

**Elizabeth J. Beise**  
**Professor, Department of Physics**  
**University of Maryland**  
**College Park, Maryland 20742**

**Education:**

Ph.D.        Massachusetts Institute of Technology, 1988  
B.A.        (*cum laude*), Carleton College, Northfield, MN, 1981

**Experience:**

2004-2006   Program Director for Nuclear Physics, National Science Foundation  
2002-        Professor, Department of Physics, University of Maryland  
1997-2002   Associate Professor, Department of Physics, University of Maryland  
1993-97     Assistant Professor, Department of Physics, University of Maryland  
1990-93     Senior Research Fellow Kellogg Radiation Lab, California Institute of Technology  
1988-90     Research Fellow, Kellogg Radiation Lab, California Institute of Technology

**Honors and Awards:**

U Md Faculty-mentor Phillip Merrill Scholarship Award (2004-05)  
APS Fellow, 2002  
Maria Goeppert-Mayer Award, APS, 1998  
APS Centennial Speaker, 1998/99 academic year  
University of Maryland General Research Board Semester Award, Fall 1997  
Peter T. Demos Award for research at the Bates Accelerator, 1988

**Professional Activities:**

DNP Fellowship Committee, 2006  
Physical Review C Editorial Board, 2005-2007  
JLAB Hall C Steering Committee, 2004-2006  
Dept of Energy Committee of Visitors (Nucl. Phys. Review Panel), 2003  
Chair, NSF Panel Review of Medium Energy Physics, 2003  
DNP Nominating Committee, 2003-2005, Chair 2004  
TUNL Advisory Board, 2002-  
Institute for Nuclear Theory Advisory Panel, 2002-2004  
DNP National Nuclear Physics Summer School Committee, 2000-2003 (Chair, 2002)  
DNP Program Committee, 2002-2004  
Jefferson Lab Science+Technology Review Committee, Summer 2002  
DOE Panel review of TUNL/Duke University, 2002  
Physics Advisory Board, Carnegie Mellon University, 2002  
Nuclear Science Advisory Committee (NSAC), 1999-2001  
NSAC Long Range Plan Writing Group, 1995, 2001  
Search Committee for Jefferson Laboratory Director, 2001  
Search Committee for Physical Review C Editor, 2001  
Associate Editor, Nuclear Physics A, 1999-  
APS Committee on the Status of Women in Physics, 1999-2001  
DNP Public Information Committee, 1999-2001

Chair, JLAB Board of Directors Search Committee, 1999  
Bates User's Group Board of Directors, 1998-  
APS Division of Nuclear Physics Executive Committee, 1994-96.  
CEBAF User's Group Board of Directors, 1993-96, Chair 1996  
American Physical Society (DNP, FED, FIP, GFB, GHP), AAAS  
Phi Beta Kappa (1981)

**Conference Organization:**

International Advisory Committee, 17th IUPAP Conference on Fewbody Physics, 2003  
Chair, Photonuclear Gordon Conference, 2002  
Program Committee, *Workshop on Electromagnetic Nuclear Physics at Low Momentum Transfer*,  
Halifax, N.S., August 2001  
Program Committee, *Baryons 2001*, Jefferson Lab, September 2001  
PANIC99 Program Committee, Uppsala, Sweden, June 1999  
Co-organizer, parallel session on nucleon structure, BARYONS 98, Bonn, Germany, Sept. 98  
Co-organizer of parallel session for 8<sup>th</sup> International SPIN94 Conference,  
Bloomington, IN, September 1994.  
Co-organizer of parallel session for V<sup>th</sup> International Conference on the  
Intersections of Particle & Nuclear Physics, St. Petersburg, FL, June 1994.

**Theses Directed:**

Liu, Jianglai, The G0 Experiment (in progress).  
Horn, Tanja, Measurement of the Pion Charge Form Factor (in progress).  
Spayde, Damon T., Measurement of the strange magnetic form factor of the proton using  
elastic electron scattering, Ph.D. thesis, 2001.  
Gustafsson, Kenneth K., Measurement of deuteron tensor polarization in elastic electron  
scattering, Ph.D. thesis, 2000.  
Mohring, Richard Matthew, A comparison of longitudinal and transverse cross sections in  
the  $p(e, e'K^+)\Lambda$  and  $p(e, e'K^+)\Sigma^0$  reactions, Ph.D. thesis, 1999.

**Papers published (or accepted for publication) in refereed journals**

- 1) Detecting the Radiative Decay Mode of the Neutron, B. M. Fisher. and F. E. Wietfeldt, M. S. Dewey, T. R. Gentile, J. S. Nico, K. J. Coakley, E. J. Beise, K. G. Kiriluk, J. Byrne J. Res. NIST, **110** 4 (2005) 421.
- 2) The Cryogenic Target for the  $G^0$  Experiment at Jefferson Lab, S. D. Covrig, E. J. Beise, R. Carr, K. K. Gustafsson, L. Hannelius, M.-C. Herda, C. E. Jones, J. Liu, R. D. McKeown, R. Neveling, A. W. Rauf, G. Smith, Nucl. Instrum. Meth. **A 551**, 218 (2005).
- 3) Strange Quark Contributions to Parity-Violating Asymmetries in the Forward  $G^0$  Electron-Proton Scattering Experiment, D. S. Armstrong, *et al.*, Phys. Rev. Lett. **95** (2005) 092001.
- 4) The Axial Form Factor of the Nucleon, E.J. Beise, Eur. Phys. J. **A24S2**, 43 (2005).
- 5) The SAMPLE experiment and weak nucleon structure, E. J. Beise, M. L. Pitt, and D. T. Spayde, Prog. Part. Nucl. Phys. **54**, 289 (2005).
- 6) Basic Instrumentation for Hall A at Jefferson Lab, B. D. Anderson, *et al.*, (The Jefferson Lab Hall A Collaboration), Nucl. Instrum. Methods **A522**, 294 (2004).
- 7) E.J. Beise, M.L. Pitt and D.T. Spayde, The SAMPLE Experiment and Weak Nucleon Structure, Prog. Part. Nucl. Phys. **54**, 289 (2005). (invited review article).
- 8) Parity-violating Electron Deuteron Scattering and the Proton's Neutral Weak Axial Vector Form Factor, T. Ito, *et al.*, Phys. Rev. Lett. **92**, 102003 (2004)
- 9) The strange quark contribution to the proton's magnetic moment, D.T. Spayde, *et al.*, Phys. Lett. **B583**, 79 (2004).
- 10) Quasielastic  $(e, e'p)$  reaction on  $^{12}\text{C}$ ,  $^{56}\text{Fe}$  and  $^{97}\text{Au}$ , D. Dutta, *et al.*, Phys. Rev. C **68**, 064603 (2003).
- 11) Cross-section measurement of charged-pion photoproduction from hydrogen and deuterium, L. Y. Zhu, *et al.*, Phys. Rev. Lett. **91**, 022003 (2003).
- 12) Nuclear transparency with the process  $^4\text{He}$ , D. Dutta, *et al.*, Phys. Rev. C **68**, 021002(R) (2003).
- 13) A Study of the Quasielastic  $(e, e'p)$  reaction on  $^{12}\text{C}$ ,  $^{56}\text{Fe}$ , and  $^{97}\text{Au}$ , D. Abbott, *et al.*, Phys. Rev. C **68**, 064603 (2003).
- 14) Separation of the longitudinal and transverse cross sections in the  $(e, e'K^+)\Lambda$  and  $(e, e'K^+)\Sigma^0$  reactions, R. M. Mohring, *et al.*, Phys. Rev. C **67**, 055205 (2003).
- 15) Measurement of longitudinal and transverse cross sections in the  $^3\text{He}(e, e'\pi)^3\text{H}$  reaction at  $W=1.6$  GeV, D. Gaskell, *et al.*, Phys. Rev. C **65**, 011001 (2002).
- 16) Longitudinal Electroproduction of Charged Pions from  $^1\text{H}$ ,  $^2\text{H}$ , and  $^3\text{He}$ , D. Gaskell, *et al.*, Phys. Rev. Lett. **87**, 202301 (2001).
- 17) Measurement of the vector analyzing power in elastic electron-proton scattering as a probe of the double virtual Compton amplitude, S. P. Wells, *et al.*, Phys. Rev. C **63**, 064001 (2001).

- 18) Strange Magnetism and the Anapole Structure of the Proton, R. Hasty, *et al.*, Science **290**, 2117 (2000).
- 19) Separated spectral functions for the quasifree  $^{12}\text{C}(e, e'p)$  reaction, D. Dutta, *et al.*, Phys. Rev. C **61**, 061602(R) (2000).
- 20) Measurement of tensor polarization in elastic electron-deuteron scattering at large momentum transfer, D. Abbott, *et al.* Phys. Rev. Lett. **84**, 5053 (2000).
- 21) Phenomenology of the deuteron electromagnetic form factors, D. Abbott, *et al.*, (The Jefferson Lab  $t_{20}$  Collaboration), Eur. Phys. J. **A7**, 421 (2000).
- 22) Parity violation in elastic electron-proton scattering and the proton's strange magnetic form factor, D. T. Spayde, *et al.*, Phys. Rev. Lett. **84**, 1106 (2000).
- 23) An energy feedback system for the MIT/Bates Linear Accelerator, D. H. Barkhuff, *et al.*, Nucl. Instrum. Methods **A450**, 187 (2000).
- 24) Measurement of vector-tensor spin-transfer observables for the reaction  $\text{H}(\vec{p}, \vec{d})\pi^+$  between 580 and 1300 MeV, C. Furget, *et al.*, Nucl. Phys. A **655**, 495 (1999).
- 25) Coherent  $\pi^0$  photoproduction on the deuteron up to 4 GeV, D. G. Meekins, *et al.*, Phys. Rev. C **60**, 052201 (1999).
- 26) A precise measurement of the deuteron elastic structure function  $A(Q^2)$ , D. Abbott, *et al.*, Phys. Rev. Lett. **82**, 1379 (1999).
- 27) Measurements of deuteron photodisintegration up to 4.0 GeV, C. W. Bochna, *et al.*, Phys. Rev. Lett. **81**, 4576 (1998).
- 28) Longitudinal and transverse cross sections in the  $^1\text{H}(e, e'K^+)\Lambda$  reaction, G. Niculescu, *et al.*, Phys. Rev. Lett. **81**, 1805 (1998).
- 29) Quasifree  $(e, e'p)$  reactions and proton propagation in nuclei, D. Abbott, *et al.*, Phys. Rev. Lett. **80**, 5072 (1998).
- 30) Measurement of the analyzing power  $A_{y0}$  for the reaction  $\text{H}(\vec{p}, d)\pi^+$  between 1000 and 1300 MeV, J. Goy, *et al.*, Phys. Rev. C **57**, 420 (1998).
- 31) Measurement of the proton's neutral weak magnetic form factor, B. Mueller, *et al.*, Phys. Rev. Lett. **78**, 3824 (1997).
- 32) A high power liquid hydrogen target for parity violation experiments, E. J. Beise, *et al.*, Nucl. Instrum. Methods **A378**, 383 (1996).
- 33) Inclusive electron scattering from nuclei at  $x \simeq 1$ , J. Arrington, *et al.*, Phys. Rev. C **53**, 2248 (1996).
- 34) Evidence for virtual Compton scattering from the proton, J. F. J. van den Brand, *et al.*, Phys. Rev. D **52**, 4868 (1995).
- 35) Measurement of the spin-dependent asymmetry in  $^3\vec{\text{He}}(\vec{e}, e')$  inelastic scattering at low energy transfer, C. Jones, *et al.*, Phys. Rev. C **52**, 1520 (1995).
- 36) A-dependence of nuclear transparency in quasielastic  $A(e, e'p)$  at high  $Q^2$ , T. G. O'Neill, *et al.*, Phys. Lett. **B351**, 87 (1995).

- 37) Exclusive electron scattering from deuterium at high momentum transfer, H. J. Bulten, *et al.*, Phys. Rev. Lett. **74**, 4775 (1995).
- 38) Measurements of quasi-elastic pion single charge exchange on  $^3\text{He}$  at  $T_\pi = 245$  MeV, M. L. Dowell, *et al.*, Phys. Lett. **B344**, 91 (1995).
- 39) Transverse-longitudinal asymmetry in the quasielastic  $^3\text{He}(\vec{e}, e')$  reaction, J.-O. Hansen, *et al.*, Phys. Rev. Lett. **74**, 654 (1995).
- 40) Two-body photodisintegration of the deuteron up to 2.8 GeV, J. E. Belz, *et al.*, Phys. Rev. Lett. **74**, 646 (1995).
- 41) Measurement of the neutron magnetic form factor from inclusive quasielastic scattering of polarized electrons from polarized  $^3\text{He}$ , H. Gao, *et al.*, Phys. Rev. C **50**, R546 (1994).
- 42) Momentum transfer dependence of nuclear transparency from the quasielastic  $^{12}\text{C}(e, e'p)$  reaction, N. C. R. Makins, *et al.*, Phys. Rev. Lett. **72**, 1986 (1994).
- 43) Intermediate-energy semileptonic probes of the hadronic neutral current, M. J. Musolf, T. W. Donnelly, J. Dubach, S. J. Pollock, S. Kowalski, and E. J. Beise, Physics Reports **239**, 1 (1994) (invited).
- 44) Tensor polarization in elastic electron-deuteron scattering in the momentum transfer range  $3.8 \leq Q \leq 4.6 \text{ fm}^{-1}$ , M. Garçon, *et al.*, Phys. Rev. C **49**, 2516 (1994).
- 45)  $^3\text{He}(\vec{e}, e')$  quasielastic asymmetry, C. E. Jones, *et al.*, Phys. Rev. C **47**, 110 (1993).
- 46) Exclusive  $^{16}\text{O}(\gamma, \pi^- p)$  reaction in the  $\Delta$  resonance region, L. D. Pham, *et al.*, Phys. Rev. C **46**, 621 (1992).
- 47) Proton propagation in nuclei studied in the  $(e, e'p)$  reaction, G. Garino, *et al.*, Phys. Rev. C **45**, 780 (1992).
- 48) A variable energy Møller polarimeter at the MIT-Bates Linear Accelerator Center, J. Arrington, *et al.*, Nucl. Instrum. Methods **A311**, 39 (1992).
- 49) Determination of the neutron electric form factor in quasielastic scattering of polarized electrons from polarized  $^3\text{He}$ , C. E. Jones-Woodward, *et al.*, Phys. Rev. C **44**, R571 (1991).
- 50) Measurement of tensor polarization in elastic electron-deuteron scattering in the momentum-transfer range  $3.8 \leq q \leq 4.6 \text{ fm}^{-1}$ , I. The, *et al.*, Phys. Rev. Lett. **67**, 173 (1991).
- 51) Neutral weak form factors and strangeness in the proton, E. J. Beise and R. D. McKeown, Comments Nucl. Part. Phys. **20**, 105 (1991).
- 52) Measurement of inclusive quasielastic scattering of polarized electrons from polarized  $^3\text{He}$ , C. E. Woodward, *et al.*, Phys. Rev. Lett. **65**, 698 (1990).
- 53) Reaction  $^{58}\text{Ni}(\pi^+, pp)$  at  $T_{\pi^+} = 160$  MeV, W. J. Burger, *et al.*, Phys. Rev. C **41**, 2215 (1990).
- 54) Proton propagation in nuclei in the A-dependence of the  $(e, e'p)$  reaction in the quasifree region, D. F. Geesaman, *et al.*, Phys. Rev. Lett. **63**, 734 (1989).
- 55) A recoil proton spectrometer for photoneutron knockout experiments, E. J. Beise, *et al.*, Nucl. Instrum. Methods **A281**, 559 (1989).

- 56) Measurement of  $^{16}\text{O}(\gamma, n)^{15}\text{O}$  at medium energies, E. J. Beise, *et al.*, Phys. Rev. Lett. **62**, 2593 (1989).
- 57) Reaction  $^{58}\text{Ni}(\pi^+, 2p)$  at 160 MeV, W. J. Burger, *et al.*, Phys. Rev. Lett. **57**, 58 (1986).

## Conference Proceedings

Electron Scattering and Hadron Structure, E. J. Beise, E. J. Beise, in Proceedings of *INPC2004: International Nuclear Physics Conference, Goteborg, Sweden, June 2004*.

The Axial Form Factor of the Nucleon, E. J. Beise, in Proceedings of *PAVI04: Workshop on Parity Violation and Hadronic Structure, Grenoble, France, June 2004*, in Eur. Phys. Jour **A24S2** (2005) 43.

$G^0$  Experiment Status, G. Batigne for the G0 Collaboration, in *Proceedings of the XIVth International Conference on Perspectives in Hadronic Physics, Trieste, IT, in Eur. Phys. Jour. A19*, 206 (2004).

Electron scattering and hadron structure, E. J. Beise, in *Proceedings of the Conference on the Intersections Between Particle and Nuclear Physics, New York, NY, May 2003*, edited by Zohreh Parsa, AIP Conference Proceedings **698**, (AIP, New York, 2003), pp. 23-32.

Parity violation with electrons and hadrons, E. J. Beise, in *Proceedings of the 17th International IUPAP Conference on Few-Body Problems in Physics*, edited by W. Glöckle, T. Pulis, and W. Tornow (TUNL, Durham, NC, 2003).

Parity Violation and Hadron Structure, E. J. Beise for the SAMPLE Collaboration, in the proceedings of the *Bates 25: Celebrating 25 Years of Beam to Experiment, Cambridge, MA, 3-5 November 1999*, edited by T. W. Donnelly and W. Turchinets, AIP Conference Proceedings **50**, pp. 305-312.

Tensor Polarization and Cross-Section Measurement in Elastic Electron- Deuteron Scattering between 4.1 and 6.8  $\text{fm}^{-1}$ , S.A. Wood for the JLAB  $t_{20}$  collaboration, in the proceedings of *BARYONS98, Bonn, Germany, Oct 1998* (World Scientific), pp. 559-562.

The  $A(Q^2)$  deuteron structure function from the Jefferson Lab  $t_{20}$  experiment, D. Pitz for the JLAB  $t_{20}$  collaboration, in the proceedings of *BARYONS98, Bonn, Germany, Oct 1998* (World Scientific), pp. 563-566.

Recent Progress on the electromagnetic structure of the deuteron, J. Jourdan and A. Lung, for the JLAB  $t_{20}$  collaboration, in proceedings of the *International Workshop on Electron Nucleus Scattering, Elba, Italy, June 1998*, (Edizioni ETS, Pisa).

Tensor polarization and cross section measurement in elastic electron-deuteron scattering between 4.1 and 6.8  $\text{fm}^{-1}$  of momentum transfer, J.-E. Ducret for the JLAB  $t_{20}$  collaboration, in proceedings of the *International Conference on Mesons and Light Nuclei, Prague-Pruhonice, Czech Republic, August 1998* (World Scientific Publishing).

Deuteron Electromagnetic Form Factors, E. J. Beise representing the JLAB  $t_{20}$  collaboration, in *Few-Body Problems in Physics '98, Supplement 10, Proceedings of the 16th European Conference on Few-Body Problems in Physics, Autrans, France, June 1-6, 1998*, edited by B. Desplanques, K. Protasov, B. Silvestre-Brac, and J. Carbonell (Springer Wien, New York, 1999), pp. 315-322.

Tensor polarization measurement in elastic electron-deuteron scattering at large momentum transfer, C. Furget, *et al.*, in the proceedings of *MESON98, Cracow, Poland, June 1998*, Nucl. Phys. **A654**, 493-496 (1999).

Deuteron Elastic Form Factors: Opportunity for BLAST?, W. Turchinets, *et al.*, in the proceedings of the *Workshop on Physics with the BLAST detector, Massachusetts Institute of Technology, May 1998*.

Electron Scattering and Nucleon Form Factors, E. J. Beise, in the proceedings of the *International Workshop on Hadron Physics 98, Florianopolis, Brazil, 16-21 March 1998*, edited by Erasmo Ferreira, Frederico F. de Souza Cruz, and Sidney dos Santos Avancini, (World Scientific, Singapore, 1999), pp. 227-245.

Parity violation and nucleon structure, E. J. Beise for the SAMPLE Collaboration, in *Proceedings of the 7th International Conference on Hadron Spectroscopy (HADRON98), Brookhaven National Lab, Upton, NY, August 1997*, edited by S.-U. Chung and H. Willutzki, (AIP Conference Proceedings, Woodbury, NY, 1998), pp. 153-156.

Kaon electroproduction on deuterium, D. Abbott, *et al.*, given at *6th International Conference on Hypernuclear and Strange Particle Physics (HYP 97), Upton, NY, 13-18 October 1997*. Published in Nucl. Phys. **A639**, 197-204 (1998).

Measurement of tensor polarization observables in the  $H(\vec{p}, \vec{d})\pi^+$  reaction between 580 and 1300 MeV, C. Furget, *et al.*, in *Proceedings of the XV<sup>th</sup> International Conference on Fewbody Physics, Groningen 22-26 July 1997*, to be published in Nucl. Phys. A.

Final calibration of *POLDER* for the measurement of  $t_{20}$  in  $e-d$  scattering at Jefferson Lab, J. Arvieux, *et al.*, in *SPIN'96 Proceedings, 12th International Symposium on High-Energy Spin Physics, September 10-14, 1996, Amsterdam, The Netherlands*, edited by C. W. de Jager, T. J. Ketel, P. J. Mulders, J. E. J. Oberski, and M. Oskam-Tamboezer (World Scientific, Singapore, 1997), pp. 189-191.

Beam polarimetry and spin transport for the SAMPLE Experiment, J. Arrington, *et al.*, in *SPIN'96 Proceedings, 12th International Symposium on High-Energy Spin Physics, September 10-14, 1996, Amsterdam, The Netherlands*, edited by C. W. de Jager, T. J. Ketel, P. J. Mulders, J. E. J. Oberski, and M. Oskam-Tamboezer (World Scientific, Singapore, 1997), pp. 813-815.

Experimental status of parity violating electron scattering, E. J. Beise, in *SPIN'96 Proceedings, 12th International Symposium on High-Energy Spin Physics, September 10-14, 1996, Amsterdam, The Netherlands*, edited by C. W. de Jager, T. J. Ketel, P. J. Mulders, J. E. J. Oberski, and M. Oskam-Tamboezer (World Scientific, Singapore, 1997), pp. 89-97.

SAMPLE: Parity-violating electron scattering from hydrogen and deuterium, E. J. Beise *et al.*, in *Proceedings of the 9th mini-conference on Electromagnetic Studies of the Deuteron, Amsterdam, February 1996*, edited by B. L. G. Bakker, T. Ketel, and H. de Vries (NIKHEF, Amsterdam, The Netherlands, 1996), pp. 112-120.

Lepton probes of hadronic structure: Summary, E. J. Beise, *Intersections Between Particle and Nuclear Physics, 5th Conference, St. Petersburg, FL 1994*, AIP Conference Proceedings 338, edited by Susan J. Seestrom (AIP, New York, 1995), pp. 635-641.

Summary of hadron form factors, E. J. Beise, in *SPIN'94, Eighth International Symposium on Polarization Phenomena in Nuclear Physics, Bloomington, IN, September 1994* (AIP in progress).

Parity-violating electron scattering at Bates and CEBAF, E. J. Beise, in Proceedings of the *Workshop of Future Directions in Particle and Nuclear Physics at Multi-GeV Hadron Facilities, Brookhaven National Laboratory, 4-6 March 1993*, edited by Donald F. Geesaman (NTIS, U.S. Department of Commerce, 1993), pp. 184-188.

Neutral weak form factors of the proton: proposed experiments, E. J. Beise, in proceedings of *BARYONS 92 Conference, Yale University, New Haven, CT, June 1-4, 1992*, edited by Moshe Gai (World Scientific, 1993), pp. 392-398.

Neutral weak form factors and strangeness in the nucleon, E. J. Beise and R. D. McKeown, Nucl. Phys. **A532**, C521 (1991).

Measurement of  $^{16}\text{O}(\gamma, n)$  at medium energies, E. J. Beise, in *Conference on Intersections Between Particles and Nuclei, Rockport, ME, May 1988*, edited by Gerry M. Bunce (AIP, New York, 1988), pp. 534-536.

### **Invited Talks at scientific meetings**

Electron Scattering and Hadron Structure, invited talk at the XXIX Mazurian Lakes Conference on Physics, Ruciane-Nide, Poland, Sept. 2005.

Parity Violating e-p Experiments, invited talk at the Gordon Conference on Nuclear Physics, Bates College, ME, July 2005.

Strange Form Factors of the Proton, invited talk at the JLab Users Meeting, Jefferson Laboratory, June 2005.

Strangeness in the Nucleon, E. J. Beise, Invited talk at the Workshop on Advances in Understanding the Nucleon, Division of Nuclear Physics Fall meeting, Chicago, IL, October 2004.

Electron Scattering and Hadron Structure, invited talk at the International Nuclear Physics Conference, INPC2004, Goteborg Sweden, June 2004.

The Axial Form Factor of the Nucleon, invited talk at the Workshop on Parity Violation and Hadron Structure, PAVI04, Grenoble, France, June 2004.

Parity violation with electrons and hadrons, invited talk at the 17th International IUPAP Conference on Few-Body Problems in Physics, Durham, NC, June 2003.

Electron scattering and hadron structure, invited talk at the Conference on the Intersections Between Particle and Nuclear Physics (CIPANP2003), New York, NY, May 2003.

Parity Violation and Nucleon Structure, (invited) for CEU (Conference Experiences for Undergraduates) participants at APS-DNP Meeting, Fall 2002.

Parity violation at the MIT-Bates Laboratory, APS Meeting, Long Beach, CA, April 29-May 2, 2000.



Parity violation in electron scattering, Bates 25th Anniversary Symposium, MIT, Cambridge, MA, November 1999.

The electromagnetic structure of the deuteron, Gordon Conference on Fewbody Systems in Chemistry and Physics, Newport, RI, July 1999.

Strangeness form factors of the nucleon, APS Centennial Meeting, Atlanta, GA, March 20-26, 1999.

Parity Violation and Nucleon Structure, New England Section of the APS Meeting, October 1998.

Experimental Status of the Electromagnetic Structure of the Deuteron, for the JLAB  $t_{20}$  collaboration, 16th European Fewbody Conference, Autrans, FRANCE, June 1998.

Electron Scattering and Nucleon Structure, Maria Goeppert-Mayer Award Recipient talk at DNP Prize Session, 1998 Joint Meeting of the APS and AAPT, Columbus, OH, April 18-21, 1998.

Electron Scattering and Nucleon Structure, VI<sup>th</sup> Hadron Physics Conference, Florianopolis, Brazil, March 1998.

Parity violating electron scattering: Experiments, 7th International Conference on Hadron Spectroscopy (HADRON97), Brookhaven National Lab, Upton, NY, August 1997.

Strangeness in the nucleon, APS Division of Nuclear Physics Fall Meeting, Workshop on the Quark-Gluon Structure of the Nucleon, Cambridge, MA, October 1996.

Parity violating electron scattering experiments, *SPIN'96*, 12th International Symposium on High Energy Spin Physics, Amsterdam, September 1996.

SAMPLE: Parity violating electron scattering from hydrogen and deuterium, Ninth Amsterdam Mini Conference, Amsterdam, Netherlands, February 1996.

Neutral weak currents in the proton, NSAC Town Meeting on Electromagnetic Physics, Argonne National Laboratory, Argonne, IL, January 1995.

Summary of hadron form factors, *SPIN'94*, Eighth International Symposium on Polarization Phenomena in Nuclear Physics, Bloomington, IN, September 1994.

Parity violating electron scattering at Bates and CEBAF, APS Division of Nuclear Physics Fall Meeting, Williamsburg, VA, September 1994.

Summary of lepton probes of hadronic structure, 5th International Conference on Intersections between Particles and Nuclei, St. Petersburg, FL, May 1994.

Parity violation and strangeness in nuclear systems, Workshop on CEBAF at Higher Energies, CEBAF, Newport News, VA, April 1994.

Parity-violating electron scattering at Bates and CEBAF, CEBAF Summer Retreat, Snowshoe, WV, May 1993.

Parity-violating electron scattering at Bates and CEBAF, Workshop of Future Directions in Particle and Nuclear Physics at Multi-GeV Hadron Facilities, Brookhaven National Laboratory, March 1993.

Neutral weak form factors of the proton: proposed experiments, BARYONS 92 Conference, Yale University, New Haven, CT, June 1992.

Measurement of  $^{16}\text{O}(\gamma, n)$  at medium energies, Gordon Research Conference on Photonuclear Reactions, Plymouth, NH, August 1988.

### **Colloquia, seminars, and special lectures**

Parity Violating e-p Experiments, Michigan State University Nuclear Physics Seminar, February 2006.

Strange and Not So Strange Things about the Proton, Lawrence Berkeley National Laboratory Nuclear Science Division Colloquium, December 2005.

Strange and Not So Strange Things about the Proton, Argonne National Laboratory Physics Division Colloquium, October 2005.

Strange and Not So Strange Things about the Proton, George Mason University seminar, October 2005.

Strange and Not So Strange Things about the Proton, Brigham Young University Colloquium, April 2005.

Strange and Not So Strange Things about the Proton, Arizona State University Colloquium, October 2004.

Parity Violation and Hadron Structure, seminar, University of Maryland, March 2004.

Strange and not so strange things about the proton, U Md Graduate Student Foundations and Frontiers Seminar, March 2004.

Strange Quarks in the Proton, Carnegie Mellon University, Colloquium, Jan. 2004.

Parity Violation and Hadron Structure, Ohio State University, seminar, Sept. 2003.

Parity Violation and Hadron Structure, Los Alamos National Laboratory, seminar, Feb. 2003 (invited as Distinguished Visitor to Physics Division).

Probing the nucleon with electron scattering, Foundations and Frontiers Seminar, Colloquium, University of Arizona, November 2001.

Probing the nucleon with electron scattering, U Md Graduate Student Foundations and Frontiers Seminar, October 2001.

Probing the nucleon with electron scattering, U Md Graduate Student Foundations and Frontiers Seminar, April 2001.

Parity violation and strange quarks in the proton, Colloquium, College of William and Mary, December 2000.

The SAMPLE experiment, seminar, Jefferson Laboratory, December 1999.

Parity violation and strange quarks, 5-college colloquium, sponsored by University of Massachusetts at Amherst, October 1999.

Parity violation and strange quarks, colloquium, Boston University, October 1999.

Probing the nucleon with electron scattering, colloquium, Ohio University, April 1999.

The electromagnetic structure of the deuteron, colloquium, Argonne National Laboratory, March 1999.

Probing the nucleon with electron scattering, colloquium, University of Kentucky, December 1998.

Probing the nucleon with electron scattering, SPS seminar, UMBC, November 1998.

The Electromagnetic structure of the deuteron, seminar, North Carolina State University, November 1998.

The JLAB experiment scheduling procedure: from proposal to publication, JLAB special lecture, October 1998.

First results from JLAB, colloquium, Indiana University, October 1998.

Probing the nucleon with electron scattering, seminar, UMd Graduate Student Frontiers and Foundations in Physics, October 1998.

Early results from the JLAB  $t_{20}$  experiment, seminar, Kellogg Radiation Lab, Caltech, February 1998.

Parity violation and strangeness in the proton, seminar, Institut des Sciences Nucléaires, Grenoble, France, February 1998.

First results from the JLAB  $t_{20}$  experiment, seminar, Institute of Nuclear Theory, University of Washington, Seattle, December 1997.

Probing the nucleon with electron scattering, seminar, UMd Graduate Student Frontiers and Foundations in Physics, October 1997.

Probing the nucleon with electron scattering, seminar, NIST, October 1997.

Probing the nucleon with electron scattering, colloquium, Texas Tech University, March 1997.

Strange quarks in the proton, colloquium, University of Maryland, October 1996.

Lectures on parity violating electron scattering, Hampton University Graduate School on Nuclear Physics, June 1996.

Strange quarks in the proton, colloquium, Harvard University, April 1996.

Strange quarks in the proton, colloquium, Villanova University, November 1995.

Strange quarks in the proton, colloquium, Temple University, November 1995.

Neutral currents and strange quarks in the proton, seminar, Rutgers University, October 1995.

Neutral currents and strange quarks in the proton, seminar, University of Maryland, October 1995.

Probing the nucleon with electron scattering, High School Teacher's Day lecture, APS-DNP Meeting, Bloomington, IN, September 1995.

Neutral currents and strange quarks in the proton, seminar, Service de Physique Nucléaire, CEN-Saclay, France, June 1995.

Neutral currents and strange quarks in the proton, seminar, SUNY Stonybrook, NY, April 1995.

Parity violation and strangeness in the proton, graduate seminar, University of Maryland, Spring 1994.

Parity violation and strangeness in the proton, seminar, George Washington University, Washington, DC, November 1993.

Parity violation and strangeness in the proton, seminar, University of Washington, Seattle, WA, April 1993.

Probing the nucleon with electron scattering, special seminar, Lake Forest College, Lake Forest, IL, November 1992.

Strange currents in the proton, colloquium, Argonne National Lab, Argonne, IL, November 1992.

Parity violation and strangeness in the proton, colloquium, Harvey Mudd College, Claremont, CA, October 1992.

Parity violation and strangeness in the proton, colloquium, Arizona State University, Tempe, AZ, September 1992.

Parity violation and strangeness in the proton, seminar, Lawrence Livermore National Lab, Livermore, CA, April 1992.

Parity violation and strangeness in the proton, seminar, Carnegie Mellon University, Pittsburgh, PA, April 1992.

Parity violation and strangeness in the proton, seminar, Ohio State University, Columbus, OH, April 1992.

Parity violation and strangeness in the proton, colloquium, California State University, Long Beach, CA, March 1992.

Parity violation and strangeness in the proton, seminar, Rensselaer Polytechnic Institute, Troy, NY, February 1992.

Parity violation and strangeness in the proton, seminar, University of Maryland, College Park, MD, February 1992.

Parity violation and strangeness in the proton, colloquium, California State University, Los Angeles, CA, February 1992.

Probing the structure of the neutron with polarized  $^3\text{He}$ , seminar, University of Colorado, Boulder, CO, May 1991.

Neutral weak form factors of the proton, lunch time talk, Bates Laboratory, Middleton, MA, February 1991.

Neutral weak form factors of the proton, seminar, University of California at Los Angeles, Los Angeles, CA, December 1990.

Neutral weak form factors of the proton, colloquium, University of New Hampshire, Durham, NM, October 1990.

Probing the nucleon with electron scattering, seminar, Carleton College, Northfield, MN, April 1990.

A recoil proton spectrometer for medium energy  $(\gamma, n)$  measurements, seminar, CEBAF, Newport News, VA, June 1990.

A recoil proton spectrometer for medium energy  $(\gamma, n)$  measurements, seminar, University of Massachusetts, Amherst, MA, March 1989.

A recoil proton spectrometer for medium energy  $(\gamma, n)$  measurements, seminar, Argonne National Laboratory, Argonne, IL, February 1989.

A recoil proton spectrometer for medium energy  $(\gamma, n)$  measurements, seminar, Indiana University Cyclotron Facility, Bloomington, IN, February 1989.

Good resolution  $(\gamma, n)$  measurements at medium energy, seminar, Rensselaer Polytechnic Institute, Troy, NY, March 1988.

Good resolution  $(\gamma, n)$  measurements at medium energy, seminar, California Institute of Technology, Pasadena, CA, March 1988.

### Contributed papers

*Only those given by me or members of my group below, 30 others in which I was a collaborator.*

Data analysis of the parity violating elastic proton asymmetry of the first commissioning of the  $G^0$  experiment, Jianglai Liu for the  $G^0$  Collaboration, Bull. Am. Phys. Soc. **48(8)**, 36 (2003).

Calibration of constant fraction discriminators (CFDs) and development of cryostat exit detector (CED) system for the  $G^0$  parity experiment, Kristin Kiriluk for the  $G^0$  Collaboration, Bull. Am. Phys. Soc. **48(8)**, 55 (2003).

The SAMPLE experiment, E. J. Beise, Particles and Nuclei International Conference (PANIC), MIT, Boston, MA, June 1990.

Parity-violation and strangeness in the proton, E. J. Beise, Gordon Conference on QCD in Nuclear Physics, Tilton, NH, August 1991.

A high power liquid hydrogen target for parity violating electron scattering, E. Beise for the SAMPLE Collaboration, Bull. Am. Phys. Soc. **40**, 1008 (1995).

$Q^2$  dependence of the ratio of  $\Lambda$  to  $\Sigma^0$  final states in  $H(e, e'K^+)Y$ , Richard M. Mohring for the TJNAF E93-018 Collaboration, Bull. Am. Phys. Soc. **42**, 979 (1996).

Results of density studies of the TJNAF Hall C cryotarget, K. Gustafsson for the TJNAF Hall C Collaboration, Bull. Am. Phys. Soc. **42**, 1043 (1996).

The Hall A Cryo-target at Jefferson Laboratory, Lars Ewell for the TJNAF Hall A Collaboration, Bull. Am. Phys. Soc. **42**, 1043 (1996).

Results from the SAMPLE experiment at MIT-Bates, E. J. Beise, Bull. Am. Phys. Soc. **42**, 1666 (1997).

Measurements of the tensor moments  $t_{20}$ ,  $t_{21}$ , and  $t_{22}$  in the momentum transfer range of  $4.1 \text{ fm}^{-1}$  to  $6.8 \text{ fm}^{-1}$  in elastic electron deuteron scattering, Kenneth Gustafsson for the JLAB  $t_{20}$  Collaboration, submitted to the Centennial Meeting of the APS in Atlanta, GA, April 20-26, 1999.

Recent results from the SAMPLE experiment, Damon T. Spayde for the SAMPLE Collaboration, Bull. Am. Phys. Soc. **44**, 33 (1999).

Monte Carlo studies for helium experiments in Hall A at JLab, T. Horn, B. Beise, and G. Chang, Bull. Am. Phys. Soc. **45**, 22 (2000).

Measuring the neutral weak form factors in e-N scattering: the  $G^0$  Experiment, Paul King for the  $G^0$  Collaboration, Bull. Am. Phys. Soc. **46**, 91 (2001).

#### **Books or contributions to edited books**

Parity Violation in Electron Scattering, edited by E. J. Beise and R. D. McKeown (World Scientific Publishing, 1990).

#### **Contracts, grants, and proposals**

Co-Principal Investigator: Proposal to the National Science Foundation (Experimental Nuclear Physics Research Program, 2002-05 (\$2,369,404), P. G. Roos, E. J. Beise, H. Breuer, C. C. Chang, J. J. Kelly, and N. S. Chant.

REU Supplement to NSF Grant PHY-9971819 (Research Experiences for Undergraduates) for Experimental Nuclear Physics Research Program (\$27,000), N. S. Chant, E. J. Beise, C. C. Chang, H. Breuer, J. J. Kelly, and P. G. Roos.

Co-Principal Investigator: National Science Foundation Grant 9971819 (Experimental Nuclear Physics Research Program, 1999-2001 (\$1,907,346), N. S. Chant, E. J. Beise, H. Breuer, C. C. Chang, J. J. Kelly, and P. G. Roos.

Principal Investigator: University of Illinois at Urbana-Champaign Grant for Construction of Target Control System, 1998-2000 (\$50,000).

Co-Principal Investigator: NSF International Programs Grant INT-9603224 (Electromagnetic Structure of the Deuteron) (\$15,000 for 1997-99), E. J. Beise and R. Gilman (Rutgers U.).

REU Supplement to NSF Grant PHY-9513924 (Research Experiences for Undergraduates) for Experimental Nuclear Physics Research Program (\$4,000 for 1996), N. S. Chant, E. J. Beise, C. C. Chang, H. Breuer, J. J. Kelly, and P. G. Roos.

Co-Principal Investigator: National Science Foundation Grant PHY-9513924 (Experimental Nuclear Physics Research Program, 1996-1998) (\$650,000 for 1996; \$600,000 for 1997; \$600,000 for 1998), E. J. Beise, P. G. Roos, C. C. Chang, N. S. Chant, H. Breuer, and J. J. Kelly.

NSF Young Investigator Award, 1994-99 (\$231,377).

Principal Investigator: CEBAF Grant 94 P4986, Fabrication and Delivery of One (1) Cryogenic Target Vacuum Tank Lid (\$5,450 for 1994).

Co-Principal Investigator: Supplement to NSF Grant PHY-9229690 (Career Advancement Award/Beise) for Experimental Nuclear Physics Research Program (\$50,000 for 1993-95), P. G. Roos, N. S. Chant, C. C. Chang, H. Breuer, E. J. Beise, and J. J. Kelly.

Co-Principal Investigator: REU Supplement to NSF Grant PHY-9220690 (Research Experiences for Undergraduates) for Experimental Nuclear Physics Research Program (\$4,000 for 1993; \$4,000 for 1994; \$4,000 for 1995), P. G. Roos, N. S. Chant, C. C. Chang, H. Breuer, H. D. Holmgren, E. J. Beise, and J. J. Kelly.

Co-Principal Investigator: National Science Foundation Grant PHY-9220690 A1 (Experimental Nuclear Physics Research Program) (1993-95; \$1,950,000) with P. G. Roos, C. C. Chang, N. S. Chant, H. Breuer, and J. J. Kelly.

Co-Principal Investigator: National Science Foundation Grant PHY-8914714 (Hydrogen Target and Cerenkov Detectors for Parity-Violation Experiments; Caltech) (July 1990-June 1992; \$640,000) with R. McKeown.

## Teaching Experience

*not including Doctoral Dissertation research*

1994	Spring	Physics 161H	General Physics - Discussion
1994	Fall	Physics 161	Mechanics and Particle Dynamics
1995	Spring	Physics 262	Vibrations, Waves, Heat, and Electricity
1995	Fall	Physics 161	Mechanics and Particle Dynamics
1996	Spring	Physics 262	Vibrations, Waves, Heat, and Electricity
1996	Fall	Physics 161	Mechanics and Particle Dynamics
1997	Spring	Physics 262	Vibrations, Waves, Heat, and Electricity
1997	Fall	Faculty Research Grant	
1998	Spring	Physics 395	Advanced Experiments for Majors
1998	Fall	Physics 395	Advanced Experiments for Majors (Devel).
1999	Spring	Physics 405	Advanced Experiments for Majors
1999	Fall	Physics 115	Inquiry Physics
2000	Spring	Physics 405	Advanced Experiments for Majors
2000	Fall	Sabbatical	
2001	Spring	Physics 275	Mechanics Lab for Majors
2001	Fall	Physics 276	Electricity and Magnetism Lab for Majors
2002	Spring	Physics 275	Mechanics Lab for Majors
2002	Fall	Physics 276	Electricity and Magnetism Lab for Majors
		Physics 748	Nuclear Physics Seminar
2003	Spring	Physics 275	Mechanics Lab for Majors
2003	Fall	Physics 276	Electricity and Magnetism Lab for Majors
		Physics 748	Nuclear Physics Seminar
2004	Spring	Physics 171	Introductory Physics for Majors
		Physics 748	Nuclear Physics Seminar
	Fall	Physics 174	Introductory Laboratory for Majors
2005	Spring	on leave at National Science Foundation	
		Physics 748	Nuclear Physics Seminar
	Fall	Physics 174	Introductory Laboratory for Majors
		Physics 748	Nuclear Physics Seminar
2006	Spring	on leave at National Science Foundation	



## Departmental Service at the University of Maryland

2005-2006	Campus Middle States Review Committee, Standard 12 (General Education)
2003-2005	Chair, Campus CORE (general education) Committee
2003-2005	Campus Educational Affairs Committee
2002-2005	Campus Senate
2002-	Physics Dept. Undergraduate Education Committee
2002-04	GRE Mechanics Review sessions
2002-	Departmental Computer Committee
1994-2000, 2003-	Academic Advisor to incoming Graduate students
2001-2003	Campus Programs, Curriculum and Courses Committee
2002-2004	Department EEOC officer
2001-	Advisory Board to Maryland RISE program (College of Engineering)
2000-	Organizer for Physics Dept. Undergraduate Open Houses
1997-2003	Physics Majors Laboratory Committee
1998-00	Physics Appointment, Promotion, and Tenure Committee
1996-2004	Academic advisor to undeclared major undergraduate students
1996-	Academic advisor to physics majors
1995-1997	Physics Dept. Salary Advisory Committee