Curriculum Vita

Michael R. Dugger

(Prepared September 18, 2024)

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Research interests

Experimental nuclear and particle physics studying:

- Baryonic resonance structure, with a focus on N^*, Δ and Ξ states
- Mesonic resonances that decay K^*K, including searches for exotic hybrid mesons

Professional preparation

	Institution	Major/Conc.	Degree, Year
Undergraduate:	Northern Arizona State University	Physics/Mathematics	B.S., 1993
Graduate:	Arizona State University	Physics	Ph.D., 2001
Postdoctoral:	Arizona State University	Physics	2002-2006

Appointments

Associate Professor	Arizona State University	2017 to present
Associate Research Professor	Arizona State University	2013-2017
Assistant Research Professor	Arizona State University	2006-2013
Postdoctoral Research Associate	Arizona State University	2002-2006

Research grants

2022-2025: Department of Energy **grant renewal** for "Experimental Medium Energy Physics at Arizona State University" (PI: M. Dugger, 100%, award number DE-SC0020404, award amount: $506,000)

2019-2022: Department of Energy grant "Experimental Medium Energy Physics at Arizona State University" (PI: M. Dugger, 100%, award number DE-SC0020404, award amount: $450,000)

2013-2018: National Science Foundation grant "Meson Physics at Arizona State University" (PI: B.G. Ritchie 50%, Co-PI: M. Dugger 50%, award number PHY-1306737, award amount: $530,000)

2010-2013: National Science Foundation grant "Meson Physics at Arizona State University" (PI: B.G. Ritchie 50%, Co-PI: M. Dugger 50%, award number PHY-0969201, award amount: $510,000)

2007-2010: National Science Foundation grant "Meson Physics at Arizona State University" (PI: B.G. Ritchie 33%, Co-PI: E. Pasyuk 33%,Co-PI: M. Dugger 33%, award number PHY-0653630, award amount: $480,000)

Honors and Awards

2002: Mark Anderson Outstanding Doctoral Thesis Award

1993: Vesto Melvin Slipher Scholarship in the Sciences

1992: Northern Arizona University, Department of Physics Achievement Award

Scholar Metric

H-index from Web of Science = 48

Publications in refereed journals

1. C. W. Kim *et al.*, *Measurement of the helicity asymmetry E for the $\vec{\gamma}\vec{p} \to p\pi^0$ reaction in the resonance region: The CLAS Collaboration*, Eur. Phys. J. A **59** (2023) (9), p. 217

2. S. Adhikari *et al.*, *Measurement of spin-density matrix elements in $\rho(770)$ production with a linearly polarized photon beam at $E_\gamma = 8.2 - 8.8$ GeV*, Phys. Rev. C **108** (2023) (5), p. 055204

3. S. Adhikari *et al.*, *Measurement of the J/ψ photoproduction cross section over the full near-threshold kinematic region*, Phys. Rev. C **108** (2023) (2), p. 025201

4. I. I. Strakovsky, W. J. Briscoe, O. Cortes Becerra, M. Dugger, G. Goldstein, V. L. Kashevarov, A. Schmidt, P. Solazzo and B.-G. Yu, *Pseudoscalar and scalar meson photoproduction interpreted by Regge phenomenology*, Phys. Rev. C **107** (2023), p. 015203

5. S. Adhikari *et al.*, *Measurement of spin density matrix elements in $\Lambda(1520)$ photoproduction at 8.2–8.8 GeV*, Physical Review C **105** (2022) (3)

6. S. Diehl *et al.*, *Multidimensional, High Precision Measurements of Beam Single Spin Asymmetries in Semi-inclusive π^+ Electroproduction off Protons in the Valence Region*, Physical Review Letters **128** (2022) (6)

7. S. Adhikari *et al.*, *Search for photoproduction of axionlike particles at GlueX*, Physical Review D **105** (2022) (5)

8. N. Zachariou *et al.*, *Beam-spin asymmetry Σ for Σ- hyperon photoproduction off the neutron*, Physics Letters B **827** (2022), p. 136985

9. U. Shrestha *et al.*, *Differential cross sections for $\Lambda(1520)$ using photoproduction at CLAS*, Physical Review C **103** (2021) (2)

10. N. Zachariou *et al.*, *Double polarisation observable G for single pion photoproduction from the proton*, Physics Letters B **817** (2021), p. 136304

11. S. Adhikari *et al.*, *Measurement of beam asymmetry for $\pi^-\Delta^{++}$ photoproduction on the proton at $E_\gamma = 8.5$ GeV*, Physical Review C **103** (2021) (2)

12. T. Hayward *et al.*, *Observation of Beam Spin Asymmetries in the Process* $ep \to e\pi^+\pi^- X$ *with CLAS12*, Physical Review Letters **126** (2021) (15)

13. M. Carver *et al.*, *Photoproduction of the* $f_2(1270)$ *Meson Using the CLAS Detector*, Physical Review Letters **126** (2021) (8)

14. S. Adhikari *et al.*, *The GlueX beamline and detector*, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **987** (2021), p. 164807

15. T. Hu *et al.*, *Photoproduction of* η *mesons off the proton for* $1.2 < E_\gamma < 4.7$ *GeV using CLAS at Jefferson Laboratory*, Physical Review C **102** (2020) (6)

16. A. Celentano *et al.*, *First measurement of direct photoproduction of the* $a_2^0(1320)$ *meson on the proton*, Physical Review C **102** (2020) (3)

17. S. Adhikari *et al.*, *Measurement of the photon beam asymmetry in* $\vec{\gamma}p \to K^+\Sigma^0$ *at GeV*, Physical Review C **101** (2020) (6)

18. A. Schmidt *et al.*, *Probing the core of the strong nuclear interaction*, Nature **578** (2020) (7796), pp. 540–544

19. S. Adhikari *et al.*, *Beam asymmetry* Σ *for the photoproduction of* η *and* η' *mesons at* $E_\gamma = 8.8$ *GeV*, Physical Review C **100** (2019) (5)

20. A. Ali *et al.*, *First Measurement of Near-Threshold* J/Ψ *Exclusive Photoproduction off the Proton*, Physical Review Letters **123** (2019) (7)

21. P. Roy *et al.*, *First Measurements of the Double-Polarization Observables* F,P *and* H *in* ω *Photoproduction off Transversely Polarized Protons in the Resonance Region*, Physical Review Letters **122** (2019) (16)

22. E. Golovatch *et al.*, *First results on nucleon resonance photocouplings from the* $\gamma p \to \pi^+\pi^- p$ *reaction*, Physics Letters B **788** (2019), pp. 371–379

23. M. C. Kunkel *et al.*, *Exclusive photoproduction of* π^0 *up to large values of Mandelstam variables* s,t *and* u *with CLAS*, Physical Review C **98** (2018) (1)

24. J. Bono *et al.*, *First measurement of* Ξ^- *polarization in photoproduction*, Physics Letters B **783** (2018), pp. 280–286

25. P. Roy *et al.*, *Measurement of the beam asymmetry* Σ *and the target asymmetry* T *in the photoproduction of* ω *mesons off the proton using CLAS at Jefferson Laboratory*, Physical Review C **97** (2018) (5)

26. S. Lombardo *et al.*, *Photoproduction of* K^+K^- *meson pairs on the proton*, Physical Review D **98** (2018) (5)

27. A. Anisovich, V. Burkert, M. Dugger, E. Klempt, V. Nikonov, B. Ritchie, A. Sarantsev and U. Thoma, *Proton-η' interactions at threshold*, Physics Letters B **785** (2018), pp. 626–630,
URL: `https://doi.org/10.1016%2Fj.physletb.2018.06.034`

28. J. T. Goetz *et al.*, *Ξ^* photoproduction from threshold to $W = 3.3$ GeV*, Physical Review C **98** (2018) (6)

29. M. Dugger, B. Ritchie, N. Sparks, K. Moriya, R. Tucker, R. Lee, B. Thorpe, T. Hodges, F. Barbosa, N. Sandoval and R. Jones, *Design and construction of a high-energy photon polarimeter*, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **867** (2017), pp. 115–127

30. P. T. Mattione *et al.*, *Differential cross section measurements for $\gamma n \to \pi^- p$ above the first nucleon resonance region*, Physical Review C **96** (2017) (3)

31. A. Anisovich *et al.*, *Differential cross sections and polarization observables from CLAS K^* photoproduction and the search for new N^* states*, Physics Letters B **771** (2017), pp. 142–150

32. H. A. Ghoul *et al.*, *Measurement of the beam asymmetry Σ for π^0 and η photoproduction on the proton at $E_\gamma = 9$ GeV*, Physical Review C **95** (2017) (4)

33. Z. Akbar *et al.*, *Measurement of the helicity asymmetry E in $\omega \to \pi^+\pi^-\pi^0$ photoproduction*, Physical Review C **96** (2017) (6)

34. A. Anisovich, V. Burkert, P. Collins, M. Dugger, E. Klempt, V. Nikonov, B. Ritchie, A. Sarantsev and U. Thoma, *$N^* \to N\eta'$ decays from photoproduction of η'-mesons off protons*, Physics Letters B **772** (2017), pp. 247–252

35. P. Collins *et al.*, *Photon beam asymmetry Σ for η and η' photoproduction from the proton*, Physics Letters B **771** (2017), pp. 213–221

36. P. Collins *et al.*, *Photon beam asymmetry Σ in the reaction $\gamma p \to p\omega$ for E_γ= 1.152 to 1.876 GeV*, Physics Letters B **773** (2017), pp. 112–120

37. I. Senderovich *et al.*, *First measurement of the helicity asymmetry E in η photoproduction on the proton*, Physics Letters B **755** (2016), pp. 64–69

38. C. A. Paterson *et al.*, *Photoproduction of Λ and Σ^0 hyperons using linearly polarized photons*, Physical Review C **93** (2016) (6)

39. R. Dickson *et al.*, *Photoproduction of the $f_1(1285)$ meson*, Physical Review C **93** (2016) (6)

40. B. Dey *et al.*, *"Data analysis techniques, differential cross sections, and spin density matrix elements for the reaction $\gamma p \to \phi p$"*, Physical Review C **89** (2014) (5)

41. B. Dey *et al.*, *"Publisher's Note: Data analysis techniques, differential cross sections, and spin density matrix elements for the reaction $\gamma p \to \phi p$"*, Physical Review C **90** (2014) (1)

42. O. Hen *et al.*, *Momentum sharing in imbalanced Fermi systems*, Science **346** (2014) (6209), pp. 614–617

43. K. Moriya *et al.*, *Spin and parity measurement of the* $\Lambda(1405)$ *baryon*, Physical Review Letters **112** (2014) (8)

44. H. Seraydaryan *et al.*, *ϕ-meson photoproduction on hydrogen in the neutral decay mode*, Physical Review C **89** (2014) (5)

45. K. Moriya *et al.*, *Publisher's Note: Differential photoproduction cross sections of the* $\Sigma^0(1385)$*,* $\Lambda(1405)$*, and* $\Lambda(1520)$ *(vol 88, 045201 (2013)*, Physical Review C **88** (2013) (4)

46. K. Moriya *et al.*, *Differential photoproduction cross sections of the* $\Sigma^0(1385)$*,* $\Lambda(1405)$*, and* $\Lambda(1520)$, Physical Review C **88** (2013) (4)

47. M. Anghinolfi *et al.*, *Comment on "Observation of a narrow structure in* $^1H(\gamma, K^0_S)X$ *via interference with ϕ-meson production"*, Physical Review C **86** (2012) (6)

48. M. E. McCracken *et al.*, *Differential cross section and recoil polarization measurements for the reaction $\gamma p/rightarrow K^+\Sigma^0$ using CLAS at Jefferson Lab*, Physical Review C **81** (2010) (2)

49. S. A. Pereira *et al.*, *Differential cross section of $\gamma n \to K^+\Sigma^-$ on bound neutrons with incident photons from 1.1 to 3.6 GeV*, Physics Letters B **688** (2010) (4-5), pp. 289–293

50. Y. Ilieva *et al.*, *Evidence for a backward peak in the gammad $\to pi^0 d$ cross section near the η threshold*, The European Physical Journal A **43** (2010) (3), pp. 261–267

51. B. Dey *et al.*, *Differential cross sections and recoil polarizations for the reaction $\gamma p \to K^+\Lambda$ reaction using CLAS at Jefferson Lab*, Physical Review C **82** (2010) (2)

52. M. Williams *et al.*, *Differential cross sections and spin density matrix elements for the reaction $\gamma p \to p\omega$*, Physical Review C **80** (2009) (6)

53. M. Williams, *et al.*, *Differential cross sections for the reactions $\gamma p \to p\eta$ and $\gamma p \to p\eta'$*, Physical Review C **80** (2009) (4)

54. G. V. Fedotov, *et al.*, *Electroproduction of $p\pi^+\pi^-$ off protons at $0.2 < Q^2 < 0.6 GeV^2$ and $1.3 < W < 1.57$ GeV with the CLAS detector*, Physical Review C **79** (2009) (1)

55. M. Osipenko *et al.*, *Measurement of semi-inclusive π^+ electroproduction off the proton*, Physical Review D **80** (2009) (3)

56. Y. Prok *et al.*, *Moments of the spin structure functions g_1^p and g_1^d for $0.05 < Q^2 < 3.0$ GeV^2*, Physics Letters B **672** (2009) (1), pp. 12–16

57. M. Williams *et al.*, *Partial wave analysis of the reaction $\gamma p \to p\omega$ and the search for nucleon resonances*, Physical Review C **80** (2009) (6)

58. M. Nozar *et al.*, *Search for the Photoexcitation of Exotic Mesons in the System*, Physical Review Letters **102** (2009) (10)

59. S. A. Morrow *et al.*, *Exclusive ρ^0 electroproduction on the proton at CLAS*, The European Physical Journal A **39** (2008) (1), pp. 5–31

60. D. G. Ireland, *et al.*, *Bayesian Analysis of Pentaquark Signals from CLAS Data*, Physical Review Letters **100** (2008) (5)

61. K. Park, *et al.*, *Cross sections and beam asymmetries for $\vec{e}p \to en\pi^+$ in the nucleon resonance region for $1.7 \leq Q^2 \leq GeV^2$*, Physical Review C **77** (2008) (1)

62. J. P. Santoro, *et al.*, *Electroproduction of $\phi(1020)$ mesons at $1.4 \leq Q^2 \leq 3.8\ GeV^2$ measured with the CLAS spectrometer*, Physical Review C **78** (2008) (2)

63. A. S. Biselli, *et al.*, *First measurement of target and double spin asymmetries for $ep \to ep\pi^0$ in the nucleon resonance region above the $\Delta(1232)$*, Physical Review C **78** (2008) (4)

64. M. H. Wood, *et al.*, *Light vector mesons in the nuclear medium*, Physical Review C **78** (2008) (1)

65. P. E. Bosted, *et al.*, *Ratios of $^{15}N/^{12}C$ and $^4He/^{12}C$ inclusive electroproduction cross sections in the nucleon resonance region*, Physical Review C **78** (2008) (1)

66. L. Guo *et al.*, *Cascade production in the reactions $\gamma p \to K^+K^+(X)$ and $\gamma p \to K^+K^+\pi^-(X)$*, Physical Review C **76** (2007) (2)

67. I. Hleiqawi *et al.*, *Cross sections for the $\gamma p \to K^{*0}\Sigma^+$ reaction at $E_\gamma = 1.7 - 3.0\ GeV$*, Physical Review C **75** (2007) (4)

68. K. S. Egiyan *et al.*, *Experimental Study of Exclusive $^2H(e,e')n$ Reaction Mechanisms at High Q^2*, Physical Review Letters **98** (2007) (26)

69. R. K. Bradford *et al.*, *First measurement of beam-recoil observables C_x and C_z in hyperon photoproduction*, Physical Review C **75** (2007) (3)

70. T. Mibe *et al.*, *Measurement of coherent ϕ-meson photoproduction from the deuteron at low energies*, Physical Review C **76** (2007) (5)

71. H. Denizli *et al.*, *Q^2 dependence of the $S_{11}(1535)$ photocoupling and evidence for a P-wave resonance in η electroproduction*, Physical Review C **76** (2007) (1)

72. P. E. Bosted *et al.*, *Quark-hadron duality in spin structure functions g_1^p and g_1^d*, Physical Review C **75** (2007) (3)

73. R. Nasseripour *et al.*, *Search for Medium Modifications of the ρ Meson*, Physical Review Letters **99** (2007) (26)

74. P. Ambrozewicz *et al.*, *Separated structure functions for the exclusive electroproduction of $K^+\Lambda$ and $K^+\Sigma^0$ final states*, Physical Review C **75** (2007) (4)

75. M. Dugger *et al.*, *π^0 photoproduction on the proton for photon energies from 0.675 to 2.875 GeV*, Physical Review C **76** (2007) (2)

76. R. Bradford *et al.*, *Differential cross sections for $\gamma p \to K^+ Y$ for Λ and Σ^0 hyperons*, Physical Review C **73** (2006) (3)

77. S. Chen *et al.*, *Measurement of Deeply Virtual Compton Scattering with a Polarized-Proton Target*, Physical Review Letters **97** (2006) (7)

78. M. Ungaro *et al.*, *Measurement of the $N \to \Delta^+(1232)$ Transition at High-Momentum Transfer by π^0 Electroproduction*, Physical Review Letters **97** (2006) (11)

79. M. Osipenko *et al.*, *Measurement of the deuteron structure function F_2 in the resonance region and evaluation of its moments*, Physical Review C **73** (2006) (4)

80. K. Dharmawardane *et al.*, *Measurement of the x- and Q^2-dependence of the asymmetry A_1 on the nucleon*, Physics Letters B **641** (2006) (1), pp. 11–17

81. M. Battaglieri *et al.*, *Search for $\Theta^+(1540)$ Pentaquark in High-Statistics Measurement of $\gamma p \to \overline{K}^0 K^+ n$ at CLAS*, Physical Review Letters **96** (2006) (4)

82. V. Kubarovsky *et al.*, *Search for Θ^{++} Pentaquarks in the Exclusive Reaction $\gamma p \to K^+ K^- p$*, Physical Review Letters **97** (2006) (10)

83. B. McKinnon *et al.*, *Search for the Θ^+ Pentaquark in the Reaction $\gamma d \to p K^- K^+ n$*, Physical Review Letters **96** (2006) (21)

84. S. Niccolai *et al.*, *Search for the Θ^+ Pentaquark in the $\gamma d \to \Lambda n K^+$ Reaction Measured with the CLAS Spectrometer*, Physical Review Letters **97** (2006) (3)

85. R. D. Vita *et al.*, *Search for the Θ^+ Pentaquark in the Reactions $\gamma p \to \overline{K}^0 K^+ n$ and $\gamma p \to \overline{K}^0 K^0 p$*, Physical Review D **74** (2006) (3)

86. M. Dugger *et al.*, *Erratum: η Photoproduction on the Proton for Photon Energies from 1.527 to 2.227 GeV [Phys. Rev. Lett 96, 062001 (2006)]*, Physical Review Letters **96** (2006) (16)

87. S. Strauch *et al.*, *Beam-Helicity Asymmetries in Double-Charged-Pion Photoproduction on the Proton*, Physical Review Letters **95** (2005) (16)

88. L. Morand *et al.*, *Deeply virtual and exclusive electroproduction of ω-mesons*, The European Physical Journal A **24** (2005) (3), pp. 445–458

89. J. W. Price *et al.*, *Exclusive photoproduction of the cascade (Ξ) hyperons*, Physical Review C **71** (2005) (5)

90. C. Hadjidakis *et al.*, *Exclusive ρ^0 meson electroproduction from hydrogen at CLAS*, Physics Letters B **605** (2005) (3-4), pp. 256–264

91. K. Joo *et al.*, *Measurement of the polarized structure function $\sigma_{LT'}$ for pion electroproduction in the Roper-resonance region*, Physical Review C **72** (2005) (5)

92. S. Taylor *et al.*, *Radiative decays of the $\Sigma^0(1385)$ and Λ hyperons*, Physical Review C **71** (2005) (5)

93. S. Taylor *et al.*, *Erratum: Radiative decays of the $\Sigma^0(1385)$ and Λ hyperons, 054609 (2005)]*, Physical Review C **72** (2005) (3)

94. D. Protopopescu *et al.*, *Survey of $A_{LT'}$ asymmetries in semi-exclusive electron scattering on ^4He and ^12C*, Nuclear Physics A **748** (2005) (3-4), pp. 357–373

95. M. Mirazita *et al.*, *Complete angular distribution measurements of two-body deuteron photodisintegration between 0.5 and 3GeV*, Physical Review C **70** (2004) (1)

96. S. Niccolai *et al.*, *Complete measurement of hree-body photodisintegration of ^3He for photon energies between 0.35 and 1.55 GeV*, Physical Review C **70** (2004) (6)

97. J. W. C. McNabb *et al.*, *Hyperon photoproduction in the nucleon resonance region*, Physical Review C **69** (2004) (4)

98. H. Avakian *et al.*, *Measurement of beam-spin asymmetries for π^+ electroproduction above the baryon resonance region*, Physical Review D **69** (2004) (11)

99. K. Joo *et al.*, *Measurement of the polarized structure function $\sigma_{LT'}$ for $p\vec{e}\pi^+n$ in the $\Delta(1232)$ resonance region*, Physical Review C **70** (2004) (4)

100. V. Kubarovsky *et al.*, *Publisher's Note: Observation of an Exotic Baryon with $S = +1$ in photoproduction from the proton,(vol 92, art. no. 032001 (2004))]*, Physical Review Letters **92** (2004) (4)

101. A. V. Stavinsky *et al.*, *Proton Source Size Measurements in the $eA \to e'ppX$ Reaction*, Physical Review Letters **93** (2004) (19)

102. K. McCormick *et al.*, *Tensor polarization of ϕ meson photoproduced at high t*, Physical Review C **69** (2004) (3)

103. R. A. Niyazov *et al.*, *Publisher's Note: Two-Nucleon Momentum Distributions Measured in $^3He(e, e'pp)n$ [Phys. Rev. Lett. PRLTA00031-9007* **92***, 052303 (2004)]*, Physical Review Letters **92** (2004) (9)

104. R. A. Niyazov *et al.*, *Two-Nucleon Momentum Distributions Measured in $^3He(e, e'pp)n$*, Physical Review Letters **92** (2004) (5)

105. D. S. Carman *et al.*, *First Measurement of Transferred Polarization in the Exclusive $\vec{e}p \to e'K^+\vec{\Lambda}$ Reaction*, Physical Review Letters **90** (2003) (13)

106. M. Osipenko *et al.*, *Kinematically complete measurement of the proton structure function F_2 in the resonance region and evaluation of its moments*, Physical Review D **67** (2003) (9)

107. M. Ripani *et al.*, *Measurement of $ep \to e'p\pi^+\pi^-$ and Baryon Resonance Analysis*, Physical Review Letters **91** (2003) (2)

108. J. Yun *et al.*, *Measurement of inclusive spin structure functions of the deuteron*, Physical Review C **67** (2003) (5)

109. K. Joo *et al.*, *Measurement of the polarized structure function $\sigma_{LT'}$ for $p(e,e'p)\pi^0$ in the $\Delta(1232)$ resonance region*, Physical Review C **68** (2003) (3)

110. S. Stepanyan *et al.*, *Observation of an Exotic $S = +1$ Baryon in Exclusive Photoproduction from the Deuteron*, Physical Review Letters **91** (2003) (25)

111. M. Battaglieri *et al.*, *Photoproduction of the ω Meson on the Proton at Large Momentum Transfer*, Physical Review Letters **90** (2003) (2)

112. B. Mecking *et al.*, *The CEBAF large acceptance spectrometer (CLAS)*, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **503** (2003) (3), pp. 513–553

113. A. Biselli *et al.*, *$ep \to ep\pi^0$ reaction studied in the $\Delta(1232)$ mass region using polarization asymmetries*, Physical Review C **68** (2003) (3)

114. R. D. Vita *et al.*, *First Measurement of the Double Spin Asymmetry in $\vec{(}e)\vec{p} \to e'\pi^+\pi^-n$ in the Resonance Region*, Physical Review Letters **88** (2002) (8)

115. R. D. Vita *et al.*, *Erratum: First Measurement of the Double Spin Asymmetry in $\vec{(}e)\vec{p} \to e'\pi^+\pi^-n$ in the Resonance Region [Phys. Rev. Lett. 88, 082001 (2002)]*, Physical Review Letters **88** (2002) (18)

116. K. Joo *et al.*, *Q^2 dependence of quadrupole strength in the $\gamma^*p \to \Delta^+(1232) \to p\pi^0$ Transition*, Physical Review Letters **88** (2002) (12)

117. M. Dugger *et al.*, *Publisher's Note:η Photoproduction on the Proton for Photon Energies from 0.75 to 1.95 GeV,[Phys. Rev. Lett.* **89** *222002 (2002)]*, Physical Review Letters **89** (2002) (24)

118. M. Dugger *et al.*, *η Photoproduction on the Proton for Photon Energies from 0.75 to 1.95 GeV*, Physical Review Letters **89** (2002) (22)

119. S. P. Barrow *et al.*, *Electroproduction of the $\Lambda(1520)$ hyperon*, Physical Review C **64** (2001) (4)

120. M. Battaglieri *et al.*, *Photoproduction of the ρ^0 Meson on the Proton at Large Momentum Transfer*, Physical Review Letters **87** (2001) (17)

121. R. Thompson *et al.*, *The $ep \to e'p\eta$ reaction at and above the $S_{11}(1535)$ Baryon Resonance*, Physical Review Letters **86** (2001) (9), pp. 1702–1706

122. E. Anciant *et al.*, *Photoproduction of $\phi(1020)$ Mesons on the Proton at Large Momentum Transfer*, Physical Review Letters **85** (2000) (22), pp. 4682–4686

123. D. Sober *et al.*, *The bremsstrahlung tagged photon beam in Hall B at JLab*, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **440** (2000) (2), pp. 263–284

124. F. Boehm *et al.*, *The Palo Verde reactor neutrino experiment a test for long baseline neutrino oscillations*, Nuclear Physics B - Proceedings Supplements **70** (1999) (1-3), pp. 191–194

125. F. Boehm *et al.*, *The Palo Verde reactor neutrino oscillation experiment*, Nuclear Physics B - Proceedings Supplements **77** (1999) (1-3), pp. 166–170

126. F. Boehm *et al.*, *The Palo Verde reactor neutrino experiment A test for long baseline neutrino oscillations*, Progress in Particle and Nuclear Physics **40** (1998), pp. 253–262

Invited talks

During the span of my career, I have given over a hundred presentations within the CLAS and GlueX collaborations and over a dozen presentations at conferences. I list the invited talks below.

1. CLAS baryon spectroscopy programme, The 13th International Workshop on the Physics of Excited Nucleons, N^* 2022, Santa Margherita Ligure, Italy, October 18, 2022
2. Overview of Spectroscopy Results in Meson Photoproduction with Polarization Observables, XVI International Conference on Hadron Spectroscopy, HADRON 2015, Newport News, Virginia, September 14, 2015
3. Latest results from the CLAS N^* polarization program, American Physical Society, Denver, Colorado, April 16, 2013
4. First data from FROST, JLab Users Group Meeting, Jefferson Lab, Newport News, Virginia, June 8, 2011
5. Non-strange pseudoscalar photoproduction from the proton, Seminar at Idaho State University, Pocatello, ID, April 15, 2010
6. Σ for $\gamma p \to p\pi^0$, $n\pi^+$ and $p\eta$ from CLAS g8b run period with 0.95 GeV $< E_\gamma <$ 1.2 GeV, Narrow Nucleon Resonances Workshop, University of Edinburgh, Scotland, June 8, 2009
7. Pseudoscalar meson photoproduction with CLAS, George Washington University Nuclear Physics Seminar, Washington D.C., March 11, 2008

8. Photoproduction of η and η' Mesons from the Proton, The eleventh International Conference on Meson-Nucleon Physics and the Structure of the Nucleon,MENU 2007, Juelich, Germany, September 10, 2007
9. $S = 0$ pseudoscalar photoproduction from the proton, The fifth annual International Workshop on Physics of Excited Nucleons, N^* 2005, Tallahassee, Florida, October 14, 2005

Former Ph.D. students

Brandon Sumner, **Ph.D.** thesis defended on April 11, 2022, ASU

Title: Study of Excited Cascade Baryons and Preliminary Cross-Sections for $\Xi(1530)$ Using Data from the GlueX Experiment

Awards and Fellowship:

- NSF Postdoctoral Fellow (MPS Ascend), 2022-2025
- ASU Department of Physics Outstanding Graduate Student Award, May, 2022
- ASU College of Liberal Arts and Sciences Outstanding Graduate Student Award, May, 2022

Sebastian Cole, **Ph.D.** thesis defended on July 2, 2021, ASU

Title: Partial Wave Analysis of Meson Resonances That Decay $K^*\overline{K}$ Using Data from the GlueX Experiment

Award:

- ASU College of Integrative Sciences and Arts Outstanding Graduate Student Award, December, 2020

Additional mentoring

Sponsoring Scientist for Postdoctoral Fellow

- **Brandon Sumner**, NFS Postdoctoral Fellow (MPS Ascend), 2022-present

Adviser for Ph.D. students:

- **Alan Gardner** (August 2020-present)
  Project: Survey of mesons that decay to $K^+K^-\pi^0$ states in GlueX data
- **Katelyn Hernandez** (December 2022-present)
  Project: Survey of Ξ baryons in GlueX and CLAS12 data

Chair of Honors Thesis Committee:

- **Robert Lee** (2017-2018)
  Project: Extraction of H and P Observables for $\gamma p \to \pi^+ n$
  Awards during mentorship:
  - CLAS Dean's Medalist, May 2018
  - Barrett Honors College Senior Project Award in Physics, May 2018
  - Physics Department Outstanding Undergraduate Award, May 2018
  - John and Richard Jacob Award for Undergraduate Research Award, May 2018
- **Patrick Walker** (2020-2021)
  Project: Meson decay in $ep \to epK^+K^-$ and $ep \to epK^+K^-\pi^0$ events
  Award during mentorship:

  - ASU Department of Physics Undergraduate Research Award, spring 2021
- **Rebeca Osar** (2019-2023)
  Project: Search for excited N^* states that decay to $K\Lambda(1520)$
  Award during mentorship:
  - ASU Department of Physics Undergraduate Research Award, spring 2023

Primary mentor for the following undergraduates:

- **Shep Bryan** (2017-2018)
  Project: Simulation of CLAS12 detector
- **Eric Bryan** (2018)
  Project: Particle ID studies
- **Mohamed Mohamed** (2019-2020)
  Projects: Simulations studies of therapy beams, and Particle ID studies
  Award during mentorship:
  - College of Integrative Sciences and Arts Undergraduate Research Award, April 2020
- **Kevin Scheuer** (2019-2020)
  Project: Machine learning methods for $K\pi$ identification
- **Emily Lamagna** (2021)
  Project: Invariant mass of the $\phi\pi^0$ System
- **Anna Costelle** (2021)
  Project: Construction of Event Generators for Strangeness-Containing Final States
  Award during mentorship:
  - ASU Women in Physics Award for Undergraduate Research, April 2021
- **Joshua Grumski-Flores** (2021-2022)
  Project: Simulation of Pair Spectrometer
  Award during mentorship:
  - Department of Physics Research Award, April 2022
- **Shane Watters** (2021-2022)
  Project: Λ detection efficiency using the CLAS12 detector
- **Randy Montoya** (2022)
  Project: Simulation, and machine-learning diagnostics of brain cancer
- **Luis Dorantes** (2022-2024)
  Project: Simulation and tomography of CT-scan data
- **Joshua Russell** (2022-2024)
  Project: Using CLAS12 data to reconstruct ground-state Ξ baryon
- **Dylan Garrelts** (2024-2024)
  Project: Study of spinors and space-time

Teaching experience

2017-present: Arizona State University, Polytechnic Campus, Mesa, AZ

Additional context added for lecture courses taught since 2017.

PHY 112 - General Physics II

- Summer 2019 (first-time prep)

PHY 121 - University Physics I
- fall 2020 (first-time prep)

PHY 131 - University Physics II
- spring 2023 (first-time prep)

PHY 252 - University Physics III
- spring 2022 (first-time prep), 2023, 2024

PHY 321 - Vector Mechanics and Vibrations
- spring: 2018 (first-time prep), 2019, 2020, 2021
- fall: 2018, 2019, 2020, 2021, 2022

PHY 331 - Principles of Modern Electromagnetism
- fall 2017 (first-time prep), 2023, 2024
- spring: 2024

PHY 361 - Introductory Modern Physics
- fall: 2023 (first-time prep), 2024

PHY 394 - Basics of Medical Physics
- spring: 2020 (first-time prep)
- fall: 2022

PHY 456 - Lasers Optics
- spring 2021 (first-time prep)

PHY 493 - Honors Thesis
PHY 495 - Project Research
PHY 499 - Individualized Instruction

2016: Arizona State University, West Campus, Glendale, AZ
PHY 113 - University Physics Lab I

1994-2016: Arizona State University, Tempe Campus, Tempe, AZ
PHY 101 - Introduction to Physics
PHY 111 - Recitation for General Physics I
PHY 112 - Recitation for General Physics II
PHY 113 - General Physics Lab I
PHY 132 - University Physics Lab I
PHY 361 - Recitation for Introduction to Modern Physics
PHY 495 - Project Research
PHY 499 - Individualized Instruction

Service 2017-present

Profession
- Chaired the Nuclear Physics session of the 2020 American Physical Society Four Corners Meeting

- Member of the International Advisory Committee for the MENU (Meson Nucleon) 2019 Conference.
- Review Committee member of the MENU 2019 Conference.
- Review Committee member of the 2018 Division of Nuclear Physics, Conference Experience for Undergraduates.
- Reviewer for Physical Review Letters (2018).
- Reviewer for Physical Reviews C (2017,2020).

University

- Poly Science and Mathematics (PSM) Career-Track Personnel / Annual Review Committee (Co-chair) 2024-present
- Member of the Graduate College review committee for the 2022 ARCS (Achievement Rewards for College Scientists) Fellowship.
- Member of the Faculty Review Committee for the 2024 Graduate College Enrichment Fellowship.
- Member of the Graduate College review committee for the 2024 Completion Fellowship.
- PSM Lab Space Committee 2023-2024
- PSM Safety Committee 2021-2023
- Member of the Faculty Review Committee for the 2023 Graduate College Enrichment Fellowship.
- Member of the Graduate College review committee for the 2023 Completion Fellowship.
- Member of the Graduate College review committee for the 2022 ARCS Fellowship.
- Member of the Graduate College review committee for the 2020 Completion Fellowship.
- Member of the Graduate College review committee for the 2019 ARCS Fellowship.
- Member of the Graduate College review committee for the 2018 Completion Fellowship.