Michael F. Vineyard

Department of Physics and Astronomy
Union College
Schenectady, NY 12308
vineyarm@union.edu
www1.union.edu/~vineyarm

Personal

- Date of birth: 1/2/53
- Place of birth: Vineland, NJ
- Marital status: Married with two children

Education

- Ph.D., Physics, Florida State University, 1984
- M.S., Physics, Florida State University, 1981
- B.S., Physics, Stockton State College, 1978

Experience

- 2009-present - Chair of the Department of Physics and Astronomy, Union College
- 2002-present - Frank and Marie Louise Bailey Professor of Physics, Union College
- 2002-2008 - Chair of the Department of Physics and Astronomy, Union College
- 2000-2002 - The Robert Edward and Lena Frazer Loving Chair in Physics, University of Richmond
- 2000-2001 - Visiting Scientist, Thomas Jefferson National Accelerator Facility
- 1992-2002 - Associate Professor of Physics, University of Richmond
- 1993-1994 - Visiting Scientist, Continuous Electron Beam Accelerator Facility
- 1987 (Summer) - Visiting Scientist, Argonne National Laboratory
- 1986-1992 - Assistant Professor of Physics, University of Richmond
- 1984-1986 - Research Associate, Argonne National Laboratory

Research Activity

- 2008-present - Applications of nuclear physics to environmental problems

- 1988-2009 - Member of the CEBAF Large Acceptance Spectrometer (CLAS) Collaboration, spokesperson for E93-008, co-spokesperson for E94-017, and E12-07-104
- 1986-1994 - Member of the Argonne Tandem Linear Accelerator System (ATLAS) Users Group, spokesperson for ATLAS experiments 114 and 285

Professional Organizations and Societies

- American Physical Society
- American Association of Physics Teachers
- Sigma Pi Sigma

Honors

- 1997 - University of Richmond Distinguished Educator Award

Grants

- 2010 - MRI Program of the National Science Foundation ($270,000, with five other Union faculty members)
- 2008 - New York State Section of the American Physical Society Outreach Grant ($810)
- 2008 - Union College Mellon Sabbatical Award ($4,000)
- 2006-2009 - U. S. Department of Energy ($168,000)
- 2003-2006 - U. S. Department of Energy ($144,000)
- 2003 - Union College Internal Education Foundation ($3,000)
- 2002-2003 - U. S. Department of Energy ($75,000)
- 2001-2004 - MRI Program of the National Science Foundation ($175,000, with G. P. Gilfoyle)
- 2000-2001 - SURA Faculty Sabbatical Fellowship ($10,000)
- 2000-2001 - Jefferson Lab Sabbatical support ($28,000)
- 1999-2002 - U. S. Department of Energy ($222,000, with G. P. Gilfoyle)
- 1996-1999 - U. S. Department of Energy ($300,000, with G. P. Gilfoyle and R. W. Major)
- 1997 - University of Richmond Faculty Research Committee Travel Grant ($1,000)
- 1997 - University of Richmond Undergraduate Research Committee Keck Travel Grant ($2,000)
- 1993-1996 - U. S. Department of Energy ($286,000, with G. P. Gilfoyle and R. W. Major)

- 1995 - ILI Program of the National Science Foundation ($14,986, with G. P. Gilfoyle)
- 1994 - University of Richmond Research Grant ($3,500)
- 1992 - ILI Program of the National Science Foundation ($49,813, with G. P. Gilfoyle)
- 1990-1993 - U. S. Department of Energy ($284,000, with G. P. Gilfoyle and R. W. Major)
- 1988-1990 - U. S. Department of Energy ($63,000)
- 1990 - University of Richmond Faculty Research Committee Grant ($4,000)
- 1986 - University of Richmond Faculty Research Committee Grant ($1,495)

Journal Articles and Conference Proceedings (names of undergraduate co-authors are underlined)

1. Scott M. LaBrake, Michael F. Vineyard, Maria V. Battaglia, Katie J. Schuff, Colin L. Gleason, Charles I. Harrington, Shivani Pathak, Colin F. Turley, and Robert D. Moore, "Using PIXE to Teach Materials Analysis at Union College," to appear in the conference proceedings of 21st International Conference on the Applications of Accelerators in Research and Industry to be published in a special issue of Nuclear Intruments and Methods in Physics Research B.
2. X. Qian *et al.* (The CLAS Collaboration), "Near-threshold Photoproduction of ϕ Mesons from Deuterium," Phys. Lett. B **696**, 338 (2011).
3. H. Baghdasaryan *et al.* (The CLAS Collaboration), "Tensor Correlations Measured in ^{3}He(e,e´pp)n," Phys. Rev. Lett. **105**, 222501 (2010).
4. H. Avakian *et al.* (The CLAS Collaboration), "Measurement of Single- and Double-Spin Asymmetries in Deep Inelastic Pion Electroproduction with a Longitudinally Polarized Target," Phys. Rev. Lett. **105**, 262002 (2010).
5. M. H. Wood *et al.* (The CLAS Collaboration), "Absorption of the ω and ϕ Mesons in Nuclei," Phys. Rev. Lett. **105**, 112301 (2010).
6. B. Dey *et al.* (The CLAS Collaboration), "Differential cross sections and recoil polarizations for the reaction $\gamma\,\mathrm{p} \rightarrow \mathrm{K}^+\Sigma^0$," Phys. Rev. C **82**, 025202 (2010).
7. M. Osipenko *et al.* (The CLAS Collaboration), "Measurement of the Nucleon Structure Function F_2 in the Nuclear Medium and Evaluation of its Moments," Nucl. Phys. A **845**, 1 (2010).
8. S. Anefalos Pereira *et al.* (The CLAS Collaboration), "Differential cross section of $\gamma n \rightarrow K^+\Sigma^-$ on bound neutrons with incident photons from 1.1 to 3.6 GeV," Phys. Lett. B **688**, 289 (2010).
9. M.E. McCracken *et al.* (The CLAS Collaboration), "Differential cross section and recoil polarization measurements for the $\gamma p \rightarrow K^+\Lambda$ reaction using CLAS at Jefferson Lab," Phys. Rev. C **81**, 025201 (2010).

10. Y. Ilieva *et al.* (The CLAS Collaboration), "Evidence for a backward peak in the $\gamma + d \rightarrow \pi^0 + d$ cross section near the eta threshold," Europ. Phys. Journ. A **43**, 261 (2010).

11. M. Williams *et al.* (The CLAS Collaboration), "Partial wave analysis of the reaction $\gamma p \rightarrow p\omega$ and the search for nucleon resonances," Phys. Rev. C **80**, 065209 (2009).

12. M. Williams *et al.* (The CLAS Collaboration), "Differential cross sections and spin density matrix elements for the reaction $\gamma p \rightarrow p\omega$," Phys. Rev. C **80**, 065208 (2009).

13. I. G. Aznauryan *et al.* (The CLAS Collaboration), "Electroexcitation of nucleon resonances from CLAS data on single pion electroproduction," Phys. Rev. C **80**, 055203 (2009).

14. M. Williams *et al.* (The CLAS Collaboration), "Differential cross sections for the reactions $\gamma p \rightarrow p\eta$ and $\gamma p \rightarrow p\eta'$," Phys. Rev. C **80**, 045213 (2009).

15. M. Battaglieri *et al.* (The CLAS Collaboration), "Photoproduction of $\pi^+\pi^-$ meson pairs on the proton," Phys. Rev. D **80**, 072005 (2009).

16. R. Nasseripour *et al.* (The CLAS Collaboration), "Photodisintegration of ^{4}He into p+t," Phys. Rev. C **80**, 044603 (2009).

17. G. Gavalian *et al.* (The CLAS Collaboration), "Beam spin asymmetries in deeply virtual Compton scattering (DVCS) with CLAS at 4.8 GeV," Phys. Rev. C **80**, 035206 (2009).

18. X. Qian *et al.* (The CLAS Collaboration), "The extraction of $\phi - N$ total cross section from $d(\gamma, pK^+K^-)n$," Phys. Lett. B **680**, 417 (2009).

19. D. S. Carman *et al.* (The CLAS Collaboration), "Beam-Recoil Polarization Transfer in the Nucleon Resonance Region in the Exclusive $\vec{e}p \rightarrow e'K^+\vec{\Lambda}$ and $\vec{e}p \rightarrow e'K^+\vec{\Sigma}^0$ Reactions at CLAS," Phys. Rev. C **79**, 065205 (2009).

20. M. Osipenko *et al.* (The CLAS Collaboration), "Measurement of semi-inclusive π^+ electroproduction off the proton," Phys. Rev. D **80**, 032004 (2009).

21. W. Chen *et al.* (The CLAS Collaboration), "Measurement of the Differential Cross Section for the Reaction γn$\rightarrow\pi^-$p from Deuterium," Phys. Rev. Lett. **103**, 012301 (2009).

22. M. Dugger *et al.* (The CLAS Collaboration), "π^+ photoproduction on the proton for photon energies from 0.725 to 2.875 GeV," Phys. Rev. C **79**, 065206 (2009).

23. J. Lachniet *et al.* (The CLAS Collaboration), "Precise Measurement of the Neutron Magnetic Form Factor G_M^n in the Few-GeV^2 Region." Phys. Rev. Lett. **102**, 192001 (2009).

24. M. Nozar *et al.* (The CLAS Collaboration), "Search for the Photoexcitation of Exotic Mesons in the $\pi^+\pi^+\pi^-$ System," Phys. Rev. Lett. **102**, 102002 (2009).

25. M. Battaglieri *et al.* (The CLAS Collaboration), "Measurement of Direct $f_0(980)$ Photoproduction on the Proton," Phys. Rev. Lett. **102**, 102001 (2009).

26. Y. Prok *et al.* (The CLAS Collaboration), "Moments of the Spin Structure Functions $g^{p(1)}$ and $g^{d(1)}$ for $0.05 < Q^2 < 3.0$-GeV^2," Phys. Lett. B **672**, 12-16 (2009).

27. S. A. Morrow *et al.* (The CLAS Collaboration), "Exclusive ρ^0 electroproduction on the proton at CLAS," Eur. Phys. J. A **39**, 5 (2009).

28. G. V. Fedotov *et al.* (The CLAS Collaboration), "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," Phys. Rev. C **79**, 015204 (2009).

29. A. S. Biselli *et al.* (The CLAS Collaboration), "First measurement of target and double spin asymmetries for $\overrightarrow{e}\ \overrightarrow{p} \rightarrow ep\pi^0$ in the nucleon resonance region above the $\Delta(1232)$," Phys. Rev. C **78**, 045204 (2008).

30. I. G. Aznauryan *et al.* (The CLAS Collaboration), "Electroexcitation of the Roper resonance for $1.7<Q^2<4.5$ GeV^2 in $\overrightarrow{e}\ p\rightarrow en\pi^+$," Phys. Rev. C **78**, 045209 (2008).

31. J. P. Santoro *et al.* (The CLAS Collaboration), "Electroproduction of $\phi(1020)$ mesons at $1.4\leq Q^2\leq 3.8$ GeV^2 measured with the CLAS spectrometer," Phys. Rev. C **78**, 025210 (2008).

32. M. H. Wood *et al.* (The CLAS Collaboration), "Light vector mesons in the nuclear medium," Phys. Rev. C **78**, 015201 (2008).

33. P. E. Bosted *et al.* (The CLAS Collaboration), "Ratios of ^{15}N/^{12}C and ^{4}He/^{12}C inclusive electroproduction cross sections in the nucleon resonance region," Phys. Rev. C **78**, 015202 (2008).

34. R. Nasseripour *et al.* (The CLAS Collaboration), "Polarized structure function $\sigma_{LT'}$ for $^1H(\overrightarrow{e}$,e'$K^+)\Lambda$ in the nucleon resonance region," Phys. Rev. C **77**, 065208 (2008).

35. F.X. Girod *et al.* (The CLAS Collaboration), "Measurement of Deeply Virtual Compton Scattering Beam-Spin Asymmetries," Phys. Rev. Lett. **100**, 162002 (2008).

36. R. De Masi *et al.* (The CLAS Collaboration), "Measurement of $ep\rightarrow ep\pi^0$ beam spin asymmetries above the resonance region," Phys. Rev. C **77**, 042201(R) (2008).

37. D. G. Ireland *et al.* (The CLAS Collaboration), "A Bayesian analysis of pentaquark signals from CLAS data," Phys. Rev. Lett. **100**, 052001 (2008).

38. K. Park *et al.* (The CLAS Collaboration), "Cross Sections and Beam Asymmetries for $ep\rightarrow en\pi^+$ in the Nucleon Resonance Region of $1.7 < Q^2 < 4.5$ GeV^2," Phys. Rev. C. **77**, 015208 (2008).

39. R. Nasseripour *et al.* (The CLAS Collaboration), "Search for Medium Modifications of the rho meson," Phys. Rev. Lett. **99**, 262302 (2007).

40. T. Mibe *et al.* (The CLAS Collaboration), "Coherent Phi Meson Photoproduction from the Deuteron at Low Energies," Phys. Rev. C **76**, 052202 (2007).

41. M. Dugger *et al.* (The CLAS Collaboration), "π^0 photoproduction on the proton for photon energies from 0.675 to 2.875 GeV," Phys. Rev. C **76**, 025211 (2007).

42. H. Denizli *et al.* (The CLAS Collaboration), "Q^2 dependence of the $S_{11}(1535)$ photocoupling and evidence for a P-wave resonance in eta electroproduction," Phys. Rev. C **76**, 015204 (2007).

43. L. Guo *et al.* (The CLAS Collaboration), "Cascade production in the reactions $\gamma p \rightarrow K^+K^+(X)$ and $\gamma p \rightarrow K^+K^+\pi^-(X)$," Phys. Rev. C **76**, 025208 (2007).

44. I. Hleiqawi *et al.* (The CLAS Collaboration), "Cross sections for the $\gamma p \rightarrow K^{*0}\Sigma^+$ reaction at E_γ= 1.7-3.0 GeV," Phys. Rev. C **75**, 042201(R) (2007).

45. K.Sh. Egiyan *et al.* (The CLAS Collaboration), "Experimental Study of Exclusive $^2H(e,e'p)n$ Reaction Mechanisms at High Q," Phys. Rev. Lett. **98**, 262502 (2007).

46. R. Bradford *et al.* (The CLAS Collaboration), "First measurement of beam-recoil observables C_x and C_z in hyperon photoproduction," Phys. Rev. C **75**, 035205 (2007).

47. P. Ambrozewicz *et al.* (The CLAS Collaboration), "Separated structure functions for the exclusive electroproduction of $K^+\Lambda$ and $K^+\Sigma^0$ final states," Phys. Rev. C **75**, 045203 (2007).

48. P.E. Bosted *et al.* (The CLAS Collaboration), "Quark-hadron duality in spin structure functions g_1^p and g_1^n," Phys. Rev. C **75**, 035203 (2007).

49. R. De Vita *et al.* (The CLAS Collaboration), "Search for the Θ^+ pentaquark in the reactions $\gamma p \rightarrow \overline{K}^0 K^+ n$ and $\gamma p \rightarrow \overline{K}^0 K^0 p$," Phys. Rev. D **74**, 032001 (2006).

50. M. Ungaro *et al.* (The CLAS Collaboration), "Measurement of the $N \rightarrow \Delta^+(1232)$ Transition at High-Momentum Transfer by π^0 Electroproduction," Phys. Rev. Lett. **97**, 112003 (2006).

51. K.V. Dharmawardane *et al.* (The CLAS Collaboration), "Measurement of the x- and Q^2-Dependence of the Asymmetry A_1 on the Nucleon," Phys. Lett. B **641**, 11 (2006).

52. S. Chen *et al.* (The CLAS Collaboration), "Measurement of Deeply Virtual Compton Scattering with a Polarized-Proton Target," Phys. Rev. Lett. **97**, 072002 (2006).

53. V. Kubarovsky *et al.* (The CLAS Collaboration), "Search for Θ^{++} Pentaquarks in the Exclusive Reaction $\gamma p \rightarrow K^+K^-p$," Phys. Rev. Lett. **97**, 102001 (2006).

54. S. Niccolai *et al.* (The CLAS Collaboration), "Search for the Θ^+ Pentaquark in the $\gamma d \rightarrow \Lambda n K^+$ Reaction Measured with the CLAS Spectrometer," Phys. Rev. Lett. **97**, 032001 (2006).

55. B. McKinnon *et al.* (The CLAS Collaboration), "Search for the Θ^+Pentaquark in the Reaction $\gamma d \rightarrow pK^-K^+n$," Phys. Rev. Lett. **96**, 212001 (2006).

56. A. Klimenko *et al.* (The CLAS Collaboration), "Electron scattering from high-momentum neutrons in deuterium," Phys. Rev. C **73**, 035212 (2006).

57. H. Egiyan *et al.* (The CLAS Collaboration), "Single π^+ electroproduction on the proton in the first and second resonance regions at 0.25 $Gev^2 < Q^2 < 0.65$ GeV^2 using CLAS," Phys. Rev. C **73**, 025204 (2006).

58. M. Dugger *et al.* (The CLAS Collaboration), "$\eta\prime$ Photoproduction on the Proton for Photon Energies from 1.527 to 2.227 GeV," Phys. Rev. Lett. **96**, 062001 (2006).

59. R. Bradford *et al.* (The CLAS Collaboration), "Differential cross sections for $\gamma + p \rightarrow K^+ + Y$ for Λ and Σ^0 hyperons," Phys. Rev. C **73**, 035202 (2006).

60. M. Osipenko *et al.* (The CLAS Collaboration), "Measurement of the deuteron structure function F2 in the resonance region and evaluation of its moments," Phys. Rev. C **73**, 045205 (2006).

61. K. Egiyan *et al.* (The CLAS Collaboration), "Measurement of Two- and Three-Nucleon Short-Range Correlation Probabilities in Nuclei," Phys. Rev. Lett. **96**, 082501 (2006).

62. M. Battaglieri *et al.* (The CLAS Collaboration), "Search for $\theta^+(1540)$ Pentaquark in High-Statistics Measurement of $\gamma p \rightarrow \overline{K}^0 K^+ n$ at CLAS," Phys. Rev. Lett. **96**, 042001 (2006).

63. S. Strauch *et al.* (The CLAS Collaboration), "Beam-Helicity Asymmetries in Double-Charged-Pion Photoproduction on the Proton," Phys. Rev. Lett. **95**, 162003 (2005).

64. K. Joo *et al.* (The CLAS Collaboration), "Measurement of the polarized structure function $\sigma_{LT'}$ for pion electroproduction in the Roper-resonance region," Phys. Rev. C **72**, 058202 (2005).

65. L. Morand *et al.* (The CLAS Collaboration), "Deeply virtual and exclusive electroproduction of ω-mesons," Europ. Phys. J. A **24**, 445 (2005).

66. S. Taylor *et al.* (The CLAS Collaboration), "Radiative decays of the $\Sigma^0(1385)$ and $\Lambda(1520)$ hyperons," Phys. Rev. C **71**, 054609 (2005).

67. J. Price *et al.* (The CLAS Collaboration), "Exclusive photoproduction of the cascade (Ξ) hyperons," Phys. Rev. C **71**, 058201 (2005).

68. C. Hadjidakis *et al.* (The CLAS Collaboration), "Exclusive ρ^0 meson electroproduction from hydrogen at CLAS," Phys. Lett, B **605**, 256 (2005).

69. D. Protopopescu *et al.* (The CLAS Collaboration), "Survey of $A_{LT'}$ asymmetries in semi-exclusive electron scattering on ^{4}He and ^{12}C," Nucl. Phys. A 748, 357 (2005).

70. P. Rossi *et al.* (The CLAS Collaboration), "Onset of Asymptotic Scaling in Deuteron Photodisintegration," Phys. Rev. Lett. **94**, 012301 (2005).

71. A.V. Stavinsky *et al.* (The CLAS Collaboration), "Proton Source Size Measurements in the $eA \rightarrow e'ppX$ Reaction," Phys. Rev. Lett. **93**, 192301 (2004).

72. S. Niccolai *et al.* (The CLAS Collaboration), "Complete measurement of three-body photodisintegration of ^{3}He for photon energies between 0.35 and 1.55 GeV," Phys. Rev. **C70**, 064003 (2004).

73. K. Joo *et al.* (The CLAS Collaboration), "Measurement of the Polarized Structure Function $\sigma_{LT'}$ for p($\vec{e}$,e'π^+)n in the $\Delta(1232)$ resonance region," Phys. Rev. **C70**, 042201R (2004).

74. M. Mirazita *et al.* (The CLAS Collaboration), "Complete Angular Distribution Measurements of Two-Body Deuteron Photodisintegration between 0.5 and 3 GeV," Phys. Rev. **C70**, 014005 (2004).

75. P. Rossi *et al.* (The CLAS Collaboration), "Onset of asymptotic scaling in deuteron photodisintegration," Phys. Rev. Lett **94** 012301 (2004).

76. V. Kubarovsky *et al.* (The CLAS Collaboration), "Observation of an exotic baryon with S = +1 in photoproduction from the proton," Phys. Rev. Lett. **92**, 032001 (2004).

77. K. McCormick *et al.* (The CLAS Collaboration), "Tensor Polarization of the Phi Meson Photoproduced at High t," Phys. Rev. **C69**, 032203 (2004).

78. R. Niyazov *et al.* (The CLAS Collaboration), "Two-Nucleon Momentum Distributions Measured in ^{3}He(e,e'pp)n," Phys. Rev. Lett. **92**, 052303 (2004).

79. J. W. C. McNabb *et al.* (The CLAS Collaboration), "Hyperon Photoproduction in the Nucleon Resonance Region," Phys. Rev. **C69**, 042201(R) (2004) .

80. H. Avakian *et al.* (The CLAS Collaboration), "Measurement of Beam-Spin Asymmetries for $\overrightarrow{e}$p $\rightarrow$e$'\pi^+$X in the Deeply Inelastic Regime," Phys. Rev. D**69**, 112004 (2004).

81. S. Stepanyan *et al.* (The CLAS Collaboration), "Observation of an Exotic S = +1 Baryon in Exclusive Photoproduction from the Deuteron," Phys. Rev. Lett. **91**, 252001 (2003) .

82. R. Fatemi *et al.* (The CLAS Collaboration), "Measurement of the Spin Structure Functions in the Resonance Region for Q^2 from 0.15 to 1.6 GeV^2," Phys. Rev. Lett. **91**, 222002 (2003).

83. K. Joo *et al.* (The CLAS Collaboration), "Measurement of Polarized Structure Function $\sigma_{LT'}$ for p($\overrightarrow{e}$,e'p)π^0 from single π^0 electroproduction in the $\Delta(1232)$ resonance region," Phys. Rev. **C68**, Rapid Comm, 032201 (2003).

84. Biselli *et al.* (The CLAS Collaboration), "Study of the $\Delta(1232)$ using single and double polarization asymmetries," Phys. Rev. **C68**, 035202 (2003).

85. K. Sh. Egiyan *et al.* (The CLAS Collaboration), "Observation of Nuclear Scaling in the A(e,e') Reaction at $x_{Bjorken} > 1$," Phys. Rev. **C68**, 014313 (2003).

86. M. Ripani *et al.* (The CLAS Collaboration), "Measurement of ep $\rightarrow$ e'p$\pi^+\pi^-$ and baryon resonance analysis," Phys. Rev. Lett. **91**, 022002 (2003).

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88. D. Carman *et al.* (The CLAS Collaboration), "First Measurement of Transferred Polarization in the Exclusive $\overrightarrow{e}$p $\rightarrow$ e'K+$\overrightarrow{\Lambda}$ Reaction," Phys. Rev. Lett. **90**, 131804 (2003).

89. M. Osipenko *et al.* (The CLAS Collaboration), "A Complete Measurement of the F_2 Proton Structure Function in the Resonance Region and the Evaluation of the Moments," Phys. Rev. **D67**, 092001 (2003).

90. M. Battaglieri *et al.* (The CLAS Collaboration), "Photoproduction of the ω meson on the proton at large mementum transfer," Phys. Rev. Lett. **90**, 022002 (2003).

91. B. Mecking *et al.* (The CLAS Collaboration), "The CEBAF Large Acceptance Spectrometer," Nucl. Inst. and Meth. **503/3**, 513 (2003).

92. M. Dugger *et al.* (The CLAS Collaboration), "η photoproduction on the proton for photon energies from 0.75 to 1.95 GeV," Phys. Rev. Lett. **89**, 222002 (2002).

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94. K. Joo *et al.* (The CLAS Collaboration), "Q^2 Dependence of Quadrupole Strength in the γ^*p $\rightarrow \Delta^+(1232) \rightarrow$ pπ^0 transition," Phys. Rev. Lett. **88**, 122001 (2002).

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96. S. Barrow *et al.* (The CLAS Collaboration), "Electroproduction of the $\Lambda(1520)$ Hyperon," Phys. Rev. **C64**, 044601 (2001).

97. S. Stepanyan *et al.* (The CLAS Collaboration), "Observation of exclusive deeply virtual Compton scattering in polarized electron beam asymmetry measurements," Phys. Rev. Lett. **87**, 182002 (2001).

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99. R. Thompson *et al.* (The CLAS Collaboration), "The ep $\rightarrow$ e'pη reaction at and above the $S_{11}(1535)$ baryon resonance," Phys. Rev. Lett. **86**, 1702 (2001).

100. E. Anciant *et al.* (The CLAS Collaboration), "Photoproduction of $\phi(1020)$ Mesons on the Proton at Large Momentum Transfer", Phys. Rev. Lett. **85**, 4682 (2000).

101. M. D. Mestayer, B. Asavabiphop, F.J. Barbosa, D.S. Carman, S.B. Christo, G.E. Dodge, S.A. Dytman, G.P. Gilfoyle, K. Hicks, R. Hicks, C.E. Hyde-Wright, G. Jacobs, A. Klein, F. Klein, S.E. Kuhn, R.A. Magahiz, R.W. Major, B.A. Mecking, R.A. Miskimen, J.A. Mueller, B. Niczyporuk, J. O'Meara, L.M. Qin, B.A. Raue, R.A. Schumacher, D.J. Tedeschi, R.A. Thompson, W. Tuzel, M.F. Vineyard, L.B. Weinstein, G.R. Wilkin, and A. Yegneswaran, "The CLAS Drift Chamber System", Nucl. Instrum. and Meth. **A449**, 81 (2000).

102. T. Carroll, M. Vineyard, T. Auger, W. Brooks, S. Fabbro, A. Freyberger, V. Gyurjyan, M. Ito, B. Madre, Y. Patois, S. Philips, M. Swynghedauw, and J. Tang, "Status of the Control System for the CLAS Detector at Jefferson Lab". Conference proceedings of ICALEPCS '97 The International Conference on Accelerator and Large Experimental Physics Control Systems, Nov. 3 - 7, 1997, Beijing, China.

103. M. F. Vineyard, "Virtual Instrumentation Across the Undergraduate Physics Curriculum", Virtual Instrumentation in Education 1997, Conference Proceedings,173 (1997).

104. M. F. Vineyard, T. J. Carroll, and M. N. Lack, "Drift-Chamber Gas System Controls Development for the CEBAF Large Acceptance Spectrometer". Conference proceedings of ICALEPCS '95 The International Conference on Accelerator and Large Experimental Physics Control Systems, Oct. 29 - Nov. 3, 1995, Chicago, IL.

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108. M. F. Vineyard, "The CUR Speakers Bureau 1994-1995", Council on Undergraduate Research Quarterly, Vol. 15, Num. 1, 41 (1994).

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2. M. F. Vineyard, "Nucleon Structure Studies with Electromagnetic Probes," progress report, March 1, 2006 - February 28, 2007, Department of Energy, Washington, DC, DE-FG02-03ER41252, 5p (2007).

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G. P. Gilfoyle, P. D. Rubin, and M. F. Vineyard, "Investigative Physics", inquiry-based laboratory manual for general physics with calculus, two volumes, 408p (2000).

Invited Talks

1. M. F. Vineyard, "Ion-Beam Analysis of Environmental Materials," Department of Atmospheric and Environmental Sciences, SUNY Univsersity at Albany, AlBany, NY, November 30, 2009.

2. M. F. Vineyard, "Measurements of the Neutron Magnetic Form Factor with CLAS," International Workshop on Nucleon Form Factors at the Laboratori Nazionali di Frascati, Italy, October 12-14, 2005.

3. M. F. Vineyard, "Measurements of the Neutron Magnetic Form Factor with CLAS," Workshop on Nucleon Form Factors/Parity Violation, Athens, Greece, Oct. 6-7, 2003.

4. M. F. Vineyard, "The CLAS E5 Experiment - Measurements of the Neutron Magnetic Form Factor," Rennselaer Polytechnic Institute, Troy, NY, December 3, 2002.

5. M. F. Vineyard, "The Electromagnetic Structure of the Nucleon", Union College, Schenectady, NY, March 14, 2002.

6. M. F. Vineyard, "The Electromagnetic Structure of the Nucleon", Miami University, Oxford, OH, January 31, 2002.

7. M. F. Vineyard, "The Electromagnetic Structure of the Nucleon", John Carroll University, University Heights, OH, January 24, 2002.

8. M. F. Vineyard, "The Electromagnetic Structure of the Nucleon", Rochester Institute of Technology, Rochester, NY, December 6, 2001.

9. M. F. Vineyard, "Workshop Physics at the University of Richmond", Associated Colleges of the South Workshop on Computer-Based Physics Laboratories, Southwestern University, Georgetown, TX, June 21-24, 2000.

10. M. F. Vineyard, "η Production in Nuclei", JLab User Group Workshop on Heavy Meson Production, The Thomas Jefferson National Accelerator Facility, Newport News, VA, June 11, 1997.

11. M. F. Vineyard, "Nuclear Physics Research at the Continuous Electron Beam Accelerator Facility", keynote lecture at the Stevens Institute of Technology Scholars Banquet, Hoboken, NJ, April 15, 1996.

12. M. F. Vineyard, "Exploring the Magnetic Structure of the Neutron", University of Richmond Lunchtime Forum Series, March 3, 1995.

13. M. F. Vineyard, "Nuclear Physics Research at the Continuous Electron Beam Accelerator Facility", Virginia Military Institute, Lexington, VA, February 17,1994.

14. M. F. Vineyard, "Studies of Quasielastic and Fusion Processes in the $^{28}Si + ^{40}Ca$ Reaction", University of Richmond, May 5, 1986.

15. M. F. Vineyard, "Incomplete Momentum Transfer in ^{28}Si Induced Fusion Reactions", University of Rochester, spring of 1986.

16. M. F. Vineyard, "Development of a Large Solid-Angle Heavy-Ion Detection System", Florida State University, fall of 1985.

17. M. F. Vineyard, "A Study of Inelastic Scattering and Excitation of ^{6}Li", University of Minnesota, spring of 1983.

18. M. F. Vineyard, "A Study of Inelastic Scattering and Excitation of ^{6}Li", Argonne National Laboratory, spring of 1983.

19. M. F. Vineyard, "A Study of Inelastic Scattering and Excitation of ^{6}Li", Brookhaven National Laboratory, spring of 1983.

Abstracts (names of undergraduate co-authors are underlined)

1. Michael F. Vineyard and Scott M. LaBrake, "Rutherford Backscattering Experiment in the First-Year Seminar at Union College," contributed talk presented at the Winter Meeting of the American Association of Physics Teachers in Jacksonville, FL, January 8-12, 2011. Abstract published on page 41 of the program booklet and at http://www.aapt.org/Conferences/wm2011/.

2. Colin Gleason, Charles Harrington, Katie Schuff, Maria Battaglia, Robert Moore, Colin Turley, Michael Vineyard, and Scott LaBrake, "Particle-Induced X-Ray Emission of Atmospheric Aerosols," Bull. Am. Phys. Soc. **55** (14), 53 (2010). Poster also presented at the Annual Fall Meeting of the Division of Nuclear Physics of the American Physical Society in Santa Fe, NM, November 2-6, 2010.

3. Charles Harrington**,** Colin Gleason, Katie Schuff, Maria Battaglia, Robert Moore, Colin Turley, Scott LaBrake, and Michael Vineyard, "Ion-Beam Analysis of Airborne Pollution," Bull. Am. Phys. Soc. **55** (14), 55 (2010). Poster also presented at the Annual Fall Meeting of the Division of Nuclear Physics of the American Physical Society in Santa Fe, NM, November 2-6, 2010.

4. S.M. LaBrake, M.F. Vineyard, M.V. Battaglia, K.J. Schuff, C.L. Gleason, C.I. Harrington, S. Pathak, C.F. Turley, R.D. Moore, "Materials Analysis Using PIXE and a Pelletron Accelerator in Undergraduate Physics," invited talk given at the 21st International Conference on the Applications of Accelerators in Research and Industry, Fort Worth, Tx, August 8 - 13, 2010 (abstract #344 is published on page 128 of the abstract book).

5. M.V. Battaglia, S.M. LaBrake, M.F Vineyard, "Seasonal Variation and Trace Elemental Mapping of the Composition and Concentration of New York Rainwater Samples Using the Union College Pelletron Particle Accelerator and Proton Induced X-ray Emission Spectroscopy," poster presented at the 21st International Conference on the Applications of Accelerators in Research and Industry, Fort Worth, Tx, August 8 - 13, 2010 (abstract #98 is published on page 210 of the abstract book.)

6. M. F. Vineyard, S. M. LaBrake, S. Maleki, and C. R. Orzel, "The Upper-Level Laboratory at Union College," poster presented at the Summer Meeting of the American Association of Physics Teachers, Portland, OR, July 17-21, 2010 (abstract published on page 113 of the program booklet).

7. M. F. Vineyard, S. M. LaBrake, S. Maleki, and C. R. Orzel, "The Upper-Level Laboratory at Union College," poster presented at the Gordon Research Conference Physics Research & Education: Experimental Research and Labs in Physics Education, Mount Holyoke College, South Hadley, MA, June 6-11, 2010.

8. S. Pathak, S. M. LaBrake, and M. F. Vineyard, "PIXE Analysis of Crematoria Emissions," poster presentation at the Joint Meeting of the New York State Section and the New England Section of the American Physical Society at Union College, Schenectady, NY, April 23-24, 2010.

9. Colin Gleason, Chad Harrington, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Particle Induced X-Ray Emission Analysis of Atmospheric Aerosols Collected in Upstate New York," poster presentation at the Joint Meeting of the New York State Section and the New

England Section of the American Physical Society at Union College, Schenectady, NY, April 23-24, 2010.

10. Chad Harrington, Coin Gleason, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Elemental Concentrations as a Function of Particle Size for Aerosol Samples Collected in Upstate New York from PIXE," poster presentation at the Joint Meeting of the New York State Section and the New England Section of the American Physical Society at Union College, Schenectady, NY, April 23-24, 2010.

11. Colin Gleason, Chad Harrington, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Particle Induced X-Ray Emission Analysis of Atmospheric Aerosols Collected in Upstate New York," Bull. Am. Phys. Soc. 54 (10), 145 (2009). Poster also presented at the Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Waikoloa, Hawaii, October 13-17, 2009.

12. Chad Harrington, Coin Gleason, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Elemental Concentrations as a Function of Particle Size for Aerosol Samples Collected in Upstate New York from PIXE," Bull. Am. Phys. Soc. 54 (10), 147 (2009). Poster also presented at the Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Waikoloa, Hawaii, October 13-17, 2009.

13. Katie Schuff, Scott LaBrake, Michael Vineyard, Chad Harrington, Coin Gleason, "Elemental Composition and Concentration of Upstate New York Rainwater Samples Using the Union College Pelletron Particle Accelerator and Proton Induced X-ray Emission (PIXE) Spectroscopy," Bull. Am. Phys. Soc. 54 (10), 157 (2009). Poster also presented at the Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Waikoloa, Hawaii, October 13-17, 2009.

14. Gerard Gilfoyle, Jeffrey Lachniet, William Brooks, Brian Quinn, and Michael Vineyard, "Precise Measurement of the Neutron Magnetic Form Factor in the Few-GeV^2 Region," Bull. Am. Phys. Soc. 54 (10), 55 (2009). Paper presented at the Mini-Symposium on Electromagnetic Form Factors - from the Nucleon to Nuclei I, Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Waikoloa, Hawaii, October 13-17, 2009.

15. Richard Bonventre (Michael Vineyard), "Extraction of Yields for Neutral Meson Photoproduction from the Proton and ^{3}He with the CLAS Detector at Jefferson Lab," The National Conference on Undergraduate Research (NCUR22), Salisbury University, NC, April 10-12, 2008.

16. Christian Shultz, Elliot Imler, and Michael Vineyard, "Fiducial Volumes for Photons Detected in the Electromagnetic Calorimeters of the CLAS Detector at Jefferson Lab," Bull. Am. Phys. Soc. 52 (9), 65 (2007). Poster also presented at the Annual Meeting of the Division of Nuclear Physics of the American Physical Society in Newport News, VA, October 10-13, 2007.

17. Richard Bonventre, Christian Shultz, and Michael Vineyard, "Extraction of Yields for Neutral Meson Photoproduction from the Proton and ^{3}He with the CLAS Detector at Jefferson Lab," Bull. Am. Phys. Soc. 52 (9), 53 (2007). Poster also presented at the Annual Meeting

of the Division of Nuclear Physics of the American Physical Society in Newport News, VA, October 10-13, 2007.

18. Christian Shultz, Richard Bonventre, Elliot Imler, and Michael Vineyard, "Momentum Corrections for Jefferson Lab CLAS G1c and G3a Data Sets," XXVI Annual Rochester Symposium for Physics Students, SPS Zone 2 Regional Meeting, University of Rochester, Rochester, NY, April 21, 2007.

19. Richard Bonventre, Elliot Imler, Christian Shultz, and Michael Vineyard, "Fiducial Cuts for the Jefferson Lab CLAS G3 Data Set," XXVI Annual Rochester Symposium for Physics Students, SPS Zone 2 Regional Meeting, University of Rochester, Rochester, NY, April 21, 2007.

20. Chrisitan Shultz, Richard Bonventre, Elliot Imler, and Michael Vineyard, "Momentum Corrections for Charged Particles Photoproduced on Hydrogen and Helium Targets in CLAS," Bull. Am. Phys. Soc. 51 (6), 62 (2006). Poster also presented at the Annual Meeting of the Division of Nuclear Physics of the American Physical Society in Nashville, TN, October 25-28, 2006.

21. Elliot Imler, Richard Bonventre, Christian Shultz, and Michael Vineyard, "Fiducial Cuts for the CLAS G3 Data Set," Bull. Am. Phys. Soc. 51 (6), 55 (2006). Poster also presented at the Annual Meeting of the Division of Nuclear Physics of the American Physical Society in Nashville, TN, October 25-28, 2006.

22. Fatima Mahmood (Michael Vineyard), "Neutral Meson Analysis of Photoproduction from the Proton," The National Conference on Undergraduate Research, UNC Asheville, NC, April 6-8, 2006.

23. Justin King (Michael Vineyard), "Development of a Mossbauer Spectrometer," The National Conference on Undergraduate Research, UNC Asheville, NC, April 6-8, 2006.

24. Fatima Mahmood and Michael Vineyard, "Comparison between Simulations and Data for Neutral Meson Photoproduction on the Proton," poster presented at the Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Maui, HI, September 18-22, 2005.

25. Justin King and Michael Vineyard, "Development of a Mossbauer Spectrometer," poster presented at the Joint Meeting of the Nuclear Physics Divisions of the American and Japanese Physical Societies in Maui, HI, September 18-22, 2005.

26. F. Mahmood and M. F. Vineyard, "Neutral Meson Analysis of Photoproduction from the Proton," poster presented at Physics of the Microworld: From Quarks to Nanostructures, The New York State Section of the American Physical Society, The New York City College of Technology, New York, NY, October 15-16, 2004. Fatima won a $100 award for best undergraduate poster.

27. F. Mahmood (M. F. Vineyard), "Neutral Meson Analysis of Photoproduction on the Proton," The National Conference on Undergraduate Research, Indianapolis, IN, April 15-17, 2004.

28. J. Reed (M. F. Vineyard), "Neutral Meson Photoproduction from the Proton," The National Conference on Undergraduate Research, Indianapolis, IN, April 15-17, 2004.

29. A.P. Hearin, J.K. Gardner, M.F. Vineyard, and The CLAS Collaboration, "Detection of the η Meson with the CLAS Detector at Jefferson Lab", Bull. Am. Phys. Soc. **46**(7), 101 (2001).

30. F. Chinchilla, M.F. Vineyard, J. Lachniet, V. Sapunenko, and The CLAS Collaboration, "Development and Testing of Calibration Software for the CLAS Large Angle Calorimeter", Bull. Am. Phys. Soc. **46**(7), 99 (2001).

31. F. Chinchilla, M.S. Fetea, G.P. Gilfoyle, and M.F. Vineyard, "From Quarks to Nucleons", *14th Summer School on Understanding the Structure of Hadrons*, Prague, Czech Republic, July 9-13, 2001.

32. M. F. Vineyard, G. P. Gilfoyle, and P. D. Rubin, "Laboratory-Based Introductory Physics at the University of Richmond", talk presented at the *Spring 2001 Meeting of the Chesapeake Section of the American Association of Physics Teachers*, Loyola College, Baltimore, MD, April 20-21, 2001. Abstract published on the web at: www.physics.udel.edu /csaapt/Spring2001/abstracts.html (Won the Frank Haig Prize for best paper from a four year college.)

33. F. Chinchilla, M. F. Vineyard, and G. P. Gilfoyle, "Development and Maintenance of a Linux Computing Cluster", Bull. Am. Phys. Soc. **45**(5), 19 (2000).

34. J. K. Gardner, T. J. Carroll, and M. F. Vineyard, "Simulations for an Eta Photoproduction Experiment at Jefferson Lab", Conference Experience for Undergraduates, The 1999 Fall Meeting of the American Physical Society, Asilomar Conference Center, Pacific Grove, California, October 20-23, 1999.

35. T. Carroll, M. Vineyard, T. Auger, W. Brooks, S. Fabbro, A. Freyberger, V. Gyurjyan, M. Ito, B. Madre, Y. Patois, S. Philips, M. Swynghedauw, and J. Tang, "Status of the Control System for the CLAS Detector at Jefferson Lab". ICALEPCS '97 The International Conference on Accelerator and Large Experimental Physics Control Systems, Nov. 3 - 7, 1997, Beijing, China, Conference Programme and Abstracts, page 242.

36. T. Carroll, M. Lack, and M. Vineyard, "Drift-Chamber Gas System Controls Development for the CEBAF Large Acceptance Spectrometer", Bull. Am. Phys. Soc. **42**, 1037 (1997).

37. W. K. Brooks and M. F. Vineyard, "Measurements of the Neutron Magnetic Form Factor with the CLAS", PANIC96 Abstracts, XIV International Conference on Particles and Nuclei, Williamsburg, VA, 22-28 May, 1996, page 12.

38. M. F. Vineyard, T. J. Carroll, and M. N. Lack, "Drift-Chamber Gas System Controls Development for the CEBAF Large Acceptance Spectrometer", ICALEPCS '95 The International Conference on Accelerator and Large Experimental Physics Control Systems, Oct. 29 - Nov. 3, 1995, Chicago, IL, Conference Programme and Abstracts, W-PO-37.

39. M. F. Vineyard and B. M. McKeever, "Photoproduction of $\eta\prime$ Mesons in Nuclei", Fifth National Conference of the Council on Undergraduate Research, Bates College, Lewiston, Maine, June 21-25, 1994.

40. R. G. Ohl, M. F. Vineyard, S. E. Atencio, C. Cardounel, G. P. Gilfoyle, A. S. Snyder, B. G. Glagola, D. J. Henderson, J. F. Mateja, A. W. Wuosmaa, and F. W. Prosser, "Incomplete Fusion in ^{28}Si and ^{24}Mg Nuclei", Conference Program and Abstracts of the Eighth National Conference on Undergraduate Research, Western Michigan University, April 14-16, 1994, VIII 181.

41. B. M. McKeever and M. F. Vineyard, "A Study of the Feasibility of an $\eta\prime$ Photoproduction Experiment", Conference Program and Abstracts of the Eighth National Conference on Undergraduate Research, Western Michigan University, April 14-16, 1994, VIII-177.

42. J. Rollinson, M. F. Vineyard, S. E. Atencio, J. F. Crum, G. P. Gilfoyle, R. G. Ohl, R. S. Trotter, D. G. Kovar, B. G. Glagola, D. J. Henderson, J. F. Mateja, C. F. Maguire, and F. W. Prosser, "Light Particles Produced in Central Collisions Between ^{40}Ca and ^{12}C Nuclei", Proceedings of the Sixth National Conference on Undergraduate Research, University of Minnesota, March 26 28, 1992.

43. M. F. Vineyard, "Computer-Based Physics Laboratory at the University of Richmond", Elements of Research: Increasing Student Engagement in the Entry Level Science Course", Union College, Schenectady, NY, December 5-7, 1991.

44. M. F. Vineyard, S. E. Atencio, G. P. Gilfoyle, R. G. Ohl, J. Rollinson, R. S. Trotter, D. G. Kovar, B. G. Glagola, D. J. Henderson, J. F. Mateja, C. F. Maguire, R. Clark, D. Olive, and F. W. Prosser, "Proton and α-Particle Correlations with Evaporation Residues in the ^{40}Ca + ^{12}C Reaction at E(^{40}Ca) = 450 MeV", Bull. Am. Phys. Soc. **36**, 1270 (1991).

45. J. D. Hewitt, F. W. Hersman, M. Mestayer, S. Christo, C. Cuevas, B. Kross, D. Tilles, S. Zhou, W. Vulcan, R. A. Miskimen, K. Wang, R. Hicks, K. Lee, S. Churchwell, M. F. Vineyard, G. P. Gilfoyle, S. A. Dytman, C. Tam, and H. Baghaei, "Helium Dominated Argon:Ethane Gas Mixtures for Drift Chambers in High Magnetic Fields", presented at the Fall 1990 Meeting of the New England Section of the American Physical Society, 19-20 October 1990.

46. M. F. Vineyard, C. H. Gosdin, R. S. Trotter, D. G. Kovar, C. Beck, D. J. Henderson, R. V. F. Janssens, J. F. Mateja, B. D. Wilkins, G. S. F. Stephans, C. F. Maguire, and F. W. Prosser, "Complete and Incomplete Fusion in ^{28}Si + ^{40}Ca at E_{lab} (^{28}Si) = 309, 397, and 452 MeV", Bull. Am. Phys. Soc. **34**, 1221 (1989).

47. C. Beck, D. G. Kovar, S. J. Sanders, B. D. Wilkins, D. J. Henderson, R. V. F. Janssens, W. C. Ma, M. F. Vineyard, T. F. Wang, C. F. Maguire, F. W. Prosser, and G. Rosner, "Incomplete Fusion Mechanisms in the ^{16}O + ^{40}Ca Reaction at E_{lab} = 13.4 MeV/nucleon", 5th International Conference on Nuclear Reaction Mechanisms, Varenna, Italy, June 13 - 18, 1988.

48. M. F. Vineyard, J. S. Bauer, D. G. Kovar, C. Beck, D. J. Henderson, R. V. F. Janssens, J. F. Mateja, B. D. Wilkins, G. S. F. Stephans, C. F. Maguire, and F. W. Prosser, "Complete and Incomplete Fusion in ^{28}Si + ^{28}Si at E_{lab} = 309, 397, 452 MeV", Bull. Am. Phys. Soc. **33**, 928 (1988).

49. J. F. Mateja, M. F. Vineyard, D. G. Kovar, C. Beck, D. J. Henderson, R. V. F. Janssens, B. D. Wilkins, G. S. F. Stephans, C. F. Maguire, and F. W. Prosser, "Measurements of Evaporation

Residue Cross Sections for the ^{28}Si + ^{12}C Reaction at E_{lab}(^{28}Si) = 309, 397, and 452 MeV", Bull. Am. Phys. Soc. **33**, 928 (1988).

50. P. A. DeYoung, C. Gelderloos, D. Kortering, J. Sarafa, K. Zienert, R. L. McGrath, J. M. Alexander, G. Gilfoyle, M. Gordon, D. Kovar, C. Beck, and M. Vineyard, "Light Particle - Light Particle Correlations from ^{16}O + ^{27}Al reactions below 15 MeV/u", Bull. Am. Phys. Soc. **33**, 928 (1988).

51. G. P. Gilfoyle, J. M. Alexander, M. S. Gordon, G. Auger, R. L. McGrath, D. G. Kovar, M. F. Vineyard, C. Beck, and P. A. DeYoung, "Simulations of ^{16}O-induced reactions on ^{27}Al at 215 MeV", Bull. Am. Phys. Soc. **33**, 978 (1988).

52. J. F. Mateja, M. F. Vineyard, D. G. Kovar, C. Beck, D. J. Henderson, R. V. F. Janssens, B. D. Wilkins, F. W. Prosser, C. F. Maguire, and G. S. F. Stephans,‘"Energy Dependence of Complete and Incomplete Fusion In the ^{28}Si + ^{12}C Reaction", Fifth Nuclear Dynamics Workshop, Sun Valley, Idaho, February, 1988.

53. M. Gordon, G. P. Gilfoyle, X. Lu, D. M. de Castro Rizzo, G. Auger, S. Kox, L. C. Vaz, J. M. Alexander, R. L. McGrath, P. A. DeYoung, C. J. Gelderloos, D. Kortering, J. Sarafa, D. G. Kovar, M. F. Vineyard, and C. Beck, "Small Angle Correlations in Low Energy Heavy Ion Reactions: Emission Timescales", *Symposium on the Interface Between Nuclear Structure and Reactions*, Los Angeles, CA, Feb. 25-30, 1988 (Am. Chem. Soc., Washington, DC) p. 11-12 (CONF-8809241); Abstracts of Papers of The American Chemical Society, Vol. 196 (1988).

54. J. D. Hinnefeld, J. J. Kolata, D. G. Kovar, C. Beck, M. F. Vineyard, D. Henderson, R. V. F. Janssens, K. T. Lesko, S. J. Sanders, and G. S. F. Stephans, "Strongly damped binary reactions of ^{28}Si + ^{28}Si at 9 MeV/nucleon", *Spring meeting of the Fachausschuss Kern- und Mittelenergiephysik of the Deutsche Physikalische Gesellschaft e. V.*, Berlin, F. R. Germany, Mar. 21, 1988 (Verh. Dtsch. Phys. Ges., 1988) Vol. 23, p. 6.

55. D. G. Kovar, C. Beck, M. F. Vineyard, R. V. F. Janssens, S. J. Sanders, G. S. F. Stephans, B. D. Wilkins, D. J. Henderson, J. D. Hinnefeld, J. J. Kolata, C. F. Maguire, F. W. Prosser, and G. Rosner, "Energy Dependence of Complete and Incomplete Fusion for Mass 56 Entrance Channel Systems at $E_{lab} \geq$ 10 MeV/Nucleon", Texas A & M Conference, Texas A & M University, December, 1987.

56. R. L. Stern, F. D. Becchetti, T. Casey, J. W. Janecke, P. M. Lister, W. Z. Liu, D. G. Kovar, R. V. F. Janssens, M. F. Vineyard, R. W. Phillips, and J. J. Kolata, "Tests of a Large Air-Core Superconducting Solenoid as a Nuclear-Reaction-Product Spectrometer", 5th International Conference on Nuclei Far From Stability, Rosseau Lake, Ontario, September, 1987.

57. C. Beck, D. G. Kovar, D. J. Henderson, R. V. F. Janssens, W. C. Ma, S. J. Sanders, M. F. Vineyard, T. F. Wang, B. D. Wilkins, T. Moog, C. F. Maguire, F. W. Prosser, and G. Rosner, "Reaction Mechanisms for ^{16}O + ^{40}Ca at E_{lab} = 13.4 MeV/Nucleon", Bull. Am. Phys. Soc. **32**, 1078 (1987).

58. G. P. Gilfoyle, M. S. Gordon, G. Auger, J. M. Alexander, R.L. McGrath, P. A. DeYoung, D. G. Kovar, M. Vineyard, and C. Beck, "Velocity Spectra of ^{16}O-induced reactions on ^{27}Al at

215 MeV", presented in a poster session at the 1987 annual spring meeting of The American Physical Society (1987).

59. C. F. Maguire, C. N. Davids, D. G. Kovar, C. Beck, M. F. Vineyard, F. W. Prosser, S. V. Reinart, J. J. Kolata, and K. W. Kwaitkowski, "Advances in Light Charged-Particle Detection Using NaI Pulse Shape Discrimination", Abstracts of Papers of The American Chemical Society, Vol. 193 (1987).

60. K. E. Rehm, C. Beck, D. G. Kovar, F. Videbaek, M. F. Vineyard, and T. F. Wang, "Transfer process in the system ^{80}Se + ^{208}Pb", Bull. Am. Phys. Soc. **31**, 1227 (1986).

61. G. P. Gilfoyle, M. S. Gordon, J. M. Alexander, R. L. McGrath, P. A. DeYoung, D. G. Kovar, M. Vineyard, and C. Beck, "^{16}O-induced reactions on ^{27}Al at 215 MeV", Bull. Am. Phys. Soc. **31**, 1206 (1986).

62. P. A. DeYoung, D. Bui, D. Kortering, K. Kossen, R. L. McGrath, J. M. Alexander, J. Gilfoyle, M. Gordon, D. G. Kovar, C. Beck, and M. Vineyard, "Light Particle Emission from the ^{16}O + ^{27}Al System at 13.5 MeV/u", Bull. Am. Phys. Soc. **31**, 1206 (1986).

63. P. Shulman, F. Becchetti, J. Janecke, R. Stern, D. Kovar, C. Davids, M. Vineyard, C. Beck, and C. Maguire, "Production of Very High Energy Particles in Heavy-Ion Collisions at θ = 0°", Bull. Am. Phys. Soc. **31**, 840 (1986).

64. R. Stern, F. Becchetti, J. Janecke, P. Lister, W. Phillips, D. Kovar, M. Vineyard, and J. Kolata, "Superconducting Solenoid Spectrometer; Design, Development, Construction, Testing and Early Results", Bull. Am. Phys. Soc. **31**, 819 (1986).

65. F. L. H. Wolfs, K. E. Rehm, W. Phillips, F. Videbaek, M. F. Vineyard, and J. L. Yntema, “Elastic, Quasielastic and Deep Inelastic Scattering for ^{58}Ni + ^{208}Pb at 550 MeV”, Bull. Am. Phys. Soc. **31**, 839 (1986).

66. P. L. Gonthier, R. Ramaker, R. Kryger, D. Mogridge, M. Kort, K. Price, D. Kovar, M. Vineyard, G. Stephans, B. Wilkins, and A. Van den Berg, "Proximity Effects in the Alpha Emission from Deep-Inelastic Collisions of 280 MeV ^{32}S with ^{58}Ni", Bull. Am. Phys. Soc. **30**, 1281 (1985).

67. J. Hinnefeld, J. Kolata, D. Henderson, R. Janssens, D. Kovar, K. Lesko, S. Sanders, G. Stephans, M. Vineyard, B. Wilkins, F. Prosser, V. Reinert, and A. Menchaca-Rocha, "Coincidences between heavy (A > 12) reaction products from ^{28}Si + ^{28}Si at 9 MeV/A", Bull. Am. Phys. Soc. **30**, 1246 (1985).

68. M. F. Vineyard, D. Henderson, D. G. Kovar , and B. Wilkins, "Performance of a Large Bragg Curve Spectrometer", Bull. Am. Phys. Soc. **30**, 1250 (1985).

69. M. F. Vineyard, D. G. Kovar, G. S. F. Stephans, K. E. Rehm, G. Rosner, H. Ikezoe, J. J. Kolata, and R. Vojtech, "Quasielastic Processes in the ^{28}Si + ^{40}Ca Reaction at 8 MeV/A", Bull. Am. Phys. Soc. **30**, 708 (1985).

70. R. Stern, F. Becchetti, T. Casey, J. Janecke, P. Lister, D. Kovar, R. Janssens, R. Pardo, M. Vineyard, and J. Kolata, "In-Beam Tests of an Air-core Superconducting-Solenoid Particle Spectrometer", Conf. on Instr. for Heavy Ion Research (ORNL, Oct. 22 - 24, 1984).

71. M. F. Vineyard, K. W. Kemper, and J. Cook, "Target and Projectile Excitation for ^{6}Li Scattering from ^{12}C and ^{16}O", Bull. Am. Phys. Soc. **28**, 994 (1983).

72. M. F. Vineyard, J. Cook, and K. W. Kemper, "Large Angle ^{6}Li + ^{28}Si Elastic and Inelastic Scattering at 27 and 34 MeV", Bull. Am. Phys. Soc. **28**, 716 (1983).

73. V. Hnizdo, J. Cook, K. W. Kemper, and M. F. Vineyard, "Analysis of 88 MeV ^{7}Li scattering with g.s. quadrupole moment contributions explicitly included", Bull. Am. Phys. Soc. **27**, 706 (1982).

Courses Taught

1. General Physics with Calculus
2. Liberal Arts Physics
3. Electronics
4. Quantum Mechanics
5. Electricity and Magnetism
6. Freshman Seminar in Physics
7. Integrated Math/Physics
8. Methods of Modern Experimental Physics
9. Sophomore Research Seminar on Energy and the Environment
10. Introduction to Astronomy Lab
11. Classical Mechanics

Research Students

1. Shivani Pathak (U-10), 2010
2. Colin Gleason (U-11), 2009-10
3. Charles Harrington (U-11), 2008-10
4. Peter Bonventre (U-11), 2007-08
5. Richard Bonventre (U-08), 2005-08
6. Christian Shultz (U-08), 2005-08
7. Elliot Imler (U-08), 2005-07
8. Robert Marvel (U-07), 2006-07
9. Steve Po-Chedley (U-08), 2006

10. Justin King (U-06), 2005-06
11. Garrett Nilsen (U-05), 2004-05
12. Fatima Mahmood (U-06), 2003-06
13. Jackson Reed (U-05), 2003-05
14. Jonathan Robbins (RC - 02), 2000-02
15. Adnan Iqbal (RC-03), 2001
16. Francisco Chinchilla (RC-02), 2000-02
17. Andrew Hearin (RC-03), 2000-02
18. Joseph Gardner (RC - 01), 1998-2001
19. Ryan Hall (RC-01), 1998-2001
20. Jeffrey Clark (RC - 01), 1999-2000
21. Thomas Trucksess (RC-00), 1999-2000
22. Steven Nock (RC - 99), 1998-99
23. Yaw Opoku (RC - 98), 1997-98
24. Jennifer Phend (WC - 99), 1997-98
25. Thomas Carroll (RC - 98), 1995-98
26. Christopher Hanes (RC - 97), 1996-97
27. Jill Nissen (WC - 97), 1996-97
28. Erica Lanzo (WC - 98), 1996
29. Merrill Mann (WC - 99), 1996
30. Michael Lack (RC - 98), 1995-97
31. Leith Kuhn (RC-95), 1994-95
32. Marc Cheatham (RC - 95), 1994-95
33. Ben Sabloff (RC - 96), 1994
34. Brian M. McKeever (RC - 96), 1993-96
35. Raymond Ohl (RC - 94), 1992-94
36. Jason Crum (RC - 92), 1991-92
37. James Rollinson (RC - 92), 1990-92

38. Shawn Atencio (RC-91), 1989-91

39. Craig Gosdin (RC-89), 1988-89

40. Richmond Trotter (RC-89), 1988-89

41. Jennifer Bauer (WC-88), 1987-88

Undergraduate Research, Theses, and Independent Study Projects Directed

1. "Use of PIXE to Determine Mercury Concentration in Crematoria Emissions," Shivani Pathak (U-10), 2010 (Honors Thesis, 2010).

2. "Particle Induced X-Ray Emission Analysis of Atmospheric Aerosols Collected in Upstate New York," Colin Gleason (U-11), 2009.

3. "Elemental Concentrations as a Function of Particle Size for Aerosol Samples Collected in Upstate New York from PIXE," Charles Harrington (U-11), 2009.

4. "Development of a Constant Acceleration Mossbauer Spectrometer for Environmental Research," Charles Harrington (U-11), 2008.

5. "Search for the Eta-Mesic Nucleus from Photoproduction on ^{3}He in CLAS," Peter Bonventre (U-11), 2008.

6. "Photoproduction of Neutral Mesons from Hydrogen and Helium Targets in CLAS," Richard Bonventre (U-08), 2007-08 (Honors Thesis, 2008).

7. "Light Meson Photoproduction on the Proton and He Using the CLAS Detector at Jefferson Lab," Christian Shultz (U-08), 2007-08 (Thesis, 2008).

8. "GEANT 4 Simulations for CLAS12," Peter Bonventre (U-11), 2007.

9. "Extraction of Yields for the $^3He\left(\gamma,\pi^0 p\right)$ and $^3He\left(\gamma,\eta p\right)$ Reactions at E_γ= 0.4-1.5 GeV," Richard Bonventre (U-08) and Christian Shultz (U-08), 2007.

10. "Fiducial Cuts for Photons in the CLAS G3 Data Set," Elliot Imler (U-08) and Christian Shultz (U-08), 2006.

11. "Momentum Corrections for Charged Particles Photoproduced on Hydrogen and Helium Targets in CLAS," Christian Shultz (U-08), Richard Bonventre (U_08), and Elliot Imler (U-08), 2006.

12. "Fiducial Cuts for Charged Particles in the CLAS G3 Data Set," Elliot Imler (U-08), Richard Bonventre (U_08), and Christian Shultz (U-08), 2006.

13. "Development of a Relativistic Dynamics Experiment," Robert Marvel (U-07), 2006-07 (Thesis, 2007).

14. "Construction of a Cosmic Ray Detector," Elliot Imler (U-06), 2006 (Scholars Sophomore Project).

15. "Development of a Muon Physics Experiment," Steve Po-Chedley (U-07), 2006.

16. "Development of a Mossbauer Spectrometer," Justin King (U-06), 2005-06 (Honors Thesis, 2006).

17. "Preliminary Cross Sections for the γ + p $\rightarrow$ π^+ + n Reaction," Christian Shultz (U-08), 2005.

18. "Preliminary Cross Sections for the γ + p $\rightarrow$ η + p Reaction," Richard Bonventre (U-08), 2005.

19. "Preliminary Cross Sections for the γ + p $\rightarrow$ π^0 + p Reaction," Elliot Imler (U-08), 2005.

20. "Missing Mass Analysis of Photoproduction from the Proton," Garrett Nilsen (U-05), 2004-05 (Thesis, 2005).

21. "Photoproduction of Neutral Mesons from the Proton Using the Missing Mass Technique," Jackson Reed (U-04), 2003-04 (Honors Thesis, 2004).

22. "Neutral Meson Analysis of Photoproduction from the Proton," Fatima Mahmood (U-06), 2003-2006 (Honors Thesis, 2006).

23. "Computer Vision", Jonathan Robbins (RC - 02), 2001-02.

24. "Electronic Logbook for the E5 Experiment at Jefferson Lab", A. Iqbal (RC-03), 2001.

25. "Development and Testing of Calibration Software for the CLAS Large Angle Calorimeters", F. Chinchilla (RC-02), 2001.

26. "Development of C++ Code for the Implementation of Fiducial Cuts for Meson Photoproduction Analysis", Joseph Gardner (RC - 01), 2001.

27. "Detection of η Mesons with CLAS Using the $\eta \rightarrow \pi^+\pi^-\pi^0$ Decay Channel", Andrew Hearin (RC-03), 2001.

28. "In Search of the Eta Meson", Joseph Gardner (RC - 01), 2001.

29. "Undergraduate Laboratory for Rotational Motion", Ryan Hall (RC-01), 2001.

30. "Development and Maintenance of a Linux Computing Cluster", F. Chinchilla (RC-02), 2000-01.

31. "Update of the Investigative Physics Laboratory Manual for Physics 132", Ryan Hall (RC-01), 2000.

32. "Time-of-Flight Calibrations for the E5 Run of the CLAS Collaboration", Thomas Trucksess (RC-00), 2000.

33. "Two Neutral Particle Filter for Cooking of the Data from the G2 Run of the CLAS Collaboration", Joseph Gardner (RC - 01), 2000.

34. "The Construction and Use of a Microcomputer", Jeffrey Clark (RC - 01), 1999-2000.

35. "Development of a Physics Educational Resource Web Page", Jonathan Robbins (RC - 02), 2000.

36. "Simulations of the $e + p \rightarrow e' + \pi^+ + n$ reaction in the CLAS", Ryan Hall (RC - 01) and Jonathan Robbins (RC - 02), 1999.

37. "Computer Simulations for an Eta Photoproduction Experiment at Jefferson Lab", Joseph Gardner (RC - 01), 1998-2000.

38. "The Physics of Speakers", Steven Nock (RC - 99), 1999.

39. "Design and Construction of a State Machine", Yaw Opoku (RC - 98), 1997-98.

40. "Chaotic Motion in a Damped Driven Physical Pendulum", Jennifer N. Phend (WC - 99), 1997-98.

41. "Analysis Software Development for an η Meson Photoproduction Experiment at Jefferson Lab", Thomas J. Carroll (RC - 98), 1997-98.

42. "From ICs to Machine: The Process of Building a Microcomputer", Christopher Hanes (RC - 97), 1996-97.

43. "The Physics of Bones" (with Penny Reynolds, Biology Department), Jill Nissen (WC - 97), 1996-97.

44. "Installation of the drift chamber control system in the gas shed at Jefferson Lab", Erica Lanzo (WC - 98) and Merrill Mann (WC - 99), 1996.

45. "Drift Chamber Gas System Controls Development for the CEBAF Large Acceptance Spectrometer", Thomas J. Carroll (RC - 98) and Michael N. Lack (RC - 98), 1995-97.

46. "Development of a Computer Interface for the Franck-Hertz Experiment", Leith Kuhn (RC-95), 1994-95.

47. "Computer Interface for an Electron Charge Experiment", Marc Cheatham (RC - 95), 1994-95.

48. "Intranuclear Monte Carlo Calculations for the Photoproduction of η and $\eta\prime$ Mesons", Ben Sabloff (RC - 96), 1994.

49. "A Study of the Feasibility of an $\eta\prime$ Photoproduction Experiment at CEBAF", Brian M. McKeever (RC - 96), 1993-94.

50. "Incomplete Fusion of $^{28}Si + ^{24}Mg$ Nuclei", Raymond G. Ohl (RC - 94), 1993-94.

51. "Development of a LabVIEW Interface for CLAS Drift Chamber Gas System Instrumentation", Brian M. McKeever (RC - 96), 1992.

52. "Correlations Between Light Charged Particles and Evaporation Residues in the $^{40}Ca + ^{12}C$ Reaction at $E_{lab}(^{40}Ca) = 450$ MeV", S. E. Atencio (RC-91), Jason Crum (RC - 92), Raymond G. Ohl (RC - 94), and James H. Rollinson (RC - 92), 1990-94.

53. "Energy dependence of fusion evaporation-residue cross sections in the ^{28}Si +^{12}C reaction", S. E. Atencio (RC-91), 1989-91.

54. "Calibrating a Multiwire Proportional Counter using Rutherford Scattering", C. H. Gosdin (RC-89), and R. S. Trotter (RC-89), 1988-89.

55. "Fusion evaporation-residue cross sections in the $^{28}Si + ^{40}Ca$ reaction at $E(^{28}Si)$ = 309, 397, and 452 MeV", J. S. Bauer (WC-88), J. F. Crum (RC-92), C. H. Gosdin (RC-89), and R. S. Trotter (RC-89), 1988-92.

56. "Energy Dependence of Fusion Evaporation-Residue Cross Sections in the ^{28}Si + ^{28}Si Reaction", J. S. Bauer (WC-88), C. H. Gosdin (RC-89), and R. S. Trotter (RC-89), 1986-90.

57. "Elastic Scattering of ^{28}Si from ^{28}Si at 309 MeV", J. S. Bauer (WC-88), 1987.

Student Presentations at Union College Steinmetz Symposia

1. S. Pathak, S. M. LaBrake, and M. F. Vineyard, "PIXE Analysis of Crematoria Emmissions," Steinmetz Symposium, Union College, May 7-8, 2010 (poster).

2. Colin Gleason, Chad Harrington, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Particle Induced X-Ray Emission Analysis of Atmospheric Aerosols Collected in Upstate New York," Steinmetz Symposium, Union College, May 7-8, 2010 (poster).

3. Chad Harrington, Coin Gleason, Katie Schuff, Scott LaBrake, and Michael Vineyard, "Elemental Concentrations as a Function of Particle Size for Aerosol Samples Collected in Upstate New York from PIXE," Steinmetz Symposium, Union College, May 7-8, 2010 (poster).

4. Peter Bonventre (11), "Search for the Eta-Mesic Nucleus from Photo-Production on He-3 in CLAS," Steinmetz Symposium, Union College, May 1-2, 2009.

5. Charles Harrington (11), "Development of a Constant Acceleration Mossbauer Spectrometer for Environmental Research," Steinmetz Symposium, Union College, May 1-2, 2009 (poster).

6. Richard Bonventre (08), "Extraction of Yiels for Neutral Meson Photoproduction from the Proton and ^{3}He with the CLAS Detector at Jefferson Lab," Steinmetz Symposium, Union College, May 2-3, 2008.

7. Christian Shultz (08), "Photoproduction of Light Mesons Using the CLAS Detector at JLab," Steinmetz Symposium, Union College, May 2-3, 2008.

8. Richard Bonventre (08), "Fiducial Cuts for the CLAS G3 Data Set," Steinmetz Symposium, Union College, May 4-5, 2007.

9. Robert Marvel (07), "Development of a Relativistic Dynamics Experiment," Steinmetz Symposium, Union College, May 4-5, 2007.

10. Stephen Po-Chedley (08), "Muon Lifetime Measurements and Determination of the Weak Force," Steinmetz Symposium, Union College, May 4-5, 2007.

11. Christian Shultz (08), "Momentum corrections for the CLAS g1c and g3a data sets," Steinmetz Symposium, Union College, May 4-5, 2007.

12. Justin King (06), "Development of a Mossbauer Spectrometer," Steinmetz Symposium, Union College, May 5-6, 2006.

13. Fatima Mahmood (06), "Neutral Meson Analysis of Photoproduction from the Proton, " Steinmetz Symposium, Union College, May 5-6, 2006.

14. Richard Bonventre (08), Elliot Imler (08), and Christian Shultz (08), "Meson Photoproduction from Hydrogen," Steinmetz Symposium, Union College, May 5-6, 2006.

15. Garrett Nilsen (05), "Missing Mass Analysis of Neutral Meson Photoproduction from the Proton," Steinmetz Symposium, Union College, May 6-7, 2005.

16. Fatima Mahmood (06), "Neutral Meson Analysis of Photoproduction from the Proton," Steinmetz Symposium, Union College, May 7-8, 2004.

17. Jackson Reed (04), "Photoproduction of Neutral Mesons from the Proton Using the Missing Mass Technique," Steinmetz Symposium, Union College, May 7-8, 2004.

Student Presentations at University of Richmond Research Symposia

1. A.P. Hearin, "Detection of the η Meson with the CLAS Detector at Jefferson Lab", poster presentation at the 17th Annual Arts & Sciences Student Symposium, April 12, 2002.

2. F. Chinchilla, "Development and Testing of Calibration Software for the CLAS Large Angle Calorimeter", poster presentation at the 17th Annual Arts & Sciences Student Symposium, April 12, 2002.

3. Francisco Chinchilla, "Development and Maintenance of a Linux Computing Cluster", poster presentation at the 16th Annual Arts & Sciences Student Symposium, April 20, 2001.

4. Joe Gardner, "Computer Sumulations for an Eta Meson Photoproduction Experiment at Jefferson Lab", oral presentation at the 15th Annual Arts & Sciences Student Symposium, April 14, 2000.

5. Jeffrey Clark, "The Construction and Use of a Microcomputer", poster presentation at the 15th Annual Arts & Sciences Student Symposium, April 14, 2000.

6. Ryan Hall, "A Computer Stimulation of the Neutron Detection Efficiency of the CLAS", oral presentation at the 15th Annual Arts & Sciences Student Symposium, April 14, 2000.

7. Joe Gardner, "Computer Simulations for an Eta Photoproduction Experiment at Jefferson Lab", poster presentation at the 14th Annual Arts & Sciences Student Symposium, April 15, 1999.

8. Yaw Opoku, "Design and Construction of a State Machine", oral presentation at the 13th Annual Arts & Sciences Student Research Symposium, April 17, 1998.

9. Thomas Carroll, "Photoproduction of the Eta Meson", oral presentation at the 13th Annual Arts & Sciences Student Symposium, April 17, 1998.

10. Jennifer Phend, "Chaotic Motion in a Damped Driven Physical Pendulum", poster presentation at the 13th Annual Arts & Sciences Student Symposium, April 17, 1998.

11. Thomas Carroll, "Control System Development at Thomas Jefferson National Laboratory", oral presentation at the 12th Annual Arts & Sciences Student Symposium, April 16, 1997.

12. Christopher Hanes, "From ICs to Machine - The Process of Building a Microcomputer Explained", oral presentation at the 12th Annual Arts & Sciences Student Symposium, April 16, 1997.

13. Thomas Carrol and Micheal Lack, "Control System Development for the CEBAF Large Acceptance Spectrometer", oral presentation at the 11th Annual Arts & Sciences Student Symposium, April 16, 1996.

14. Marc Cheatham**,** "Computer Interface for an Electron Charge Experiment", oral presentation at the 10th Annual Arts & Sciences Student Symposium, April 7, 1995.

15. Brian M. McKeever, "A Study of the Feasibility of Eta-Prime Photoproduction Experiment", oral presentation at the 9th Annual Arts & Sciences Student Symposium, April 8, 1994.

16. Raymond G. Ohl**,** "Incomplete Fusion of $^{28}Si + ^{24}Mg$ Nuclei", oral presentation at the 9th Annual Arts & Sciences Student Symposium, April 8, 1994.

17. Jason Crum**,** "Fusion evaporation-residue cross sections for $^{28}Si + ^{40}Ca$ at $E(^{28}Si)$ = 309, 397, and 452 MeV, presentation at the 7th Annual Arts & Sciences Student Symposium, April 10, 1992.

18. J. H. Rollinson, S. E. Atencio, J. Crum, and R. G. Ohl**,** "Proton and α-Particles Produced in Central Collisions Between ^{40}Ca and ^{12}C Nuclei", oral presentation at the 6th Annual Arts & Sciences Student Symposium, April 5, 1991.

19. S. E. Atencio and J. H. Rollinson, "Correlations Between Charged, Light Particles and Heavy Ions in the ^{40}Ca + ^{12}C Reaction at 450 MeV", oral presentation at the 5th Annual Arts & Sciences Student Symposium, April 6, 1990.

20. C. H. Gosdin and R. Trotter, "Calibrating a Multiwire Proportional Counter using Rutherford Scattering", oral presentation at the 4th Annual Arts & Sciences Student Symposium, April 7, 1989.

21. Richmond Trotter, "The Energy Depandence of the Fusion Evaporation Residue Cross Section in the ^{28}Si + ^{40}Ca Reaction", oral presentation at the 4th Annual Arts & Sciences Student Symposium, April 7, 1989.

22. J. S. Bauer, "Complete and Incomplete Fusion in ^{28}Si + ^{28}Si at E_{lab}= 309, 397, and 452 MeV", oral presentation at the 3rd Annual Arts & Sciences Student Symposium, April 8, 1988.

23. J. S. Bauer, "Elastic Scattering of ^{28}Si from ^{28}Si at 309 MeV", oral presentation at the 2nd Annual Arts & Sciences Student Symposium, April 3, 1987.

Union College Service

- 2009-present - Chair of the Department of Physics & Astronomy
- 2007 - Chair AdHoc Tenure Committee
- 2005-present - Committee on Intellectual Property
- 2002-2008 - Chair of the Department of Physics & Astronomy
- 2004 - AdHoc Tenure Committee
- 2004-2006 - Science Building Committee
- 2003-2004 - Computer Science Chair Search Committee

University of Richmond Service

- 2000-2002 - Science Review Committee
- 1999-2000 - Chair of the Dean Rosenblum Assessment Committee
- 1999-2002 - University Faculty Council (Chair 2001-2002)
- 1999-2002 - University Marshall
- 1999-2002 - Southeastern Universities Research Association Board of Trustees
- 1999-2002 - Health Professions Advising Committee
- 1997-99 - Science Initiative Research Committee
- 1997-98 - Reaffirmation of Accreditation Self-Study Subcommittee on Student Futures (Co-chair)
- 1996-2002 - Undeclared Student Advisor
- 1996-99 - Honors Committee (Chair 1997-99)
- 1992-93, 1994-95 - Curriculum Committee (Chair of the Natural Science Subcommittee in 1994-95)
- 1991-2000 - Ethyl and Albemarle Science Scholarship Committee
- 1991-93 - Search Committee for the E. Claiborne Robins Distinguished University Professor in the Sciences
- 1989-92 - University Scholars Committee
- 1988-93 - Richmond College Advisor

- 1987-2001 - Faculty Advisor of the UR Chapter of the Society of Physics Students and the UR Chapter of Sigma Pi Sigma, the Physics Honorary Society
- 1987-88 - Science Center Safety Committee
- 1987-88 - Science Center Computer Laboratory Committee

Professional Service

- 2009 - External reviewer for the Department of Physics and Astronomy at Goucher College
- 2008 - External reviewer for the Department of Physics at Gettysburg College
- 2006 - Proposal reviewer for the U. S. Department of Energy Division of Nuclear Physics
- 2005 - Proposal reviewer for the U. S. Department of Energy Division of Nuclear Physics
- 2003 - Proposal reviewer for the US Civilian Research Development Foundation (CRDF)
- 2001 - Referee for Physical Review C
- 2000 - Scholarship reviewer for a tenure case at a major US research university
- 1998 - Proposal reviewer for the U. S. Department of Energy Division of Nuclear Physics
- 1998 - Reviewer for the Undergraduate Research Poster Session on Capitol Hill
- 1997-98 - Reviewed research proposals for the U. S. Department of Energy Experimental Program to Stimulate Competitive Research (EPSCoR)
- 1997 - Organizational Committee for the Undergraduate Research Poster Session on Capitol Hill
- 1996-97 - Organized Undergraduate Research Poster Sessions at the Annual Spring Meetings of the American Physical Society
- 1995 - Chaired a Session on How to Succeed in Grant Writing in Physics at the Second Council on Undergraduate Research April Dialogue at the National Science Foundation in Arlington, VA
- 1994-96 - Coordinator of the G3 Run Group of the CEBAF Large Acceptance Spectrometer Collaboration
- 1994-96 - Coordinator of the CEBAF Hall B Controls Working Group
- 1994 - Summary Review Panel for the U. S. Department of Energy Experimental Program to Stimulate Competitive Research (EPSCoR)
- 1993-95 - Coordinator of the Council on Undergraduate Research Speakers Bureau
- 1993-95 - Chair of the Membership Committee of the Council on Undergraduate Research
- 1992-98 - Council on Undergraduate Research

- 1992-94 - Secretary of the Physics Division of the Council on Undergraduate Research
- 1991 - Referee for Nuclear Instruments and Methods in Physics Research A
- 1991 - Proposal reviewer for the U. S. Department of Energy Division of Nuclear Physics
- 1989-90 - President of the UR Chapter of Sigma Xi, The Scientific Research Society
- 1888-89 - Vice President of the UR Chapter of Sigma Xi, The Scientific Research Society
- 1988 - Nominating Committee of the CEBAF Large Acceptance Spectrometer Collaboration

Community Service

- 2008-09 - Union College Physical Constants Workshop for high school physics teachers and students
- 2002-2006 - Capital District Physics Teachers Union
- 1999, 2001 - Chesterfield Little League Coach
- 1995-2002 - UR Physical Constants Workshop for High School teachers and students
- 1995 - Science show-and-tell to a kindergarten class at Crenshaw Elementary School
- 1992 - Presentation on waves to a fourth grade class at A. M. Davis Elementary School
- 1988 - UR Habitat for Humanity Bike Race