Curriculum Vitae[1]

Richard W. Robinett

Personal:

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Department of Physics — Married, two children
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Education:

1975-1981, Ph. D., University of Minnesota
Thesis title: *Mass Scales in Grand Unified Theories*
Thesis Advisor: Prof. Jonathan L. Rosner

1971-1975, B. A. (Magna cum laude), University of Minnesota,
College of Liberal Arts, Honors Division,
(Double major in mathematics and physics)

Academic Experience:

2023-	Professor Emeritus, Penn State University
2000-2023	Professor, Penn State University
1994-1995	Faculty Research Visitor, Argonne National Laboratory (sabbatical leave)
1990-2000	Associate Professor, Penn State University
1986-1990	Assistant Professor, Penn State University
1983-1986	Research Associate-Lecturer, University of Massachusetts, Amherst
1981-1983	Research Associate, University of Wisconsin, Madison
1975-1981	Research Assistant-Teaching Associate, University of Minnesota

Administrative Experience:

2015	Acting Associate Dean, Eberly College of Science (PSU) (March-May)
2011	Interim Associate Dean, Eberly College of Science (PSU) (July-September)
2010-2011	Administrative Fellow, Eberly College of Science Dean's Office (PSU)
2003-2023	Associate Department Head, Physics Department (PSU)
2003-2022	Director of Graduate Studies, Physics Department (PSU)
1998-2003	Assistant Department Head, Physics Department (PSU)
1996-2023	Director of Undergraduate Studies, Physics Department (PSU)

[1] Last updated April 1, 2025

Other Professional Experience:

2000-2002	Associate Editor, American Journal of Physics (three year term)
2001-2003	General Member-at-Large of the Executive Committee, American Physical Society (APS) Forum on Education

Teaching/Advising/Administrative Awards and Honors:

2023	Eberly College of Science Special Recognition in Advising Award
2015	Schreyer Honors College Excellence in Honors Advising Award
2011	President's Award for Engagement with Students, Penn State University
2011	Schreyer Honors College Excellence in Honors Advising Award
2007	ECoS Alumni Society Distinguished Service Award, Penn State University
2005	Undergraduate Program Leadership Award, Penn State University
2003	Excellence in Advising Award, Penn State University, (Undergraduate Student Government award for faculty advising)
2002	C. I. Noll Award for Excellence in Teaching, Penn State University (Eberly College of Science Alumni Society)
1999	Atherton Award for Excellence in Teaching, Penn State University (University system wide award for "*...outstanding teaching at the undergraduate level.*")
1994	Provost's Award for Collaborative Instruction and Curricular Innovation (with J. Annett, S. Heppelmann, and P. Sokol), Penn State University
1992	Penn State Society of Physics Students (SPS) Teaching Award
1980	"TA of the Year", School of Physics and Astronomy teaching award, University of Minnesota

Research Awards and Honors:

2003	Fellow of the American Physical Society (APS) (Forum on Education) cited "*For his contributions to undergraduate education in quantum mechanics, especially in visualization, and for demonstrated excellence in the training and advising of undergraduate physics majors.*"
2003	Inclusion in *Who's Who in Science Higher Education*
1990-1991	SSC (Superconducting SuperCollider) Junior Faculty Fellowship Texas National Research Laboratory Commission (TNRLC)
1984	Fourth Award, Gravity Research Foundation, 1984 Awards (for "The Principle of Equivalence at Finite Temperature", with J. F. Donoghue and B. R. Holstein)
1977-1978	Institute of Technology Corporate Associates (ITCA) Fellowship

Professional Memberships:

Phi Beta Kappa, 1975-present
Sigma Xi, 1982-present
American Physical Society (Division of Particles and Fields), 1990-present
American Association of Physics Teachers (AAPT), 1996-present

Publications

Articles Published in Refereed Journals

(Undergraduate research students at the time of authorship are indicated by underline)
(Graduate research students at the time of authorship are indicated by **bold**)

1. R. W. Robinett and J. L. Rosner, "Prospects for a second neutral boson at low mass in $SO(10)$", Phys. Rev. **D25**, 3036-3064 (1982); **D27**, 679 (E) (1983).

2. R. W. Robinett, "Mass bounds in the Fritzsch-Mandelbaum composite model", Phys. Lett. **116B**, 144-146 (1982).

3. R. W. Robinett, "Neutral currents in E_6", Phys. Rev. **D26**, 2388-2395 (1982).

4. R. W. Robinett, "Neutral current interactions in grand unified theories", Phys. Rev. **D26**, 2526-2528 (1982).

5. R. W. Robinett and J. L. Rosner, "Mass scales in grand unified theories", Phys. Rev. **D26**, 2396-2419 (1982).

6. R. W. Robinett, "W magnetic moment in electroweak mixing and composite models and radiation zeros in $q_i\overline{q}_j \to W\gamma$", Phys. Rev. **D28**, 1185-1191 (1983).

7. R. W. Robinett, "W weak multipole moments in electroweak mixing and composite models", Phys. Rev. **D28**, 1192-1197 (1983).

8. V. Barger, R. W. Robinett, W. -Y. Keung, and R. J. N. Phillips, "Supersymmetric decay widths of weak bosons", Phys. Rev. **D28** (Rapid Communications) 2912-2914 (1983).

9. R. W. Robinett, "Homemade rainbows: a backyard experiment", Phys. Teacher **21**, 388-390 (1983).

10. V. Barger, R. W. Robinett, W. -Y. Keung, R. J. N. Phillips, "Production of gauge fermions at colliders", Phys. Lett. **131B**, 372-376 (1983).

11. R. W. Robinett, "A class of supersymmetric radiation zeros", Phys. Rev. **D30**, 688-689 (1984).

12. P. Langacker, R. W. Robinett, and J. L. Rosner, "New heavy gauge bosons in pp and $p\overline{p}$ collisions", Phys. Rev. **D30**, 1470-1487 (1984).

13. J. F. Donoghue, B. R. Holstein, and R. W. Robinett, "Renormalization of the energy-momentum tensor and the validity of the equivalence principle at finite temperature", Phys. Rev. **D30**, 2561-2572 (1984).

14. R. W. Robinett, "Supersymmetric QED at finite temperature and the principle of equivalence", Phys. Rev. **D31**, 336-340 (1985).

15. R. W. Robinett, "Supersymmetric electromagnetic moments and radiation zeros", Phys. Rev. **D31**, 1657-1660 (1985).

16. J. F. Donoghue, B. R. Holstein, and R. W. Robinett, "The principle of equivalence at finite temperature", Gen. Rel. and Grav. **17**, 207-214 (1985).

17. R. W. Robinett, "Production of scalar quarkonium in t-quarkonium radiative decays", Phys. Rev. **D31**, 3008-3009 (1985).

18. P. Moxhay and R. W. Robinett, "Searching for scalar quarkonium at proton-antiproton colliders", Phys. Rev. **D32**, 300-302 (1985).

19. R. W. Robinett, "Supersymmetry and ultra-high energy cosmic rays", Phys. Rev. Lett. **55**, 469-472 (1985).

20. R. W. Robinett, "Extended strongly interacting Higgs theories", Phys. Rev. **D32**, 1780-1785 (1985).

21. R. W. Robinett, "Light gluinos and quark-gluon plasma formation in relativistic heavy-ion collisions", Phys. Rev. **D32**, 2449-2451 (1985).

22. J. F. Donoghue, B. R. Holstein, and R. W. Robinett, "Quantum electrodynamics at finite temperature", Ann. Phys. **164**, 233-253 (1985); (E) **172**, 172 (1986).

23. R. W. Robinett, "Two Higgs doublets and heavy quarkonium decays", Phys. Rev. **D33**, 736-739 (1986).

24. R. W. Robinett, "Searching for supersymmetry in high-energy cosmic ray interactions", Phys. Rev. **D33**, 1239-1246 (1986).

25. R. W. Robinett, "On the mixing and production of exotic fermions in E_6", Phys. Rev. **D33**, 1908-1911 (1986).

26. R. W. Robinett, "The phenomenology of isosinglet Higgs bosons in extended electroweak models", Phys. Rev. **D34**, 182-185 (1986).

27. E. Golowich and R. W. Robinett, "Probing the three-Higgs boson coupling in heavy quarkonium decays", Phys. Rev. **D34**, 888-891 (1986).

28. J. F. Donoghue, B. R. Holstein, and R. W. Robinett, "On the gravitational coupling at finite temperature", Phys. Rev. **D34**, 1208-1209 (1986).

29. E. Golowich and R. W. Robinett, "Limits on millicharged matter from beam dump experiments", Phys. Rev. **D35**, 291-292 (1987).

30. R. W. Robinett, "t-quarkonium decays into $b\bar{b}$ decays and charged Higgs bosons", Phys. Rev. **D35**, 2897-2899 (1987).

31. R. W. Robinett, "Extra Z's from E_6 and other exotic physics in heavy-quarkonium decays", Phys. Rev. **D36**, 719-723 (1987).

32. H. Grotch and R. W. Robinett, "New limits from single-photon searches at e^+e^- colliders", Phys. Rev. **D36**, 2153-2156 (1987).

33. R. W. Robinett, "Exotic quarks from the superstring and toponium decays", Phys. Lett. **B197**, 531-535 (1987).

34. R. W. Robinett, "The production of leptoquark bosons in ultra-high energy neutrino interactions", Phys. Rev. **D37**, 84-88 (1988).

35. R. W. Robinett, "New production mechanisms for exotic quarks of superstring-inspired E_6 models at *ep* colliders", Phys. Rev. **D37**, 1321-1324 (1988).

36. **M. A. Doncheski**, H. Grotch, and R. W. Robinett, "Axigluons and heavy quarkonia", Phys. Lett. **206B**, 137-140 (1988).

37. **M. A. Doncheski**, H. Grotch, and R. W. Robinett, "Axigluons in the Υ system", Phys. Rev. **D38** (Rapid communications) 412-413 (1988).

38. H. Grotch and R. W. Robinett, "Limits on the τ neutrino electromagnetic properties from single photon searches at e^+e^- colliders", Z. Phys. **C39**, 553-556 (1988).

39. R. W. Robinett, "Production prospects for Higgs bosons in chiral-color models", Phys. Rev. **D38** (Rapid communications), 2301-2304 (1988).

40. **M. A. Doncheski**, H. Grotch, R. W. Robinett, and K. Schilcher, "Higgs boson radiative corrections to the decay ${}^3S_1(Q\overline{Q}) \to H\gamma$", Phys. Rev. **D38**, 3511-3515 (1988).

41. R. W. Robinett and T. G. Rizzo, "Axigluon production at *ep* colliders", Phys. Lett. **B215**, 777-782 (1988).

42. R. W. Robinett, "Partial-wave unitarity constraints on the axigluon mass", Phys. Rev. **D39**, 834-837 (1989).

43. R. W. Robinett, "Flavor-changing decays of toponium", Phys. Lett. **B218**, 476-480 (1989).

44. **R. Fletcher**, F. Halzen, and R. W. Robinett, "Probing the gluon structure of the photon with HERA", Phys. Lett. **B225**, 176-180 (1989).

45. T. G. Rizzo and R. W. Robinett, "Triple gauge boson decay of new neutral gauge bosons", Phys. Lett. **B226**, 117-121 (1989).

46. M. A. Doncheski, H. Grotch, R. W. Robinett, K. Schilcher, G. Belanger, and P. Moxhay, "Flavor-changing decays of the Z^0 and leptoquarks", Phys. Rev. **D40**, 2301-2304 (1989).

47. R. W. Robinett, "$\psi\psi$ production and multiple parton interactions at supercollider energies", Phys. Lett. **B230**, 153-158 (1989).

48. S. Heppelmann, R. W. Robinett, and P. Moxhay, "$\psi\Upsilon$ production in hadronic collisions", Phys. Lett. **B233**, 245-250 (1989).

49. L. Bergström and R. W. Robinett, "Z and vector meson production in hadronic collisions at large transverse momentum", Phys. Lett. **B238**, 112-116 (1990).

50. L. Bergström and R. W. Robinett, "On the rare decays $Z \to VV$ and $Z \to VP$", Phys. Rev. **D41**, 3513-3514 (1990).

51. L. Bergström and R. W. Robinett, "Z decay into a vector meson and a lepton pair", Phys. Lett. **B245**, 249-250 (1990).

52. L. Bergström, R. W. Robinett, and **L. Weinkauf**, "Aspects of ψ and Υ production at supercollider energies", Phys. Rev. **D42**, 825-834 (1990).

53. M. A. Doncheski and R. W. Robinett, "Low transverse momentum ψ and Υ production in polarized proton-proton collisions", Phys. Lett. **B248**, 188-192 (1990).

54. R. W. Robinett, "Charmonium production at large transverse momentum in polarized proton-proton collisions", Phys. Rev. **D43**, 113-118 (1991).

55. L. Bergström, H. Grotch, and R. W. Robinett, "D-wave quarkonium production and annihilation decays: Formalism and applications", Phys. Rev. **D43**, 2157-2160 (1991).

56. R. W. Robinett and **L. Weinkauf**, "Charged Higgs boson decay $H^{\pm} \to \Upsilon W^{\pm}$: the effects of P- and D- states", Mod. Phys. Lett. **A17**, 1575-1579 (1991).

57. R. W. Robinett, "Final state gluon polarization in large transverse momentum quarkonium production", Z. Phys. **C51**, 89-91 (1991).

58. M. A. Doncheski, R. W. Robinett, and **L. Weinkauf**, "Spin dependence of three-jet and two-jet plus photon events in polarized proton-proton collisions", Phys. Rev. **D44**, 2717-2726 (1991).

59. R. W. Robinett and **L. Weinkauf**, "Exclusive QCD predictions for proton-antiproton decay rates of $^3D_1$ charmonium states", Phys. Lett. **B271**, 231-236 (1991).

60. L. Bergström, **P. Ernstöm**, and R. W. Robinett, "Large p_T production of D-wave quarkonium states at hadron colliders", Phys. Rev. **D45**, 116-123 (1992).

61. R. W. Robinett, "Transverse spin asymmetries for three-jet production in hadronic collisions", Phys. Rev. **D45**, 2563-2565 (1992).

62. G. Bunce, J. Collins, S. Heppelmann, R. Jaffe, S. Y. Lee, Y. Makdisi, R. W. Robinett, J. Soffer, M. Tannenbaum, D. Underwood, and A. Yokosawa, "Polarized protons at RHIC", Particle World **3**, 1-12 (1992).

63. M. A. Doncheski and R. W. Robinett, "Double photon production in polarized proton-proton collisions", Phys. Rev. **D46**, 2011 (1992).

64. R. W. Robinett and **L. Weinkauf**, "Covariant formalism for F-wave quarkonium production and annihilation: application to $^3F_J \to gg$ decays", Phys. Rev. **D46**, 3832-3840 (1992).

65. M. A. Doncheski, R. W. Robinett, and **L. Weinkauf**, "Spin-spin asymmetries in large transverse momentum Higgs boson production", Phys. Rev. **D47**, 1243-1246 (1993), `hep-ph/9208250`.

66. R. W. Robinett, "Probing the three-gluon coupling of QCD using heavy quark and quarkonium production in hadronic collisions", Phys. Lett. **B318**, 189-196 (1993).

67. M. Karliner and R. W. Robinett, "Aspects of heavy quark production in polarized proton-proton collisions", Phys. Lett. **B324**, 209-216 (1994), `hep-ph/9310346`.

68. J. Goldstein, C. Lebedziek, and R. W. Robinett, "Supersymmetric quantum mechanics: examples with Dirac δ functions", Am. J. Phys. **62**, 612-618 (1994).

69. M. A. Doncheski and R. W. Robinett, "Aspects of ψ and χ production in polarized proton-proton collisions", Z. Phys. **C63**, 611-618 (1994), hep-ph/940124.

70. S. P. Fraser, S. T. Fraser, and R. W. Robinett, "Aspects of four-jet production in polarized proton-proton collisions", Phys. Rev. **D51**, 6580-6583 (1995), hep-ph/9411359.

71. R. W. Robinett, "Quantum and classical probability distributions for position and momentum", Am. J. Phys. **63**, 823-832 (1995)

72. R. W. Robinett, "Visualizing the solutions of the circular infinite well in classical and quantum mechanics", Am. J. Phys. **64**, 440-446 (1996)

73. R. W. Robinett, "Quantum mechanical time-development operator for the uniformly accelerated particle", Am. J. Phys. **64**, 803-808 (1996).

74. R. W. Robinett and P. E. Sokol, "Investigating physical pendula with K'NEX^{TM} ", Phys. Teacher **34**, 427-429 (1996).

75. R. W. Robinett, "Average value of position for the anharmonic oscillator: classical versus quantum results", Am. J. Phys. **65**, 190-194 (1997).

76. R. W. Robinett, "WKB energy quantization and first-order perturbation theory", Am. J. Phys. **65**, 320-328 (1997).

77. M. A. Doncheski and R. W. Robinett, "Third-generation leptoquark decays and collider searches", Phys. Lett. **B411**, 107-111 (1997), hep-ph/9707486.

78. M. A. Doncheski and R. W. Robinett, "Closing the window on the axigluon mass using top quark production data", Phys. Lett. **B412**, 91-94 (1997), hep-ph/9706490.

79. M. A. Doncheski and R. W. Robinett, "Leptoquark production in ultrahigh-energy neutrino interactions reexamined", Phys. Rev. **D56**, 7412-7415 (1997), hep-ph/9707328.

80. R. W. Robinett, "Visualizing classical periodic orbits from the quantum energy spectrum via the Fourier transform: Simple infinite well examples", Am. J. Phys. **65**, 1167-1175 (1997).

81. R. W. Robinett, "Periodic orbit theory of a continuous family of quasi-circular billiards", J. Math. Phys. **39**, 278-298 (1998).

82. R. W. Robinett, "The polarizability of a particle in power law potentials: a WKB analysis", Eur. J. Phys. **19**, 31-39 (1998).

83. R. W. Robinett, "Energy eigenvalues and periodic orbits for the circular disk or annular infinite well", Surf. Rev. and Lett. **5**, 519-526 (1998).

84. M. A. Doncheski and R. W. Robinett, "Radiation zeros and scalar particles beyond the standard model", hep-ph/9805328, Phys. Lett. **B435**, 364-372 (1998).

85. M. A. Doncheski and R. W. Robinett, "Eliminating the low-mass axigluon window", Phys. Rev. **D58**, 097702 (3 pages) (1998) hep-ph/9804226.

86. R. W. Robinett, C. Mulfinger, and J. Passaneau, "Optical realization of a circular billiard", Phys. Teacher **36**, 547-552 (1998).

87. R. W. Robinett, "Isolated versus non-isolated periodic orbits in variants of the two-dimensional square and circular wells", J. Math. Phys. **40**, 101-122 (1999).

88. R. W. Robinett, "Periodic orbit theory analysis of the circular disk or annular billiard: non-classical effects and the distribution of energy eigenvalues", Am. J. Phys. **67**, 67-78 (1999).

89. M. A. Doncheski and R. W. Robinett, "Anatomy of a quantum 'bounce' ", Eur. J. Phys. **20**, 29-37 (1999).

90. R. W. Robinett, "Visualizing the collapse and revival of wavepackets in the infinite square well using expectation values", Am. J. Phys. **68**, 410-420 (2000), `quant-ph/0307041`.

91. R. W. Robinett, Invited comparative review of undergraduate and graduate textbooks on classical mechanics, Am. J. Phys. **68**, 390-393 (2000).

92. R. W. Robinett, "Wave packet revivals and quasi-revivals in one-dimensional power law potentials", J. Math. Phys. **41**, 1801-1813 (2000).

93. M. A. Doncheski and R. W. Robinett, "Extra dimensional gravity and dijet production at $\gamma\gamma$ colliders, Phys. Rev. **D61**, 117701 (4 pages) (2000), `hep-ph/9910346`.

94. M. A. Doncheski and R. W. Robinett, "Comparing classical and quantum probability distributions for an asymmetric infinite well", Eur. J. Phys. **21**, 217-228 (2000), `quant-ph/0307014`.

95. R. W. Robinett, "Periodic orbit theory analysis of a family of deformed hemispherical billiards", Surf. Rev. and Lett. **7**, 151-160 (2000).

96. M. A. Doncheski and R. W. Robinett, "Expectation value analysis of wave packet solutions for the quantum bouncer: short-term classical and long-term revival behavior", Am. J. Phys. **69**, 1084-1090 (2001), `quant-ph/0307046`.

97. R. W. Robinett, "Spacecraft artifacts as physics teaching resources", Phys. Teach. **39**, 476-479 (2001)

98. **E. Cataloglu** and R. W. Robinett, "Testing the development of student conceptual and visualization skills in quantum mechanics through the undergraduate career", Am. J. Phys. **70**, 238-251 (2002).

99. R. W. Robinett, "Visualizing classical and quantum probability densities for momentum using variations on familiar one-dimensional potentials", Eur. J. Phys. **23**, 165-174 (2002), `quant-ph/0307056`.

100. R. W. Robinett and S. Heppelmann, "Quantum wave packet revivals in circular billiards", Phys. Rev. **A 65**, 062103-1 – 62103-10 (2002) `quant-ph/0307020`.

101. M. A. Doncheski and R. W. Robinett, "Quantum mechanical analysis of the equilateral triangle billiard: periodic orbit theory and wave packet revivals", Ann. Phys. **299**, 208-227 (2002), `quant-ph/0307063`.

102. R. W. Robinett, "It's, like, relative motion at the mall", Phys. Teach. **41**, 140-142 (2003).

103. R. W. Robinett, "Quantum mechanics of the two-dimensional circular billiard plus baffle system and half-integral angular momentum", Eur. J. Phys. **24**, 231-243 (2003), quant-ph/0307035.

104. M. A. Doncheski, S. Heppelmann, R. W. Robinett, and **D. C. Tussey**, "Wave packet construction in two-dimensional quantum billiards: Blueprints for the square, equilateral triangle, and circular cases", Am. J. Phys. **71**, 541-557 (2003), quant-ph/0307070.

105. M. A. Doncheski and R. W. Robinett, "Wave packet revivals and the energy eigenvalue spectrum of the quantum pendulum", Ann. Phys. **308**, 578-598 (2003), quant-ph/0307079.

106. R. W. Robinett, "Quantum wave packet revivals", Phys. Rep. **392**, 1-119 (2004), quant-ph/0401031.

107. M. A. Belloni, M. A. Doncheski, and R. W. Robinett, "Wigner quasi-probability distribution for the infinite square well: Energy eigenstates and time-dependent wave packets", Am. J. Phys. **72**, 1183-1192 (2004), quant-ph/0312086.

108. R. W. Robinett and L. C. Bassett, "Analytic results for Gaussian wave packets in four model systems: I. Visualization of the kinetic energy", Found. Phys. Lett. **17**, 607-625 (2004), quant-ph/0408049

109. R. W. Robinett and L. C. Bassett, "Analytic results for Gaussian wave packets in four model systems: II. Autocorrelation functions", Found. Phys. Lett. **17**, 645-661 (2004), quant-ph/0408050

110. M. Belloni, M. A. Doncheski, and R. W. Robinett, "Exact results for 'bouncing' Gaussian wave packets", Phys. Scripta **71**, 136-140 (2005), quant-ph/0408182

111. M. Belloni, M. A. Doncheski, and R. W. Robinett, "Zero-curvature solutions of the one-dimensional Schrödinger equation", Phys. Scripta. **72**, 122-126 (2005) quant-ph/0410104.

112. R. W. Robinett, M. A. Doncheski, and L. Bassett, "Simple examples of position-momentum correlated Gaussian free-particle wave packets in one-dimension with the general form of the time-dependent spread in position", Found. Phys. Lett. **18**, 645-661 (2005) quant-ph/0502097.

113. L. P. Gilbert, M. Belloni, M. A. Doncheski, and R. W. Robinett, "More on the asymmetric infinite well: energy eigenstates with zero curvature", Eur. J. Phys. **26**, 815-825 (2005) quant-ph/0512156.

114. R. W. Robinett, "Image method solutions for free-particle wave packets in wedge geometries", Eur. J. Phys. **27**, 281-289 (2006) quant-ph/0512108.

115. R. W. Robinett "Self-interference of single Bose-Einstein condensates due to boundary effects", Phys. Scr. **73**, 681-684 (2006) arXiv:quant-ph/0511075.

116. L. P. Gilbert, M. Belloni, M. A. Doncheski, and R. W. Robinett, "Piecewise zero-curvature energy eigenfunctions in one dimension", Eur. J. Phys. **27**, 1331-1339 (2006) .

117. L. P. Gilbert, M. Belloni, M. A. Doncheski, and R. W. Robinett, "Playing quantum physics Jeopardy with zero-energy eigenstates", Am. J. Phys. **74**, 1035-1036 (2006) arXiv:quant-ph/0606196

118. M. Belloni and R. W. Robinett, "Quantum mechanical sum rules for two model systems", Am. J. Phys. **76**, 798-806 (2008) arXiv:0802.2217.

119. M. Belloni and R. W. Robinett, "Constraints on Airy function zeros from quantum-mechanical sum rules", J. Phys A: Math. Theor. **42**, 075203 (2009) arXiv:1007.1623.

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122. M. Belloni and R. W. Robinett, "Less than perfect quantum wavefunctions in momentum space: How $\phi(p)$ senses disturbances in the force", Am. J. Phys. **79**, 94-102 (2011) arXiv:1010.4244.

123. L. J. Ruckle, M. Belloni and R. W. Robinett, "The biharmonic oscillator and asymmetric linear potentials: from classical trajectories to momentum-space probability densities in the extreme quantum limit", Eur. J. Phys. **33**, 1505-1525 (2012).

124. M. Belloni and R. W. Robinett "The infinite well and Dirac delta function potentials as pedagogical, mathematical, and physical models in quantum mechanics", Phys. Rep. **540**, 25-122 (2014).

125. R. W. Robinett, "Dimensional analysis as the 'other' language of Physics", Am. J. Phys. **83**, 353-361 (2015).

126. K. Gutierrez, E. León, M. Belloni, and R. W. Robinett, "Exact results for the infinite supersymmetric extensions of the infinite square well", Eur. J. Phys, **39**, 065404 (17 pp) (2018).

127. R. W. Robinett, "An analog of the pendulum/rotor system with elementary solutions", Eur. J. Phys. **45**, 065002 (16 pp) (2024).

128. R. W. Robinett, "Quantum fields from dimensional analysis: Applictions in condensed matter systems", Am. J. Phys. **93**(4) 344-356 (2025). (Featured article for April 2025)

Monographs

1. **Proceedings of the Polarized Collider Workshop**, Penn State University, University Park, PA, 1990, edited by J. Collins, S. Heppelmann, and R. W. Robinett, AIP Conference Proceedings, No. 223, Particles and Fields 42 (American Institute of Physics, New York, 1991).

Textbooks

1. **Quantum Mechanics: Classical Results, Modern Systems, and Visualized Examples**, Oxford University Press, 1996.
   - Selected as the Main Selection for Winter 1996-1997 by Newbridge Library of Science Book Club.
2. **Quantum Mechanics: Classical Results, Modern Systems, and Visualized Examples**, Second Edition, Oxford University Press, 2006
   - Includes on-line resources such as
     - **Guide to the Pedagogical Literature on Quantum Mechanics** (90 pages)
     - **Solutions Manual** (340 pages)
     - **Supplementary Chapters** (50 pages)
     - **Worksheets** (additional extended homework problems, 60 pages)
3. **Dimensional Analysis Across the Landscape of Physics: Classic Results, Textbook Examples, and Exploration of Research**, Oxford University Press, 2024
   - **Solutions Manual** (250 pages) (online through Oxford University Press)
   - Example/sample Mathematica code and commentary - **Automating Dimensional Analysis with Mathematica**
     - Wolfram Community, STAFF PICKS, February 26, 2025
     - `https://community.wolfram.com/groups/-/m/t/3400679`

Unpublished arXiv submissions

1. R. W. Robinett, "Using Physics to learn Mathematica to do physics: From homework problems to research examples", arXiv:0712.2358v1 [physics.ed-ph]
   - Description of development of new *Introduction to Mathematica® in Physics* course.

Articles Published in Non-refereed Journals and Conference Proceedings

1. R. W. Robinett and J. L. Rosner, "Proton stability", Proc. of the 1981 Int. Conf. on Neutrino Physics and Astrophysics, ed. by R. J. Cence and A. Roberts (Univ. of Hawaii, Honolulu, 1981), p. 193-204 (presented by J. L. Rosner).

2. R. W. Robinett and J. L. Rosner, "Second Z in $SO(10)$", Proc. of the XVII Rencontre de Moriond, ed. by J. Tran Thanh Van, v. 1, p. 603-613 (presented by J. L. Rosner).

3. R. W. Robinett and J. L. Rosner, "Minimally extended electroweak gauge theories in $SO(10)$ and E_6", in Proc. of the Neutrino Mass and Gauge Structure of the Weak Interactions Mini-Conference (AIP Conference Proceedings No. 99, New York 1983), ed. by V. Barger and D. Cline, p. 193-201 (presented by R. W. Robinett).

4. C. N. Leung, R. W. Robinett and J. L. Rosner, "Second-order fermion masses", in Proc. of the Neutrino Mass and Gauge Structure of the Weak Interactions Mini-Conference (AIP Conference Proceedings No. 99, New York 1983), ed. by V. Barger and D. Cline, p. 292-296 (presented by J. L. Rosner).

5. R. W. Robinett and J. L. Rosner, "Electroweak gauge theories with extra $U(1)$'s in $S)(10)$ and E_6", in Electroweak Interactions at High Energies, Proceedings of the 1982 DESY workshop, ed. by R. Kogerler and D. Schildknecht (World Scientific Publishing Co., Singapore, 1983), p. 273-277 (presented by R. W. Robinett).

6. P. Langacker, R. W. Robinett, and J. L. Rosner, "The production and decay of heavy gauge bosons in pp and $p\overline{p}$ collisions", in Proceedings of the Workshop on Electroweak Symmetry Breaking, (LBL-18571), ed. by I. Hinchliffe, p. 54-57, Lawrence Berkeley Labs (presented by J. L. Rosner).

7. J. L. Rosner, P. Langacker, and R. W. Robinett, "Forward-backward asymmetries in W and Z decays", DPF Workshop on pp options for the Supercollider", (Univ. of Chicago, 1984), ed. by J. A. Polcher and A. R. White, p. 202-206 (presented by J. L. Rosner).

8. R. W. Robinett, "Axigluons and quarkonia", in the Proceedings of the 1988 Meeting of the Division of Particles and Fields of the APS (Storrs, CT, 1988), (World Scientific, Singapore, 1990), ed. by K. Haller, p. 749-751.

9. R. W. Robinett, "Flavor-changing decays of toponium and single b' production", Proceedings of the 2nd International Symposium on the 4th Family of Quarks and Leptons" (UCLA, 1989), New York Academy of Sciences (Vol. 578), ed. by A. Soni and D. Cline, p. 438-444.

10. R. W. Robinett, "Spin and polarized proton-proton collisions at RHIC", in Proceedings of Particles and Fields '91, joint meeting of the DPF/APS and the DP/CAP, Vancouver, Canada, 1991, (World Scientific, Singapore, 1992), ed. by D. Axen, D. Bergman, and M. Comyn, p. 647-651.

11. M. A. Doncheski and R. W. Robinett, "Double photon production in polarized proton-proton collisions", in Proceedings of Particles and Fields '92, 7th meeting of the Division of Particles and Fields of the APS (DPF 92), Batavia, IL, Nov. 1992, p. 1039-1041.

12. R. W. Robinett, "Prospects for spin physics at RHIC", in Proceedings of the International Symposium on Particle Theory and Phenomenology, Ames, Iowa, May 1995, ed. by J. -W. Qiu and G. Valencia, p. 103-108, `hep-ph/9506230`.

Other Research Contributions

1. Co-organizer, *Polarized Collider Workshop*, Penn State University, November 1990.
2. Founding member of RHIC Spin Collaboration (RSC) November 1990.
3. Co-author, RHIC Spin Collaboration (RSC) letter of intent, May 1991, RHIC-SPIN-LOI-1991.
4. Co-author, Joint RSC-PHENIX-STAR proposal to BNL, August, 1992.
5. Co-author, Update to joint RSC-PHENIX-STAR proposal to BNL, August, 1993.

Invited Talks

Seminars, Colloquia, and Talks at Conferences/Workshops

1. "*Gutsier Guts*", Department of Physics, University of Wisconsin-Madison, January 1980.
2. "*Grand unified models based on* $SO(10)$ *and* E_6", Department of Physics, University of Chicago, September 1981.
3. "*Neutral currents and extra Z's in non-minimal grand unified models*", Theoretical Physics group, Fermilab National Laboratory, October 1981.
4. "*Electroweak interactions with extra* $U(1)$*'s in* $SO(10)$ *and* E_6", DESY Workshop on Electroweak Interactions at High Energies, Hamburg, West Germany, October 1982.
5. "*Minimally extended electroweak gauge theories in* $SO(10)$ *and* E_6", at Neutrino Mass and Gauge Structure of the Weak Interactions Mini-Conference, Telemark Wisconsin, November 1982.
6. "*W boson weak and electromagnetic moments and composite models*", Department of Physics, Purdue University, November 1982.
7. "*W boson electromagnetic moments, radiation zeros and composite models*", Department of Physics, University of Pennsylvania, January 1983.
8. "*The principle of equivalence at finite temperature*", Department of Physics, Northeastern University, August 1984.
9. "*The principle of equivalence at finite temperature*", Department of Physics, Indiana University, November 1984.
10. "*The principle of equivalence at finite temperature*", Department of Physics, Wisconsin-Madison, February 1984.
11. "*The principle of equivalence at finite temperature*", Theoretical Physics Group, Argonne National Laboratory, February 1984.
12. "*Aristotle was right: heavier things do fall faster (if they're hot) or The principle of Equivalence at finite temperature*", Department of Physics, Vanderbilt University, February 1985.
13. "*Supersymmetric particle physics*", Department of Physics, State University of New York at Buffalo, October 1985.
14. "*Supersymmetry and cosmic ray physics*", Department of Physics, Penn State University, November 1985.
15. "*Supersymmetry and cosmic ray physics*", Department of Physics, University of Miami, November 1985.
16. "*Why the universe might be supersymmetric*", Department of Physics, Notre Dame University, February 1986.

17. "*Why the universe might be supersymmetric*", Department of Physics, University of Massachusetts, Amherst, May 1986.

18. "*Searching for exotic physics in toponium decays*", CERN, Geneva, Switzerland, February 1987.

19. "*Exotic quarks in E_6 theories*", 11th International Workshop on Weak Interactions, St. Johns College, Santa Fe, June 1987.

20. "*Phenomenology of superstring-inspired E_6 models*", Department of Physics, University of Montreal, March 1988.

21. "*Axigluons and all that*", Department of Physics, University of Toronto, April 1988.

22. "*Axigluons and all that*", Department of Physics, University of Guelph, April 1988.

23. "*Axigluons and quarkonia*", 1988 Meeting of the Division of Particles and Fields of the American Physical Society, University of Connecticut, Storrs, August 1988.

24. "*New physics from toponium (and related topics)*", Department of Physics, University of Wisconsin-Madison, February 1989.

25. "*Flavor-changing decays of toponium and single b' production*", 2nd International Symposium on the 4th Family of Quarks and Leptons, UCLA, 1989.

26. "*Heavy quarkonium production at colliders as a test of the gluon content of the proton and photon*", Department of Physics, Drexel University, March 1990.

27. "*Spin physics at RHIC"*, Department of Physics, Stockholm University, November 1990.

28. "*Spin physics at RHIC*", Department of Physics, Uppsala University, November 1990.

29. "*Spin physics at RHIC*", HEP Theory Group, Brookhaven National Laboratory, November 1990.

30. "*Spin and polarized proton-proton collisions at RHIC*", invited talk at PF91, joint meeting of the Division of Particles and Fields of the American Physical Society and the Division of Particles of the Canadian Association of Physics, Vancouver, British Columbia, Canada, August 1991.

31. "*Towards a program of polarized proton-proton collisions at RHIC*", HEP Division, Argonne National Laboratory, November 1991.

32. "*Towards a program of polarized proton-proton collisions at RHIC*", Department of Physics, University of Wisconsin-Madison, November 1991.

33. "*Towards a program of polarized proton-proton collisions at RHIC*", Department of Physics, Carnegie-Mellon University, February 1992.

34. "*Towards a program of polarized proton-proton collisions at RHIC*", Department of Physics, McGill University, November 1992.

35. "*Prospects for spin physics at RHIC*", HEP experimental group, University of Chicago, October 1994.

36. "*Prospects for spin physics at RHIC*", Department of Physics, University of Illinois at Chicago, November 1994.

37. "*Prospects for spin physics at RHIC*", invited talk at XVII International Kazimierz Meeting on Particle Physics, Iowa State University, May 1995.

38. "*Prospects for spin physics at RHIC*", HEP Division, Argonne National Laboratory, June 1995.

39. "*Visualizing the solutions to problems in quantum mechanics*", Department of Physics, Villanova University, October 1996.

40. "*Closing the low-mass axigluon window with top quark production data*", 1998 Madison Pheno-CTEQ meeting, University of Wisconsin Madison, April 1998.

41. "*Validation of the Quantum Mechanics Visualization Instrument*", AAPT (American Association of Physics Teachers) meeting, January 2000 (presented by E. Cataloglu).

42. "*Augmentation of students' visual understanding of selected topics in quantum mechanics*", AAPT (American Association of Physics Teachers) meeting, January 2000 (presented by F. Tasar).

43. "*Comparing classical and quantum probability distributions for an asymmetric infinite well*", AAPT (American Association of Physics Teachers) meeting, August 2000.

44. "*Development and tests of a quantum mechanics assessment instrument*", AAPT (American Association of Physics Teachers) meeting, August 2000.

45. "*Development of the Quantum Mechanics Visualization Instrument (QMVI)*", Summer 2001 Gordon Conference on Scientific Visualization, August 2001, Mount Holyoke College.

46. "*Periodic orbit theory analysis of simple variants of familiar two dimensional billiard systems*", invited talk at the meeting of the American Mathematical Society, Irvine, CA, November 2001.

47. "*Development and validation of an achievement test for quantum mechanics: The Quantum Mechanics Visualization Instrument (QMVI)*", by E. Cataloglu, R. W. Robinett, and V. Lunetta, 2002 Annual International Conference of the National Association for Research in Science Teaching (NARST) New Orleans , LA April 7-10, 2002. (Presented by E. Cataloglu.)

48. "*Testing the development of student conceptual and visualization understanding in quantum mechanics through the undergraduate career*", invited plenary talk at the Summer 2002 Gordon Conference on Physics Research and Education: Quantum Mechanics, June 2002, Mount Holyoke College.

49. "*Testing the development of student conceptual and visualization understanding in quantum mechanics through the undergraduate career*", invited talk at the April 2003 meeting of the American Physical Society, Philadelphia, PA.

50. "*Quantum wave packet revivals*, Winter 2004 AAPT meeting, Miami, Fl.

51. "*Assessment of student understanding in quantum mechanics informing the development of novel problems and visualization methods*", Seminar, Ohio State University, November 2004.

52. "*Time-dependent phenomena in quantum mechanics: Pedagogical examples modeling modern experimental realizations*", seminar at Indiana University of Pennsylvania, April 2006.

53. "*Time-dependent phenomena in quantum mechanics: Pedagogical examples modeling modern experimental realizations*", seminar at Davidson University, April 2006.

54. "*Quantum wave packet revivals*", Institute Laue Langevin Grenoble, France (May 2006).

55. "*Quantum mechanics in the undergraduate curriculum in the United States*", Invited plenary talk at the 3rd China University Physics Course Forum on "*Communication and Discussion: University Physics Curriculum Construction in China, America, and Russia*", Wuhan, China (Oct 2007).

56. "*Undergraduate computational physics at Penn State University - Research experiences and coursework*", invited talk at Joint APS/AAPT meeting, Washington DC (Feb 2010).

57. "*Less than perfect wavefunctions in momentum-space: How $\phi(p)$ senses disturbances in the force*", Invited talk at the 2010 UMass Phenomenology Workshop, UMass Amherst (October 2010).

58. "*A revised and improved junior 'careers' course for Physics majors*", contributed talk at Summer AAPT meeting, Portland OR (June 2013).

59. "*Sum rules in non-relativistic quantum mechanics: A pedagogical tutorial*", Invited talk at Foundations of Non-Linear Optics (FoNLO) 2016, Tufts University (August 2016).

60. "*Quantum Mechanics Just Over the Horizon: Classroom Exercises Inform (New-ish) Classic Experiments*", Colloquium, West Virginia University (September 2016).

61. "*Exact results for infinite supersymmetric hierarchies of familiar potentials on the half-line: Applications to quantum mechanical sum rules*", Invited talk at Foundations of Non-Linear Optics (FoNLO) 2018, Skidmore College (July 2018)

62. *Dimensional analysis as the 'other' language of Physics*, Colloquium, University of Toledo (November 2019)

Other talks

1. '*Jon the Educator*', presentation at Rosner-Fest, retirement celebration for Prof. Jonathan Rosner, University of Chicago, Feb. 2011

Membership on Graduate Degree Candidates' Committees

Graduate Student Committees: Physics

1987-1990	– – –	Steven Alexander	Physics
1989-1991	– – –	Robert Brott	Physics
1988-1990	Ph. D.	Michael Doncheski	Physics
1989-1991	Ph. D.	Simon Durrant	Physics
1989-1991	Ph. D.	Seungjoon Hyun	Physics
1989-1992	Ph. D.	Sangpyo Kim	Physics
1990-1993	Ph. D.	Anna Majewska	Physics
1990-1993	Ph. D.	John Reid	Physics
1991-1994	Ph. D.	Randall Scalise	Physics
1990-1993	Ph. D.	Laura Weinkauf (**Advisor**)	Physics
1991-1993	Ph. D.	J. Wu	Physics
1991-1993	Ph .D.	Bin Chen	Physics
1994-1996	Ph. D.	John Josef	Physics
1997-1998	Ph. D.	Andreas Freund	Physics
1997-1999	Ph. D.	Vadim Guzey	Physics
2000-2001	Ph. D.	Nadiya Tkachuk	Physics
2001-2001	Ph. D.	Daniel Zhalov	Physics
2001-2002	Ph. D.	Seiji Takemae	Physics
2001-2002	M. Ed.	Douglas Tussey (**Advisor**)	Physics
2002-2004	Ph. D.	Fernando Sudarshan	Physics
2002-2005	Ph. D.	Chris van der Broeck	Physics
2003-2005	Ph. D.	Sasha Pavlyk	Physics
2003-2005	Ph. D.	Sean McReynolds	Physics
2002-2009	Ph. D.	Isaac Mognet	Physics
2003-2006	Ph. D.	Theodore Rogers	Physics
2001-2007	Ph. D.	Buddhika Atulugama	Physics
2007-2007	Ph. D.	Zia Li	Physics
2007-2008	Ph. D.	Orcan Ogetbil	Physics
2008-2008	Ph. D.	Corina Barbu	Physics
2007-2010	Ph. D.	Shivakumar Jolad	Physics
2010-2013	Ph. D.	David Simpson	Physics
2011	Ph. D.	Joseph Ochoa	Physics
2015	Ph. D.	Karan Govil	Physics
2020	Ph. D.	Egon Sohn	Physics
2020-2021	Ph. D.	Pavlo Bulanchuk	Physics

Graduate Student Committees: Other Departments

1989-1991	Ph. D.	M. Walker	Astronomy
1991-1994	M. A.	G. Saulnier	Astronomy
1987-1989	Ph. D.	P. Stine	Astronomy
1990-1992	Ph. D.	A. Antunes	Astronomy
1994-1997	Ph. D.	J. Macmillan	Astronomy
1995-1998	– – –	H. Papathanassiou	Astronomy
2001-2005	Ph. D.	Michele Stark	Astronomy
2003-2007	Ph. D.	Lijun Gou	Astronomy
2005-	Ph. D.	Brendan Miller	Astronomy
1999-2002	Ph. D.	E. Cataloglu (**Co-Advisor**)	Education
2006	M. S.	Jacob Smith	Electrical Engineering
2009-2010	Ph. D.	Julio Benavides	Aerospace Engineering

Teaching Duties

Semester	Course	Credits	Enrollment
Fall 1986	PHYS 406 (Nuclear and Particle Physics)	3	25
Spring 1987	PHYS 201H (Introductory Physics/Mechanics)	4	15
Fall 1987	PHYS 410 (Quantum Mechanics)	3	32
Spring 1988	PHYS 221 (Introductory Physics/Mechanics)	4	38
Fall 1988	PHYS 222 (Introductory Physics/E&M)	4	41
	PHYS 406 (Nuclear and Particle Physics)	3	33
Spring 1989	PHYS 410 (Quantum Mechanics)	3	37
Fall 1989	PHYS 406 (Nuclear and Particle Physics)	3	28
Spring 1990	PHYS 410 (Quantum Mechanics)	3	20
Fall 1990	SSC Fellow	–	No teaching
Spring 1991	SSC Fellow	–	No teaching
Fall 1991	PHYS 201 (Introductory Physics/Mechanics) (2 recitation sections)	4	70
Spring 1992	PHYS 410 (Quantum Mechanics)	3	25
Fall 1992	PHYS 419 (Classical Mechanics)	3	25
Spring 1993	PHYS 410 (Quantum Mechanics)	3	25
Fall 1994	– – – – – – –	–	No teaching
Spring 1994	PHYS 201 (Introductory Physics/Mechanics) (course admin)	4	600
Fall 1994	On Sabbatical Leave	–	No teaching
Spring 1995	On Sabbatical Leave	–	No teaching
Fall 1995	PHYS 215 (Introductory Physics/Mechanics)	4	450
Spring 1996	PHYS 400 (Electricity and Magnetism)	3	15
Fall 1996	PHYS 215 (Introductory Physics/Mechanics)	4	450
Spring 1997	PHYS 202 (Introductory Physics/E&M)	4	540
	PHYS 297B (Freshman Seminar)	1	15
Fall 1997	PHYS 215 (Introductory Physics/Mechanics)	4	450
Spring 1998	PHYS 297A (Freshman Seminar)	1	18
Fall 1998	Administrative Duties (Asst. Dept. Head)	–	No teaching
Spring 1999	PHYS 215 (Introductory Physics/Mechanics)	4	300
	PHYS 187 (Freshman Seminar)	1	15
Fall 1999	Administrative Duties (Asst. Dept. Head)	–	No teaching
Spring 2000	PHYS 215 (Introductory Physics/Mechanics)	4	300
	PSU 016 (First Year Seminar)	1	20
	PHYS 496 (Independent Studies)	2	1

Semester	Course	Credits	Enrollment
Fall 2000	Administrative Duties (Asst. Dept. Head)	–	No teaching
Spring 2001	PHYS 215 (Introductory Physics/Mechanics)	4	250
	PSU 016 (First Year Seminar)	1	20
Fall 2001	Administrative Duties (Asst. Dept. Head)	–	No teaching
Spring 2002	Sabbatical Leave/Administrative Duties	–	No teaching
Fall 2002	Administrative Duties (Asst. Dept. Head)	–	No teaching
Spring 2003	Administrative Duties (Asst. Dept. Head)	–	No teaching
Fall 2003	Administrative Duties (Assoc. Dept. Head)	–	No teaching
Spring 2004	PSU 016 (First Year Seminar)	1	30
Fall 2004	Administrative Duties (Assoc. Dept. Head)	–	No teaching
Spring 2005	PSU 016 (First Year Seminar)	1	30
Fall 2005	Administrative Duties (Assoc. Dept. Head)	–	No teaching
Spring 2006	PSU 016 (First Year Seminar)	1	30
Fall 2006	Administrative Duties (Assoc. Dept. Head)	–	No teaching
Spring 2007	PSU 016 (First Year Seminar)	1	30
	PHYS 497C (Mathematica in Physics)	1	25
Fall 2007	PHYS 496 (Independent Study)	2	1
Spring 2008	PSU 016 (First Year Seminar)	1	30
	PHYS 297A ("Used math")	1	10
	PHYS 497B (Mathematica in Physics)	1	15
	PHYS 496H (Independent study)	1	1
Fall 2008	PHYS 296 (Independent study)	1	1
	PHYS 496 (Independent study)	1	1
Spring 2009	PSU 016 (First Year Seminar)	1	25
	PHYS 497B (Mathematica in Physics)	1	15
	PHYS 444 (Contemporary Topics in Physics)	2	45
Fall 2009	PSU 016 (First Year Seminar)	1	25
Spring 2010	PHYS 444 (Contemporary Topics in Physics)	2	33
	PHYS 590 (Graduate First Year Seminar)	1	20
Fall 2010	PSU 016 (First Year Seminar)	1	39
Spring 2011	PHYS 444 (Contemporary Topics in Physics)	2	56
Fall 2011	PSU 016 (First Year Seminar)	1	31
Spring 2012	PHYS 444 (Contemporary Topics in Physics)	2	61
	PHYS 496 (Independent study)	1	2
Fall 2012	PSU 016 (First Year Seminar)	1	25
	PHYS 296 (Independent study)	1	1
Spring 2013	PHYS 444 (Contemporary Topics in Physics)	2	55
Fall 2013	PSU 016 (First Year Seminar)	1	33
Spring 2014	PHYS 444 (Contemporary Topics in Physics)	2	58
Fall 2014	PSU 016 (First Year Seminar)	1	32
	PHYS 296 (Independent Study)	1	1
Spring 2015	PHYS 444 (Contemporary Topics in Physics)	2	44
Fall 2015	PSU 016 (First Year Seminar)	1	34
	PHYS 496 (Independent Study)	1	1

Semester	**Course**	**Credits**	**Enrollment**
Spring 2016	PHYS 444 (Contemporary Topics in Physics)	2	65
Fall 2016	PSU 016 (First Year Seminar)	1	33
Spring 2017	PHYS 444 (Contemporary Topics in Physics)	2	55
Fall 2017	PSU 016 (First Year Seminar)	1	28
Spring 2018	PHYS 444 (Contemporary Topics in Physics)	2	67
Fall 2018	PSU 016 (First Year Seminar)	1	37
Spring 2019	PHYS 444 (Contemporary Topics in Physics)	2	66
Fall 2019	PSU 016 (First Year Seminar)	1	28
Spring 2020	PHYS 444 (Contemporary Topics in Physics)	2	71
Fall 2020	PSU 016 (First Year Seminar)	1	50
Spring 2021	PHYS 444 (Contemporary Topics in Physics)	2	58
Fall 2021	PSU 016 (First Year Seminar)	1	32
Spring 2022	PHYS 444 (Contemporary Topics in Physics)	2	63
Spring 2022	PHYS 497 (Dimensional Analysis in Physics)	1	14
Fall 2022	Phased retirement	-	No teaching
Spring 2023	PHYS 444 (Contemporary Topics in Physics)	2	56

Undergraduate Advising Responsibilities

Year	Number of advisees
1986-1987	1 (Physics/Honors)
1987-1988	2 (Physics)
	2 (Physics/Honors)
	2 (Science)
1988-1989	4 (Physics)
	4 (Science)
1989-1990	8 (Physics)
	1 (Physics/Honors)
1991-1992	6 (Physics)
1992-1993	5 (Physics)
1993-1994	3 (Physics)
1994-1995	None (on sabbatical leave)
1995-1995	2 (Physics)
1996-1997	14 (Physics/Honors/double majors/minors)
1998-1999	24 (Physics/Honors/double majors/minors)
1999-2000	20 (Physics/Honors/double majors/minors)
2000-2001	20 (Physics/Honors/double majors/minors)
2001-2002	56 (Physics/Honors/double majors/minors)
2002-2003	83 (Physics/Honors/double majors/minors)
2003-2004	115 (Physics/Honors/double majors/minors)
2004-2005	140 (Physics/Honors/double majors/minors)
2005-2006	150 (Physics/Honors/double majors/minors)
2006-2007	150 (Physics/Honors/double majors/minors)
2007-2008	152 (Physics/Honors/double majors/minors)
2008-2009	153 (Physics/Honors/double majors/minors)
2009-2010	156 (Physics/Honors/double majors/minors)
2010-2011	161 (Physics/Honors/double majors/minors)
2011-2012	169 (Physics/Honors/double majors/minors)
2012-2013	175 (Physics/Honors/double majors/minors)
2013-2014	172 (Physics/Honors/double majors/minors)
2014-2015	171 (Physics/Honors/double majors/minors)
2015-2016	194 (Physics/Honors/double majors/minors)
2016-2017	185 (Physics/Honors/double majors/minors)
2017-2018	207 (Physics/Honors/double majors/minors)
2018-2019	203 (Physics/Honors/double majors/minors)
2019-2020	220 (Physics/Honors/double majors/minors)
2020-2021	239 (Physics/Honors/double majors/minors)
2021-2022	180 (Physics/Honors/double majors/minors)
2022-2023	135 (Physics/Honors/double majors/minors)

Service to the University

Physics Department:

Associate Department Head	2003-2023
Director of Graduate Studies	2003-2022
Introductory Course Committee (member)	2000-2023
Assistant Department Head	1998-2003
Director of Undergraduate Studies	1998-2023
Undergraduate Program Committee (chair)	1995-2023
Society of Physics Students (SPS) advisor	2002-2023
Physics Department COOP liaison	1998-2023
Departmental Evaluation Committee (ex officio member)	2001-2023
Departmental Undergraduate Program Assessment Committee (chair)	2012-2021
Department liaison to non-University Park PSU Physics faculty	2014-2023
Departmental P&T committee	2001-2002, 2008-2009
EPF Seminar organizer	1987-1990
Osmond Lab classroom renovation committee	1998-2000
Policy Committee	1987-1988
Awards Committee	1987-1988
Recruitment Committee	1988-1990
Graduate Admissions Committee	1989-1990
Teaching Committee (chair)	1991-1994
CES Promotion and Tenure Committee	1992-1993

Eberly College of Science (ECoS): Committees

Undergraduate Education Advisory Committee (UEAC, Advisory Committee to ECoS Dean)	1996-2023
ECoS Associate Dean (Undergraduate Students) search committee	2019
ECoS Scholarship Awarding Task Force	2019
Graduate Student Mentoring Task Force	2017
COOP Student of the Year Selection Committee	1999, 2001, 2003-2009, 2010-2014
ECoS Enrollment Planning Team	2000-2003, 2005-2006
ECoS Committee on Instructional and Research Faculty	2000-2002
ECoS *ad hoc* committee on fixed-term faculty awards	2002
ECoS advising search committee	2007, 2008, 2009
ECoS SRDP discussion group	2008-2009
ECoS Administrative Fellow (Dean's Office)	2010-2011

Eberly College of Science (ECoS): Administration

ECoS Interim Associate Dean	2011 (July-September)
ECoS Acting Associate Dean	2015 (March-May)

University:

Search committee for PSU Vice President and Dean for Undergraduate Studies	2020-2021
WorkLion Faculty Advisory Committee `http://www.worklion.psu.edu/`	2016-2018
Project LionPATH Governance Committee	2017-2021
General Education Assessment Committee	2017-2020
Joint Task Force on Faculty Misconduct Policy	2019
Search Committee for Schreyer Honors College Associate Dean	2016
Ad Hoc Task Force on ACUE Revisions to C-2 policy	2015
Ad Hoc Faculty Committee on Classroom Scheduling	2015
Faculty Senate Special Committee on LionPATH Implementation	2015-2016
Faculty Senate Special Committee on General Education Implementation	2015-2016
Faculty Advisory Committee (FAC) for the Schreyer Honors College	2001-2003, 2003-2006, 2018-2020, 2020-2022
Project LionPATH Steering Committee `http://projectlionpath.psu.edu`	2013-2017
General Education Task Force (Co-Chair Logistics subcommittee)	2013-2015
Middle States Accreditation Task Force (Educational Context and Offerings Subcommittee)	2013
Prior Learning Assessment Task Force	2013
Academic 'Holds' Task Force	2013-2014
Member - Special Committee on University Governance	2012-2013, Fall 2015

University Faculty Senate	1996-1998, 2010-2013, 2013-2017, 2018-2021, 2024- (Retired faculty)
Co-chair - Admissions, Records, Scheduling, and Student Aid	2010-2011, 2011-2012
Chair - Undergraduate Education Committee	2012-2013
Co-chair - Admissions, Records, Scheduling, and Student Aid	2013-2014
Chair - Admissions, Records, Scheduling, and Student Aid	2015
Member (Elected) - Faculty Rights and Responsibilities	2016-2017
Chair - Faculty Rights and Responsibilities	2017-2018
Member (Elected) - Faculty Rights and Responsibilities	2018-2019
Member - Faculty Benefits	2024-2025
Teaching and Learning Consortium (Faculty Team)	1999-2001
University Advising Council	2000-2004
Search Committee for Schreyer Honors College Assistant/Associate Dean	2002
AD-14 Review Committee for SHC Dean	2004
FELT (Fund for Excellence in Learning and and Teaching) Selection committee	2000
Placement Enterprise Committee	1999
Facilitator for Teaching Colloquy	2001
Application reader for Schreyer Honors College	2001, 2002, 2004-2006, 2008-2010
Undergraduate Fellowship Office (UFO) steering committee	2004-2006
Disciplinary Communities Implementation Team	2007-2008
Churchill Scholarship Selection Committee	2010
Goldwater/Astronaut Fellowship Selection Committee	2013-2023
Fulbright Fellowship interview committee	2016

Service to the Public

Journal Editorships

- Associate Editor of *American Journal of Physics*, 2000-2002.

Consulting

- Judge for the Pennsylvania Junior High Science & Humanities Symposium (2025).
- External reviewer - Program Review of Department of Physics, King Fahd University of Petroleum and Engineering (2017).
- Chair of external review committee for Physics Department of Sultan Qaboos University - Muscat, Oman (2016).
- Member of external review committee for Physics Department of California State University - Long Beach (2009).
- Member of APS-sponsored SPIN-UP team to Rutgers to assess undergraduate education (2001).
  - American Physical Society (APS) program to assess the status of physics undergraduate education and visit 'model' departments
  - Followup visit to George Washington University.
- Member of *The Governors Commission for College and Career Success – Science Benchmarks committee*
  - Committee charged by the Governor of the Commonwealth of Pennsylvania to develop rigorous science benchmark standards for graduating high school seniors in Chemistry, Physics, Life Sciences, and Technology.
- Consultant (paid) for the Louisiana Board of Regents (1999, 2002, 2005, 2008, 2011, 2014).
  - Member of multi-disciplinary panel to read and evaluate educational proposals for Louisiana colleges and universities and recommend funding from State of Louisiana supplementary funds budget (reporting to LA Board of Regents.)
- Consultant (paid) for McGraw-Hill textbook development project (2000-2004).
- Consultant (unpaid) for the TV program *The Weakest Link* (2001).

Volunteer activities

- State College Food Bank (2025-present)
- Centre County United Way (2025-present)