric Noncommutative QED and Lorentz Violation"
Carl E. Carlson, Christopher D. Carone, and Richard F. Lebed
Physics Letters B **549** (2002) 337.

60. "Baryon Charge Radii and Quadrupole Moments in the $1/N_c$ Expansion: The Three Flavor Case"
Alfons J. Buchmann and Richard F. Lebed
Physical Review D **67** (2003) 016002.

61. "Quadrupole Moments of the N and Δ in the $1/N_c$ Expansion"
Alfons J. Buchmann, Janice A. Hester, and Richard F. Lebed
Physical Review D **66** (2002) 056002.

62. "Bounding Noncommutative QCD"
Carl E. Carlson, Christopher D. Carone, and Richard F. Lebed
Physics Letters B **518** (2001) 201.

63. "The Counting of Generalized Polarizabilities"
Richard F. Lebed
Physical Review D **64** (2001) 094012.

64. "Counting Form Factors of Twist-Two Operators"
Xiangdong Ji and Richard F. Lebed
Physical Review D **63** (2001) 076005.

65. "Precision Studies of Duality in the 't Hooft Model"
Richard F. Lebed and Nikolai G. Uraltsev
Physical Review D **62** (2000) 094011.

10.2.2 Articles Published in Conference Proceedings

[Not peer-reviewed unless otherwise noted]

1. "A New Dynamical Picture for the Production and Decay of XYZ Mesons"
Richard F. Lebed
Invited plenary talk presented at *CHARM 2015*
arXiv:1508.03320 (Proceedings to be published).

2. "The Pion Form Factor in AdS/QCD"
Herry J. Kwee and Richard F. Lebed
Invited plenary talk presented at *Continuous Advances in QCD 2008*
Edited by Marco Peloso
World Scientific, Singapore (2008).

3. "Baryons and Large N_c in Happy Resonance"
Richard F. Lebed
Invited talk presented at *Continuous Advances in QCD 2006*
Edited by Marco Peloso and Mikhail Shifman
World Scientific, Singapore (2007).

4. "Describing the Baryon Spectrum with $1/N_c$ QCD"
Richard F. Lebed
Invited plenary talk presented at *International Workshop on the Physics of Excited Baryons (NSTAR 05)*, 10–15 October 2005, Tallahassee, Florida
Edited by Simon Capstick, Volker Crede, and Paul Eugenio
World Scientific, Singapore (2006).

5. "The $1/N_c$ Approach for Baryon Resonances"
Richard F. Lebed
Invited talk presented at *International Conference on QCD and Hadronic Physics*, 16–20 June 2005, Peking University, Beijing
Edited by Kuang-Ta Chao, Xiangdong Ji, and Chuan Liu
International Journal of Modern Physics A **21**, 877 (2006)
World Scientific, Singapore (2006).

6. "Baryon Resonances in the $1/N_c$ Expansion"
Richard F. Lebed
Invited talk published in *Large N_c QCD 2004*

Edited by José Goity, Richard F. Lebed, Antonio Pich, Carlos Schat, and Norberto Scoccola
World Scientific, Singapore (2005).

7. "Baryons, INc."
Richard F. Lebed
Invited talk published in *Continuous Advances in QCD 2004*
Edited by T. Gherghetta
World Scientific, Singapore (2004).

8. "N* Properties from the $1/N_c$ expansion"
Richard F. Lebed
Invited plenary talk published in *NSTAR 2002, Workshop on the Physics of Excited Nucleons*
Edited by S.A. Dytman and E.S. Swanson
World Scientific, River Edge NJ (2003).

9. "On Radiative Weak Annihilation Decays"
Richard F. Lebed
Invited talk at *5th International Symposium on Radiative Corrections (RADCOR 2000)*, Carmel, California, 11–15 Sept. 2000 [hep-ph/0012316]
Edited by Howard E. Haber
Published electronically at `http://www.slac.stanford.edu/econf/C000911/`.

10. "A Lot of Flavor Physics from a Little Symmetry"
Alfredo Aranda, Christopher D. Carone, and Richard F. Lebed
Report No. WM-00-111 [hep-ph/0010144]
Presented at DPF 2000, Columbus, OH, August 2000
Int. J. Mod. Phys. A **16** Sec. 1C (2001) 896.

10.2.3 Conference Proceedings Editor

1. "Large N_c QCD 2004"
Proceedings from the ECT* Workshop on Large N_c QCD
Edited by José Goity, Richard F. Lebed, Antonio Pich, Carlos Schat, and Norberto Scoccola
World Scientific, Singapore (2005)
ISBN 981-256-399-7.

2. "Phenomenology of Large N_c QCD"
Proceedings from the Insitute for Nuclear Theory, Vol. 12
Edited by Richard F. Lebed
World Scientific, Singapore (2002)
ISBN 981-238-096-5.

10.3 Mentions of Research in Popular Accounts (sampling)

1. "Quark Quartet Fuels Quantum Feud,"
Natalie Wolchover
Quanta Magazine (27 August 2014).

2. "New Recipe for True Muonium: Take One Muon..."
   Kenneth Chang
   New York Times (9 June 2009).

3. "High-energy physics: Muonium gets real"
   Nature (Research Highlights) **459**, 755 (11 June 2009).

4. "Muonium"
   Wikipedia, http://en.wikipedia.org/wiki/Muonium.

10.4 Prior to Arizona State Employment

10.4.1 Articles Published In Peer-Reviewed Journals

[Numbering scheme follows on from §10.2.1]

66. "Naturalness of the Coleman-Glashow Mass Relation in the $1/N_c$ Expansion: an Update"
    Elizabeth Jenkins and Richard F. Lebed
    Physical Review D **62** (2000) 077901.

67. "Large N_c, Constituent Quarks, and N, Δ Charge Radii"
    Alfons J. Buchmann and Richard F. Lebed
    Physical Review D **62** (2000) 096005.

68. "Maximal Neutrino Mixing from a Minimal Flavor Symmetry"
    Alfredo Aranda, Christopher D. Carone, and Richard F. Lebed
    Physical Review D **62** (2000) 016009.

69. "U(2) Flavor Physics without U(2) Symmetry"
    Alfredo Aranda, Christopher D. Carone, and Richard F. Lebed
    Physics Letters B **474** (2000) 170.

70. "Radiative Weak Annihilation Decays"
    Richard F. Lebed
    Physical Review D **61** (2000) 033004.

71. "A Hexagonal Theory of Flavor"
    Christopher D. Carone and Richard F. Lebed
    Physical Review D **60** (1999) 096002.

72. "$B^+ \to D_s^{*+}\gamma$ and $B^+ \to D^{*+}\gamma$ as Probes of V_{ub}"
    Benjamín Grinstein and Richard F. Lebed
    Physical Review D **60** (1999) 031302.

73. "Operator Analysis of $\ell = 1$ Baryon Masses in Large N_c QCD"
    Carl E. Carlson, Christopher D. Carone, José Goity, and Richard F. Lebed
    Physical Review D **59** (1999) 114008.

74. "Phenomenology of Large N_c QCD"
    Richard F. Lebed
    JLAB-THY-98-42 [nucl-th/9810080]

Lectures presented at *11th Indian Summer-School of Nuclear Physics*, 7–11 Sept. 1998, Charles University, Prague
Czechoslovak Journal of Physics **49** (1999) 1273.

75. "Masses of Orbitally Excited Baryons in Large N_c QCD"
Carl E. Carlson, Christopher D. Carone, José Goity, and Richard F. Lebed
Physics Letters B **438** (1998) 327.

76. "Quark-Hadron Duality in the 't Hooft Model for Meson Weak Decays: Different Quark Diagram Topologies"
Benjamín Grinstein and Richard F. Lebed
Physical Review D **59** (1999) 054022.

77. "New Constraints on Dispersive Form Factor Parameterizations from the Timelike Region"
W. W. Buck and Richard F. Lebed
Physical Review D **58** (1998) 056001.

78. "Consistency Constraints on m_s from QCD Dispersion Relations and Chiral Perturbation Theory in $K_{\ell 3}$ Decays"
Richard F. Lebed and Karl Schilcher
Physics Letters B **430** (1998) 341.

79. "Explicit Quark-Hadron Duality in Heavy-Light Meson Weak Decays in the 't Hooft Model"
Benjamín Grinstein and Richard F. Lebed
Physical Review D **57** (1998) 1366.

80. "Precision Corrections to Dispersive Bounds on Form Factors"
C. Glenn Boyd, Benjamín Grinstein, and Richard F. Lebed
Physical Review D **56** (1997) 6895.

81. "Relating CKM Parametrizations and Unitarity Triangles"
Richard F. Lebed
Physical Review D **55** (1997) 348.

82. "Improved QCD Form Factor Constraints and $\Lambda_b \to \Lambda_c \ell \bar{\nu}$"
C. Glenn Boyd and Richard F. Lebed
Nuclear Physics B **485** (1997) 275.

83. "Heavy Baryons in SU(2) $\times$ SU(6)"
Richard F. Lebed
Physical Review D **54** (1996) 4463.

84. "SU(3) Decomposition of Two-Body B Decay Amplitudes"
Benjamín Grinstein and Richard F. Lebed
Physical Review D **53** (1996) 6344.

85. "Model-Independent Determinations of $\bar{B} \to D \ell \bar{\nu}$, $D^* \ell \bar{\nu}$ Form Factors"
C. Glenn Boyd, Benjamín Grinstein, and Richard F. Lebed
Nuclear Physics B **461** (1996) 493.

86. "Model-Independent Extraction of $|V_{cb}|$ Using Dispersion Relations"
C. Glenn Boyd, Benjamín Grinstein, and Richard F. Lebed
Physics Letters B **353** (1995) 306.

87. "Baryon Mass Splittings in the $1/N_c$ Expansion"
Elizabeth Jenkins and Richard F. Lebed
Physical Review D **52** (1995) 282.

88. "Constraints on Form Factors for Exclusive Semileptonic Heavy to Light Meson Decays"
C. Glenn Boyd, Benjamín Grinstein, and Richard F. Lebed
Physical Review Letters **74** (1995) 4603.

89. "Determination of SU(6) Clebsch-Gordan Coefficients and Baryon Mass and Electromagnetic Moment Relations"
Richard F. Lebed
Physical Review D **51** (1995) 5039.

90. "Baryon Masses Beyond Leading Order in Chiral Perturbation Theory"
Richard F. Lebed and Markus A. Luty
Physics Letters B **329** (1994) 479.

91. "Baryon Decuplet Mass Relations in Chiral Perturbation Theory"
Richard F. Lebed
Nuclear Physics B **430**, (1994) 295.

92. "Meson Mass Splittings in the Nonrelativistic Model"
Richard F. Lebed
Physical Review D **47** (1993) 1134.

93. "Making Electroweak Models of Composite Fermions Realistic"
Richard F. Lebed and Mahiko Suzuki
Physical Review D **45** (1992) 1744.

94. "Current Algebra and the Ademollo–Gatto Theorem in Spin-Flavor Symmetry of Heavy Quarks"
Richard F. Lebed and Mahiko Suzuki
Physical Review D **44** (1991) 829.

10.4.2 Articles Published in Conference Proceedings

[Numbering scheme follows on from §10.2.2; not peer-reviewed unless otherwise noted]

11. "QCD Constraints on Form Factor Shapes"
Richard F. Lebed
JLAB-THY-99-19 [hep-ph/9908234]
Presented at *Exclusive and Semi-Exclusive Processes at High Momentum Transfer*, Jefferson Lab, Newport News, VA, 20-22 May 1999, edited by C. Carlson and A. Radyushkin, World Scientific, Singapore, 2000, p. 287).

12. "NN Interactions in QCD: Old and New Techniques"
Richard F. Lebed
JLAB-THY-98-38 [nucl-th/9809093]
Invited talk at *Mesons and Light Nuclei '98*, edited by J. Adam *et al.*, World Scientific, Singapore, 1999, p. 281 [*peer reviewed*].

13. "Explicit Quark-Hadron Duality in (1+1) Dimensions"
Richard F. Lebed
JLAB-THY-98-33 [hep-ph/9808452]
Talk presented at *3rd International Conference on Quark Confinement and the Hadron Spectrum (Confinement III)*, Newport News, VA, 7–12 June 1998, edited by N. Isgur, World Scientific, Singapore, 2000.

14. "Model-Independent Semileptonic Form Factors Using Dispersion Relations"
C. Glenn Boyd, Benjamín Grinstein, and Richard F. Lebed
Presented at the *6th International Symposium on Heavy Flavour Physics*, Pisa, Italy, June 1995
Nuovo Cimento **109A** (1996) 863.

10.5 Non-Particle Physics Publications

15. "LDEF Spacecraft, Ground Laboratory, and Computational Modeling Implications on Space Station Freedom's Solar Array Materials and Surfaces Durability"
Bruce A. Banks, Sharon K. Rutledge, Kim K. de Groh, Bruce M. Auer, Michael J. Mirtich, Linda Gebauer, Carol M. Hill, and Richard F. Lebed
Presented at 22$^{\text{nd}}$ IEEE Photovoltaic Specialists Conference,
Las Vegas, NV, Oct. 7–11, 1991
IEEE Photovoltaics Specialists 1991, pp. 1434–1439.

16. "Charge State Distributions for Heavy Ions in Carbon Stripper Foils"
M.A. McMahan, R.F. Lebed, and B. Feinberg
Presented at 1989 IEEE Particle Accelerator Conference,
Chicago, IL, March 20–23, 1989
IEEE Particle Accelerators 1989: pp. 536–538.

17. "High Temperature Radiator Materials for Applications in the Low Earth Orbital Environment"
Sharon K. Rutledge, Bruce A. Banks, Michael J. Mirtich, Richard Lebed, Joyce Brady, Deborah Hotes and Michael Kussmaul
Presented at the 1987 Spring Meeting of the Materials Research
Society, Anaheim, CA, April 20–24, 1987
NASA Technical Memorandum 100190.

11 Presentations

Note: Only presentations subsequent to ASU employment are itemized.
• 62 invited seminars and colloquia,
39 of these since employed at ASU:

1. *3/28/16*: "The XYZ Affair: A Tale of the Third and Fourth Hadrons," College of William & Mary

2. *3/23/16*: "Excursions to Exotic Destinations," University of Maryland

3. *3/22/16*: "The XYZ Affair: A Tale of the Third and Fourth Hadrons," University of Maryland

4. *3/3/16*: "The XYZ Affair: A Tale of the Third and Fourth Hadrons," Wayne State University

5. *10/2/15*: "The XYZ Affair: A Tale of the Third and Fourth Hadrons," Embry-Riddle University

6. *9/11/15*: "A New Dynamical Picture for the Production and Decay of the X, Y, Z, and P_c Charmoniumlike Exotics," CERN Joint Theory Group/LHCb Collaboration

7. *3/11/15*: "The XYZ Affair: A Tale of the Third Hadron," University of Valencia

8. *6/18/14*: "Are Narrow Tetraquarks Part of the Large Nc Universe?," Stanford Linear Accelerator Facility.

9. *4/8/14*: "Are Narrow Tetraquarks Part of the Large Nc Universe?," University of Colorado, Boulder.

10. *2/27/14*: "A Physicist's View of *The Five Senses*," Scottsdale Museum of Contemporary Art, Scottsdale, Arizona.

11. *10/10/13*: "Beyond Standard Model Case Study: The $N = 3$ Lee-Wick Standard Model," University of Minnesota.

12. *10/19/12*: "Beyond Standard Model Case Study: The $N = 3$ Lee-Wick Standard Model," Arizona State University.

13. *9/22/12*: "The Second Century of Particle Physics," Arizona Chapter, American Association of Physics Teachers, Tempe, Arizona.

14. *3/15/12*: "The Second Century of Particle Physics," Science Circle of Arizona, Tempe, Arizona.

15. *2/18/11*: "Lee-Wick: The Next Generation," Arizona State University.

16. *10/19/10*: "The Baryon Resonance Spectrum and the 1/Nc Expansion," Michigan State University.

17. *10/15/10*: "The Baryon Resonance Spectrum and the 1/Nc Expansion," Arizona State University.

18. *11/5/09*: "The Baryon Resonance Spectrum and the 1/Nc Expansion," University of Wisconsin, Madison.

19. *10/21/09*: "The Baryon Resonance Spectrum and the 1/Nc Expansion," University of Maryland.

20. *7/10/09*: "The Baryon Resonance Spectrum and the 1/Nc Expansion," Thomas Jefferson National Accelerator Facility.

21. *4/21/09*: "Large N_c QCD: Physics in a World of Many Colors," Embry-Riddle University.

22. *3/17/09*: "Adventures in Lee-Wick Phenomenology," University of California, San Diego.

23. *2/6/09*: "Adventures in Lee-Wick Phenomenology," Stanford Linear Accelerator Facility.

24. *10/1/07*: "Baryons and Large N_c in Happy Resonance," University of California, Los Angeles.

25. *7/7/06*: "Baryons and Large N_c in Happy Resonance," Stanford Linear Accelerator Facility.

26. *10/5/04*: "Asymptotic Freedom and the 2004 Nobel Prize," Arizona State University.

27. *3/24/04*: "Baryons in Large $\mathrm{N_c}$," Arizona State University.

28. *2/6/04*: "Baryons, $\mathrm{IN_c}$," University of California, San Diego.

29. *1/23/04*: "All Neutrinos Are Equal But Some Are More Equal Than Others," Arizona State University.

30. *5/7/03*: "Baryons in $1/N_c$: The Classic and the Nouveau," University of Arizona.

31. *4/18/03*: "Baryons in $1/N_c$: The Classic and the Nouveau," Caltech.

32. *3/13/03*: "Is Spacetime Lumpy?" Arizona State University.

33. *8/13/02*: "Predictions from Gauge Theories with Noncommutative Spacetime," University of Helsinki.

34. *10/11/01*: "Learning to Count," College of William & Mary.

35. *8/9/01*: "Precision Quark-Hadron Duality in 1+1 Dimensions," National Institute for Nuclear Theory (University of Washington).

36. *6/6/01*: "Precision Quark-Hadron Duality in 1+1 Dimensions," University of Maryland.

37. *5/30/01*: "Precision Quark-Hadron Duality in 1+1 Dimensions," Ohio State University.

38. *3/1/01*: "Baryon Masses in Large N_c QCD," University of Arizona.

39. *9/8/00*: "On Radiative Weak Annihilation Decays," University of Maryland.

- 28 invited conference and workshop talks,
  25 of these since employed at ASU:

1. International Workshop on Heavy Quarkonium, 6–10 June 2016, Pacific Northwest National Laboratory, Richland, WA: "The Dynamical Diquark Picture of Exotics," (*plenary*).

2. BEAUTY 2016, Marseilles, France, 1–6 May 2016: "Exotic Discoveries in Familiar Places," (*plenary*).

3. Workshop, "Modern Exotic Hadrons," Institute for Nuclear Theory, Seattle, 2–13 November 2015: "A New Dynamical Picture for the Production and Decay of the X, Y, Z, and P_c Charmoniumlike Exotics."

4. Workshop, "Belle II Theory Interface Platform (B2TiP)," KEK, Tsukuba, Japan, 28–29 October 2015, "A New Dynamical Picture for the Production and Decay of the X, Y, Z, and P_c Charmoniumlike Exotics."

5. APS Four Corners Conference, Tempe, Arizona, 16–17 October 2015, "A New Dynamical Picture for the Production and Decay of the X, Y, Z, and P_c Charmoniumlike Exotics."

6. CHARM 2015, Wayne State Univ., Detroit, MI, 18–22 May 2015: "A New Dynamical Picture for Production and Decay of the XYZ Mesons," (*plenary*).

7. Workshop on Continuous Advances in QCD 2013, Minneapolis, MN, 16–19 May 2013: "Does the Lattice Pick a Unique Large Nc Expansion?," (*plenary*).

8. Workshop, "Large N Gauge Theories," Galileo Galilei Institute, Florence, Italy, 22 May–11 June 2011, "Does Nature Have a Preferred $1/N_c$ Expansion?"

9. Workshop on Continuous Advances in QCD 2011, Minneapolis, MN, 12–15 May 2011, "Does Nature Have a Preferred $1/N_c$ Expansion?"

10. Maryland Center for Fundamental Physics, University of Maryland, Workshop "Large N Gauge Theories," 13–15 May 2010, "Nature's Choice Brand Large N_c Limit" (*plenary*).

11. Institute for Nuclear Theory, Seattle, Workshop "New Frontiers in Large N Gauge Theories", 3–6 February 2009, "Baryons in the $1/N_c$ Expansion" (*plenary*).

12. West Coast LHC Theory Network Meeting, UCLA, 21 November 2008, "The Minimal Lee-Wick Standard Model" (*plenary*).

13. American Physical Society Division of Nuclear Physics Meeting, Oakland, CA, 23–26 October 2008, "The Baryon Resonance Spectrum and the $1/N_c$ Expansion" (*plenary*).

14. Institute for Nuclear Theory, Seattle, Workshop "String Theory Methods in the Real World," 22 May 2008, "The Pion Form Factor in AdS/QCD" (*plenary*).

15. Workshop on Continuous Advances in QCD 2008, Minneapolis, MN, 15–18 May 2008, "The Pion Form Factor in AdS/QCD," (*plenary*).

16. Workshop on Continuous Advances in QCD 2006, Minneapolis, MN, 11–14 May 2006, "Baryons and Large N_c in Happy Resonance."

17. International Workshop on the Physics of Excited Baryons (NSTAR 05), 10–15 October 2005, Tallahassee, Florida, "Describing the Baryon Spectrum with $1/N_c$ QCD" (*plenary*).

18. International Conference on QCD and Hadronic Physics, 16–20 June 2005, Peking University, Beijing, "The $1/N_c$ Approach for Baryon Resonances."

19. CarlFest, College of William & Mary, 7 May 2005, "Large N_c Baryons: Modern and Postmodern."

20. Large N_c QCD 2004, Trento, Italy, 5–9 July 2004, "Baryon Resonances in the $1/N_c$ Expansion."

21. Workshop on Continuous Advances in QCD 2004, Minneapolis, MN, 13–16 May 2004, "Baryons, $\mathrm{IN_c}$."

22. Effective Summer in Berkeley, Berkeley, CA, 7 July–1 August 2003, "Baryons in the $1/N_c$ Expansion"

23. NSTAR 2002 Workshop on the Physics of Excited Nucleons, Pittsburgh, PA, 9–12 October 2002, "Baryon Resonances in the $1/N_c$ Expansion" (*plenary*).

24. American Physical Society Four Corners Section Meeting, Las Cruces, NM, 2–3 November 2001, "Large N_c QCD: Physics in a World of Many Colors."

25. RADCOR Symposium, Carmel, CA, 11–15 September 2000, "On Radiative Weak Annihilation Decays."

- 2 contributed talks at American Physical Society conferences,
  1 of these since employed at ASU:

  1. Division of Particles and Fields Meeting 2000, Columbus, OH, 9–12 August 2000, "A Lot of Flavor Physics from a Little Symmetry."

- Invited participant at 8 workshops (no presentation) since employed at ASU:

  1. Physics at the LHC 2012, Vancouver, British Columbia, Canada, 4–9 June 2012.

  2. Coming Opportunities in Physical Cosmology, ASU, 25–27 January 2011.

  3. INT@20, Institute for Nuclear Theory, Seattle, 1–2 July 2010.

  4. Effective Field Theories and the Many-Body Problem, INT, Seattle, 23 March–5 June 2009.

  5. Origins Initiative Symposium, Arizona State University, 3–6 April 2009.

  6. West Coast LHC Theory Network Workshop, 5 May 2006.

  7. QCD and String Theory, INT, Seattle, 19–22 February 2003.

  8. Generalized Parton Distributions and Hard Exclusive Processes, INT, Seattle, 23–30 June 2003.

12 Service

12.1 Professional

• Organizing Committee, *Is Our Universe Necessary?*, ASU Origins Initiative, Tempe, AZ, January 30–February 1, 2014
• Organized international conference (Chair), *Phenomenology of Large N_c QCD*, held 9–11 January 2002 on ASU campus
• European Centre for Theoretical Studies Associate (2004–present). Duties involve managing suggestions/proposals for upcoming workshops and conferences.
• Organizer of international conference *Large N_c 2004*, held 5–9 July 2004 in Trento, Italy
• APS Four Corners Section Meeting Organizing Committee (F 02–F 03)

12.2 National Review Panel

• NSF Grant Review Panelist (S 15)

12.3 Journal Refereeing

• Referee for Physical Review C, Physical Review D, Physical Review Letters, Physics Letters B, Nuclear Physics A, Nuclear Physics B, Journal of High Energy Physics, Reviews of Modern Physics, Advances in High Energy Physics, European Physical Journal C, American Journal of Physics, Journal of Modern Physics

12.4 Grant Refereeing

• Referee for NSF grant proposals

12.5 Arizona State University

• University Academic Senate (F 11–S 13)

12.6 College of Liberal Arts & Sciences

• College of Liberal Arts & Sciences Academic Senate (F 11–S 13)
• Undergraduate Resarch Scholarship Awards Selection Committee (S 10)
• Member of Cosmology Initiative Search Committee (S 09–S 10)
• Member of Search Committee for Department of Physics Chair (F 05–S 06)
• Prepared summary compilation of Department research accomplishments for undergraduate recruiting at ASU for College of Liberal Arts and Sciences (Su 02)

12.7 Department of Physics

• Director of Undergraduate Studies (Su 13–present)
• Chair, Department of Physics Particle Theory Faculty Search Committee (F 16–present)
• Member, Department of Physics Colloquium Committee (F 16–present)
• Member, Department of Physics Budget & Policy Committee (S 12–S 15)
• Member, Department Bylaws Revision Committee (F 12–F 14)
• Member, Department Review Committee (S 12)

• Senator representing Physics, University Academic Senate and College of Liberal Arts & Sciences (F 11–S 13)
• Mentor to junior Physics faculty (F 11–S 14)
• Chair, Graduate Examination Committee (Su 10–S 11)
• Member, Graduate Examination Committee (Su 09–S 11)
• Member, Department of Physics Particle Astrophysics Theory Faculty Search Committee (F 08–S 09)
• Organizer, Particle Physics and Astrophysics Seminar Series (F 08, F 09)
• Member, Department of Physics Budget & Policy Committee (F 07–Dec. 08)
• Chair, Department of Physics Particle Astrophysics Theory Faculty Search Committee (S 07)
• Department Equal Opportunity/Affirmative Action representative (S 07–F 08)
• Member and Secretary, Undergraduate Program Committee (F 06–S 08)
• Chair, Department of Physics & Astronomy Subatomic Theory Faculty Search Committee (F 03–S 04)
• Department Equal Opportunity/Affirmative Action representative (S 04–S 06)
• Society of Physics Students (SPS) faculty advisor (Su 2001–S 06)
• SPS Guest lecturer (S 01)
• Department of Physics & Astronomy Personnel Committee (F 02–S 04)
• Chair, Department of Physics & Astronomy Committee on Committees (F 03–S 07)
• Department of Physics & Astronomy Growth & Development Committee (F 01–S 02)
• Department of Physics & Astronomy Graduate Examination Committee (F 01–F 02)
• Organizer for graduate student recruitment program; delivered presentation on behalf of subatomic physics group (S 01, S 02)
• Faculty organizer, Department picnic (S 01, S 02)
• Guest lecturer, PHY 190 (Physics as a Career) (F 02)