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Professor of Physics

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Education and Training

Stanford University, Stanford, CA	Physics BS (1984)
Univ. of Il. at Champaign-Urbana , Urbana, IL	Physics MS (1985)
Univ. of Il. at Champaign-Urbana , Urbana, IL	Physics PhD (1991)

Appointments

- 2007 – present Senior Scientist and Affiliate Professor, Idaho Accelerator Center
2009 – present Professor, Idaho State University
2006 – 2009 Professor and Chair, Idaho State University Department of Physics
2003 – 2005 Sabbatical Scientist, Jefferson Laboratory
2000 – 2006 Associate Professor, University of Kentucky
1994 – 2000 Assistant Professor, University of Kentucky
1991 – 1994 Mass. Inst. of Technology, Research Staff
1985 – 1991 Research Assistant, University of Illinois

Refereed Publications

- High precision photon flux determination for photon tagging experiments, A. Teymurazyan, *et al.*, Nucl. Inst. Meth., A767: 300-309, 2014.
- Measurements of the $\gamma^* p \rightarrow \Delta$ reaction at low Q^2 , N. Sparveris, S. Stave, P. Achenbach, C. Ayerbe Gayoso, D. Baumann, J. Bernauer, A.M. Bernstein, R. Böhm, D. Bosnar, T. Botto A. Christopoulou, D. Dale, M. Ding, M.O. Distler, L. Doria, J. Friedrich, A. Karabarounis, M. Makek, H. Merkel, U. Muller, I. Nakagawa, R. Neuhausen, L. Nungesser, C.N. Papanicolas, A. Piegsa, J. Pochodzalla, M. Potokar, M. Seimetz, S. Sirca, S. Stiliaris, Th. Walcher, M. Weis, Eur.Phys.J. A49, 136, 2013.
- Virtual Compton Scattering and the Generalized Polarizabilities of the Proton at $Q^2=0.92$ and 1.76 GeV 2 , the Jefferson Laboratory Hall A Collaboration, Phys. Rev. C86, 015210, 2012.
- A New Measurement of the π^0 Radiative Width, I. Larin, *et al.*, the PrimEx Collaboration, Phys. Rev. Lett. 106:162303, 2011.
- The G0 Experiment: Apparatus for Parity-Violating Electron Scattering Measurements at Forward and Backward Angles, D. Androic, *et al.*, Nucl. Instr. Meth. A646:59-86, 2011.

- Nuclear incoherent photoproduction of π^0 and eta from 4 to 12 GeV, T.E. Rodrigues, J.D.T. Arruda-Neto, J. Mesa, C. Garcia, K. Shtejer, D. Dale, I. Nakagawa, P. Cole, Phys. Rev. C82:024608, 2010.
- Nuclear Targets for a Precision Measurement of the Neutral Pion Radiative Width, the PrimEx Collaboration, Nucl. Instr. Meth. A612:46-49, 2009.
- Photoproduction of $\pi^+ \pi^-$ meson pairs on the proton , the Jefferson Laboratory CLAS Collaboration, Phys. Rev. D80 072005, 2009.
- A Precise Measurement of the Neutron Magnetic Form Factor G_M^n in the Few-GeV² Region, the Jefferson Laboratory CLAS Collaboration, Phys. Rev. Lett. 102 192001, 2009.
- First measurement of direct f0(980) photoproduction on the proton , the Jefferson Laboratory CLAS Collaboration, Phys. Rev. Lett. 102, 102001, 2009.
- Exclusive ρ^0 electroproduction on the proton at CLAS, the Jefferson Laboratory CLAS Collaboration, Eur. Phys. J. A39, 5-31, 2009.
- Moments of the Spin Structure Functions $g^p(1)$ and $g^d(1)$ for $0.05 < Q^2 < 3.0$ -GeV², the Jefferson Laboratory CLAS Collaboration, Phys.Lett. B672, 12-16, 2009.
- Search for the photo-excitation of exotic mesons in the $\pi^+ \pi^+ \pi^-$ system, the Jefferson Laboratory CLAS Collaboration, Phys.Rev.Lett. 102, 102002, 2009.
- First measurement of target and double spin asymmetries for polarized-e polarized-p ---> e p π^0 in the nucleon resonance region above the Delta(1232) , the Jefferson Laboratory CLAS Collaboration, Phys.Rev. C78, 045204, 2008.
- Virtual Compton Scattering measurements in the $\gamma^* N \rightarrow \Delta$ transition, N.F. Sparveris, P. Achenbach, C. Ayerbe Gayoso, D. Baumann, J. Bernauer, A.M. Bernstein, R. Bohm, D. Bosnar, T. Botto, A. Christopoulou, D. Dale, M.O. Distler, L. Doria, Andreas Karabarounis, M. Makek, Harald Merkel, Ulrich Muller, I. Nakagawa, R. Neuhausen, L. Nungesser, C.N. Papanicolas, B. Pasquini, A. Piegsa, J. Pochodzalla, M. Potokar , M. Seimetz, S. Sirca, S. Stave, S. Stiliaris, Th. Walcher, M. Weis, Phys.Rev. C78 018201, 2008.
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- Electroproduction of $\phi(1020)$ mesons at $1.4 < Q^2 < 3.8$ GeV² measured with the CLAS spectrometer, the Jefferson Laboratory CLAS Collaboration, Phys. Rev. C78, 025210, 2008.
- Measurements of the $\gamma^* p \rightarrow \Delta$ Reaction At Low Q^2 : Probing the Mesonic Contribution, S. Stave, N. Sparveris, M.O. Distler, I. Nakagawa, P. Achenbach, C. Ayerbe Gayoso, D. Baumann, J. Bernauer, A.M. Bernstein , R. Bohm, D. Bosnar, T. Botto , A. Christopoulou, D. Dale, M. Ding, L. Doria, J. Friedrich, A. Karabarounis, M. Makek, H. Merkel, U. Muller, R. Neuhausen, L. Nungesser, C.N. Papanicolas, A. Piegsa, J. Pochodzalla , M. Potokar, M. Seimetz , S. Sirca , S. Stiliaris, Th. Walcher, M. Weis, Phys. Rev. C78, 025209, 2008.
- Polarized Structure Function sigma(LT') for p(polarized-e, e' K⁺) Lambda in the Nucleon Resonance Region, the Jefferson Laboratory CLAS Collaboration, Phys. Rev. C77, 065208, 2008.
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- Energy calibration of the JLab bremsstrahlung tagging system. S. Stepanyan *et al.*, Nucl. Instr. Meth. A572:654-661, 2007.
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- Search for $\theta(1540)$ pentaquark in high statistics measurement of γ p \rightarrow anti-K⁰ K⁺ n at CLAS, CLAS Collaboration (M. Battaglieri, *et al.*), Phys. Rev. Lett. 96:042001, 2006.
- Search for the θ^+ pentaquark in the reactions γ p \rightarrow anti-K⁰ K⁺ n and γ p \rightarrow anti-K⁰ K⁰ p, the CLAS Collaboration (R. De Vita, *et al.*), Phys. Rev. D74:032001, 2006.
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Recent Talks

Linac Based Photonuclear Applications at the Idaho Accelerator Center, Eleventh Topical Meeting on Nuclear Applications of Accelerators, Bruges, Belgium, August 2013.

A Precision Measurement of the Neutral Pion Lifetime, international conference on Electromagnetic Interactions in Nucleons and Nuclei, Paphos, Cyprus, November 2011.

Applied Physics Research at the Idaho Accelerator Center, invited talk at the Korean Atomic Energy Research Institute, Workshop on Electron Beam Applications, Daejon, Korea, March 2011.

Active Interrogation at the Idaho State University Idaho Accelerator Center, Lawrence Berkeley Laboratory, January 2010.

Photofission of Actinides with Linearly Polarized Photons, VIII Latin American Symposium on Nuclear Physics Applications, Santiago, Chile, December 2009.

Status of the PrimEx Experiment at Jefferson Lab, Invited talk at the 7th European research conference on “Electromagnetic Interactions of Nucleons and Nuclei”, Milos, Greece, September 2007.

Synergistic Activities

- Research mentor for undergraduate physics students continuously from 1994 to the present.
- Numerous public lectures and physics demonstration shows for K-12 classrooms.
- Numerous lecturers given for the Idaho State University NSF REU (Research Experience for Undergraduates) program.
- Numerous colloquia given at various universities.

Collaborators and Other Affiliations

- Spokesperson, Jefferson Laboratory *PrimEx* Collaboration.
- Past member of the JLab CLAS Collaboration.
- Past member of the JLab Hall A Collaboration.
- Past member University of Mainz A1 Collaboration.
- Graduate and Postdoctoral Advisors
 - Doctoral: Paul Debevec and Ronald Laszewski, University of Illinois at Urbana-Champaign Thesis: “*A Measurement of the Isovector Giant Quadrupole Resonance in Lead-208 using Linearly Polarized Photons*,” 1991.
 - Postdoctoral: William Bertozzi, Massachusetts Institute of Technology
- Post docs hosted
 - Ashot Gasparian (currently a Professor at NCA&T University)
 - Liping Gan (currently a Professor at the University of North Carolina Wilmington)
 - Itaru Nakagawa (currently working at RIKEN, Japan)
- Graduate Students Advised
 - Masters: Marianna Gabrielyan, M.S. 2006, University of Kentucky; Jasen Swansen, M.S. Idaho State University 2012.
 - PhD: Aram Teymurazyan, Ph.D. 2008; Oleksei Kosinov, Ph.D. Idaho State University, in progress. Jeff Burggraf and Kevin Tsai, M.S. Idaho State University, in progress.