CURRICULUM VITA

Barry Graham Ritchie

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1 Education

- Doctor of Philosophy, Department of Physics and Astronomy, University of South Carolina, Columbia, SC - December 1979
 Dissertation: Experimental and Theoretical Investigations of the Decays of ²⁰⁶Fr and ²⁰⁸Fr Advisor: Frank T. Avignone, III
- Master of Science, Department of Physics and Astronomy, University of South Carolina, Columbia, SC - June 1978 Thesis: *Internal Conversion Electron Studies in* ¹⁸⁷Au and ¹⁸⁷Hg Advisor: Frank T. Avignone, III
- Bachelor of Science, cum laude, Appalachian State University, Boone, NC June 1975
 Major: Physics. Minor: Education (with NC Public School Teaching Certification)

2 Employment

2.1 Current Employment

Interim Dean, New College of Interdisciplinary Arts and Sciences, ASU, 2006 to present Professor of Physics, Department of Physics, ASU, 1996 to present

2.2 Previous Employment

Chair, Department of Physics and Astronomy, ASU, 2000-2006
Associate Chair, Department of Physics and Astronomy, ASU, 1994-2000
Associate Professor of Physics, Department of Physics and Astronomy, ASU, 1990-1996
Visiting Associate Professor of Physics, Department of Physics, University of Virginia,
Charlottesville, VA 1990-1991

Assistant Professor of Physics, ASU, 1984-1990

Research Associate, Department of Physics, University of Maryland, College Park, MD, 1984-85

Postdoctoral Fellow, Department of Physics and Astronomy, University of South Carolina, 1979-83

Laboratory Graduate Participant, UNISOR, Oak Ridge Natl. Laboratory, Oak Ridge, TN, 1977-79

Science Teacher, Project Upward Bound, Appalachian State University, 1975

3. Research and Teaching Interests

My research interests have involved investigations of neutron deficient heavy nuclei created in heavy ion interactions, pion interactions with nuclei, pion beta decay, neutrino oscillations, and baryon spectroscopy using electromagnetic probes. All these seek to understand the fundamental interactions between the basic constituents of matter. My teaching interests span the physics major curriculum, subatomic physics, and the constructive engagement between science and religion.

4. Professional Affiliations

American Physical Society Jefferson Lab Users' Group

5. Teaching

5.1 Teaching Awards and Recognitions

Dean's Quality Teaching Award, College of Liberal Arts and Sciences, ASU - 1996 Outstanding Teaching Award, Department of Physics and Astronomy, ASU - 1990 Honor Student Teacher, Appalachian State University, 1975

5.2 Courses Taught

| (F = Fall Semester, S = Spring Semester) | |
|---|--|
| PHY 121 -University Physics I: Mechanics(F 1989) | |
| PHY 131 -University Physics II: Electricity and Magnetism(S 1990) | |
| PHY 321 -Classical Mechanics I(F 1986, F 1987, F 1988) | |
| PHY 322 -Classical Mechanics II(S 1987, S 1988, S 1989) | |
| PHY 331 -Electricity and Magnetism I(F 1992, F 1993, F 1994, F 1995) | |
| PHY 332 -Electricity and Magnetism II(S 1993, S 1994, S 1995, S 1996) | |
| PHY 334 -Advanced Laboratory I (F 1997, S 1998, F 1998, S 1999, S 2000) | |
| PHY 462 -Nuclear Physics(S 1989, S 1996, S 1997) | |
| PHY 494 -Special Topics: Synthesis of the Sciences (F 1996) | |
| PHY 494 - Special Topics: Topics in Nuclear and Particle Physics(F 2006,S 2007) | |
| PHY 561 -Nuclear Physics I(F 1985, F 1999) | |
| PHY 562 -Nuclear Physics II(S 1986) | |

(I have also continually mentored students since Fall 1986 in one or more of the undergraduate and graduate research omnibus courses.)

5.3 Graduate Student Mentoring

5.3.1 Dissertations and theses chaired

- Michael Robert Dugger, Doctor of Philosophy; Physics; December 2001 Dissertation: *Photoproduction of Eta*(549) and *Eta*(958) by 0.7-1.8 GeV Photons
- David Lawrence, Doctor of Philosophy, Physics; May 1998 Dissertation: *Initial Tests of the Pion Beta Decay Detector*
- Bernard George Ofenloch, Doctor of Philosophy, Physics; May 1996 Dissertation: A Study of the Isovector Spin Flip Mechanism of the Pion-Nucleus Interaction
- Robert Anthony Giannelli, Doctor of Philosophy, Physics; May 1995
 Dissertation: Pion Absorption below 135 MeV
- Joffa Michele Applegate, Master of Science, Physics; June 1992 Thesis: A Study of Isospin Symmetry Breaking in ¹²C with 50 MeV Pions

5.3.2 Current graduate students

James Patrick Ball, Doctor of Philosophy; expected graduation: August 2007 Patrick Collins, Doctor of Philosophy; expected graduation: August 2008

5.4 Undergraduate and High School Student Mentoring

5.4.1 Honors' thesis

• Susan K. Beckman, Bachelor of Science with Honors, May 1993 Thesis: *Coherent η and η' Photoproduction from Deuterium*

5.4.2 Other undergraduate students who have worked with my research group for one semester or more

Todd Averett Jon Koliner (current)

Eric Beck Aaron Miles
James Beck Eric Podany
James DeKorse Laura Rocha
Barbara Franklin Laura Sparks

Andrew Gamalski (current) Corey Stephenson (current)

Miguel Garcia (current) Ross Tucker

Austin Godber Aaron Vanderpool John Jacob Jamie Winterton

5.4.3 High school students who have worked with my group one semester or more

Andrew Gamalski Kyle Sinclair Geoff Tuttle

6. Service

6.1 Departmental Service

(listed alphabetically)

Associate Chair, 1994-2000

Awards Committee, 1993-94

Budget and Policy Committee, 1987-88 (elected), ex-officio 2000-present

Committee on Committees, (elected) 1985-87, 1989-90

Colloquium Committee, 1985-87 (chair 1985-86)

Faculty secretary, 1986-87

Graduate Examination Committee, 1985-87

New Physics Curriculum Implementation Team, 1991-94

Personnel Committee, (elected) 1991-93

Physical Sciences H-Wing Building Design, 1985-87

Physics Majors Experience Committee (ad hoc), 1985-89

Physics Research Experience for Undergraduates Program (Director), 1992-98

Society of Physics Students faculty advisor, 1986-90

SSC Stimulated Growth Committee (ad hoc), 1987-88

Undergraduate advisor, 1994-96

Undergraduate Program Committee, 1989-90, 1991-93 (chair)

Search Committees:

Condensed matter experimentalist, 1985-86

Medium energy experimentalist, 1987-89

Department Chair Search Committee, 1993-94

6.2 College Service

Chair, Kinesiology Department Chair Search, 2003-04

CLAS Academic Standards Committee, 1993-95

6.3 University Service

Member, Social Embeddedness Steering Committee, 2004-present

Chair, Academic Chairs and Directors' Council, 2004-2006

University Club Advisory Board, 2003-2005

Search Committee, Associate Dean for Academic Personnel, CLAS 2002-03

Academic Professionals Task Force, 2003-04

Search Committee, Associate Dean, Graduate College, 2000-01

OVPR Cost Policy Implementation Study Group, 1997-99

Graduate Council, 1996-98

Department of Physics and Astronomy Heptennial Review Committee, 1996-98

6.4 Professional Service

Spokesman, LAMPF experiments 567, 811, 828, 948, 966, 1085, 1117, 1226, and 1227 Spokesman, CEBAF experiments 91-008, 94-008

Low Energy Pion Channel Working Group Chair, LAMPF Users' Group, 1982, 1985, 1990-94

Technical Advisory Panel Representative, Hall B, CEBAF, 1990-92

Member, Board of Directors, LAMPF Users' Group, Inc., 1992-94

LAMPF Experimental Facilities Panel member, 1990-94

CEBAF Large Acceptance Spectrometer Collaboration: Chair, Real Photon Physics Working Group, CLAS Coordinating Committee, 1995-99

Zone Councilor, National Council, Society of Physics Students, 1988-95

Member, External Visiting Committee, Physics Department, New Mexico State University

Proposal reviewer for National Science Foundation, Department of Energy,

Research Corporation Reviewer, Physical Review and Physical Review Letters

7. Research

7.1 Summary in Numbers

- 132 papers in refereed journals
- 29 invited talks, colloquia, and seminars
- 126 contributed papers at topical conferences
- 227 abstracts or talks at APS and similar meetings
- 20 colloquia or seminars
- 19 grants and contracts awarded
- \$3,257,110 total credited research funding

7.2 Research Personnel Supervised (excluding students)

Michael Dugger, Assistant Research Professor, 2002-present Eugene Pasyuk, Research Professor, 1999-present

7.3 Publications in Refereed Journals

- "Decay of high-spin isomers in ^{150,151,152}Ho," K.S. Toth, C.R. Bingham, H.K. Carter, B.G. Ritchie, D. C. Sousa, and D.R. Zolnowski, Phys. Rev. C 20, 298-306 (1979).
- 2. **"A new high temperature ISOL ion source,"** R.L. Mlekodaj, E.H. Spejewski and B.G. Ritchie, Nucl. Instrum. and Meth. **171**, 451-455 (1980).
- 3. "Electron and positron decays of ²⁰⁶Fr and ²⁰⁸Fr and the energy levels of ²⁰⁶Rn and ²⁰⁸Rn," B.G. Ritchie, F.T. Avignone III, H.K. Carter, R.L. Mlekodaj, and E.H. Spejewski, Phys. Rev. C **23**, 1717-1725 (1981).
- 4. "Alpha decay properties of ^{205,206,207,208}Fr; identification of ^{206m} Fr," B.G. Ritchie, K.S. Toth, H.K. Carter, R.L. Mlekodaj, and E.H. Spejewski, Phys. Rev. C 23, 2342-2344 (1981).
- "π + d → p+p at 20 to 65 MeV," B.G. Ritchie, R. D. Edge, D.J. Malbrough, B.M. Preedom, F.E. Bertrand, E.E. Gross, F.E. Obenshain, J.R. Wu, M. Blecher, K. Gotow, R.L. Burman, R. Carlini, M.E. Hamm, M.J. Leitch, and M.A. Moinester, Phys. Rev. C 24, 552-560 (1981).
- "Pion-nucleus inelastic scattering at 80 MeV," M. Blecher, K. Gotow, R. Ng, R.L. Burman, R. Carlini, S. Dam, M.V. Hynes, M.J. Leitch, V. Sanberg, R. Auble, F.E. Bertrand, E.E. Gross, F.E. Obenshain, J. Wu, G. Blanpied, B.M. Preedom, B.G. Ritchie, W. Bertozzi, M.A. Kovash, and R.P. Redwine, Phys. Rev. C 25, 2554-2562 (1982).
- 7. "Precision mass difference measurements in light rubidium and krypton isotopes utilizing beta endpoints," D.M. Moltz, K.S. Toth, F.T. Avignone III, H. Noma, B.G. Ritchie, and B.D. Kern, Phys. Lett. B 113, 16-20 (1982).
- "The determination of relative signs of neutron and proton transition matrix elements for the ³⁴S(0⁺ → 2⁺₂) transition," A.M. Bernstein, R.A. Miskimen, B. Quinn, S.A. Wood, M.V. Hynes, G.S. Blanpied, B.G. Ritchie, and V.R. Brown, Phys. Rev. Lett. 49, 451-454 (1982).
- "π +d → p+p at 65 to 140 MeV," B.G. Ritchie, G.S. Blanpied, R.S. Moore, B.M. Preedom, K. Gotow, R.C. Minehart, J. Boswell, G. Das, H.J. Ziock, N.S. Chant, P.G. Roos, W.J. Burger, S. Gilad, and R.P. Redwine, Phys. Rev. C 27, 1685-1692 (1983).
- "\(\pi^+\)p scattering from 65 to 140 MeV," B.G. Ritchie, R.S. Moore, B.M. Preedom, K. Gotow, R. C. Minehart, G. Das, H.J. Ziock, and W.J. Burger, Phys. Lett. B 125, 128-132 (1983).
- 11. " $\pi d \rightarrow pp$ below 330 MeV," B.G. Ritchie, Phys.

- Rev. C 28, 926-928 (1983).
- "DWIA (p,p') predictions using electromagnetically determined densities: comparison with experiments," R.A. Miskimen, A.M. Bernstein, B. Quinn, S.A. Wood, M.V. Hynes, G.S. Blanpied, B.G. Ritchie, and V.A. Brown, Phys. Lett. B 131, 26-30 (1983).
- 13. "Isospin effects in π⁺ carbon elastic scattering at 65 and 80 MeV," M. Blecher, K. Gotow, R.L. Burman, M.V. Hynes, M.J. Leitch, N.S. Chant, L. Rees, P.G. Roos, F.E. Bertrand, E.E. Gross, F.E. Obershain, T.P. Sjoreen, G.S. Blanpied, B.M. Preedom, and B.G. Ritchie, Phys. Rev. C 28, 2033-2041 (1983).
- 14. "Pion-nucleus elastic scattering at 80 MeV," M.J. Leitch, R.L. Burman, R. Carlini, S. Dam, V. Sandberg, M. Blecher, K. Gotow, R. Ng, R. Auble, F.E. Bertrand, E.E. Gross, F.E. Obenshain, J. Wu, G.S. Blanpied, B.M. Preedom, B.G. Ritchie, W. Bertozzi, M.V. Hynes, M.A. Kovash, and R.P. Redwine, Phys. Rev. C 29, 561-568 (1984).
- 15. "The role of pion absorption on quasi-deuterons in ¹²C(π⁺,2p)," B.G. Ritchie, N.S. Chant, and P.G. Roos, Phys. Rev. C 30, 969-972 (1984).
- 16. "Excitation of the ground state rotational band in ²⁰Ne by 0.8 GeV Protons," G.S. Blanpied, G.A. Balchin, G.E. Langston, B.G. Ritchie, M.L. Barlett, G.W. Hoffmann, J.A. McGill, M.A. Franey, M. Gazzaly, and B.H. Wildenthal, Phys. Rev. C 30, 1233-1237 (1984).
- 17. "Reply to 'Role of pion absorption on quasideuterons in 12 C(π^+ ,2p)'," B.G. Ritchie, N.S. Chant, and P.G. Roos, Phys. Rev. C **32**, 334-335 (1985).
- 18. "Isospin effect in π⁺¹⁴C elastic scattering at 50 MeV," C-S. Mishra, B.M. Preedom, B.G. Ritchie, R.S. Moore, M. Blecher, K. Gotow, R.L. Burman, M.V. Hynes, E. Piasetsky, N.S. Chant, P.G. Roos, F.E. Bertrand, T. Sjoreen, F.E. Obenshain, and E.E. Gross, Phys. Rev. C 32, 995-998 (1985).
- "Elastic scattering of 0.8 GeV protons from the non-zero-spin nuclei ¹³C and ¹⁴N," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, G.W. Hoffmann, J.A. McGill, M.A. Franey, and M. Gazzaly, Phys. Rev. C 32, 2152-2154 (1985).
- 20. "Multipole moments for ¹²C coupled channels analysis of 0.8 and 1.0 GeV proton scattering," G.S. Blanpied, C.S. Mishra, and B.G. Ritchie, Phys. Rev. C 33, 1527-1530 (1986).
- 21. "The ⁵⁸Ni(π⁺,2p) reaction at 160 MeV," W.J. Burger, E. Beise, S. Gilad, R.P. Redwine, P.G. Roos,

- N.S. Chant, H. Breuer, G. Ciangaru, J.D. Silk, G.S. Blanpied, B.M. Preedom, B.G. Ritchie, M. Blecher, K. Gotow, D.M. Lee, and H. Ziock, Phys. Rev. Lett. **57**, 58-61 (1986).
- 22. "Elastic scattering of 65 MeV positive and negative pions from nickel isotopes," B. Fick, M. Blecher, K. Gotow, D. Wright, R.L. Boudrie, R.L. Burman, D. Mack, B.G. Ritchie, P.G. Roos, J. Escalante, C.S. Mishra, B.M. Preedom, and S. Whisnant, Phys. Rev. C 34, 643-647 (1986).
- 23. "Excitation of isobaric analog states of ¹⁶⁵Ho by pion single charge exchange," J.N. Knudsen, J.R. Comfort, R.A. Gianelli, B.G. Ritchie, D. Rothenberger, D. Pocanic, S.S. Hanna, J.D. Bowman, H.W. Baer, A.G. Bergmann, P.A. Heusi, S. Hoibraten, R.A. Loveman, S.H. Rokni, H.L. Crannell, D.I. Sober, W.J. Fickinger, and H. Marshak, Phys. Rev. C 35, 1382-1387 (1987).
- 24. "(π̄,p) reactions at low excitation energy," G.S. Blanpied, C.S. Mishra, G.S. Adams, B.M. Preedom, C.S. Whisnant, J.-P. Egger, C.L. Morris, H. Breuer, N.S. Chant, B.G. Ritchie, B.H. Wildenthal, B. Hoistad, and B.A. Brown, Phys. Rev. C 35, 1567-1569 (1987).
- 25. "Indication of pionic atom anomalies in pion-nucleus elastic scattering," D.H. Wright, M. Blecher, K. Masutani, R.L. Boudrie, R.L. Burman, M.J. Leitch, M. Alsolami, G. Blanpied, J.A. Escalante, C.S. Mishra, G. Pignault, B.M. Preedom, C.S. Whisnant, and B.G. Ritchie, Phys. Rev. C 35, 2258-2261 (1987).
- 26. "Elastic scattering of 30 MeV positive and negative pions from nickel isotopes," D.H. Wright, M. Blecher, B.G. Ritchie, R.L. Boudrie, R.L. Burman, M.J. Leitch, M. Alsolami, G. Blanpied, J.A. Escalante, C.S. Mishra, G. Pignault, B.M. Preedom, and C.S. Whisnant, Phys. Rev. C 36, 1472-1478 (1987).
- 27. "Elastic scattering of 19.5 and 30 MeV negative pions from ¹²C," D.H. Wright, M. Blecher, R. L. Boudrie, R.L. Burman, M.J. Leitch, B.G. Ritchie, D. Rothenberger, Z. Weinfeld, M. Alsolami, G. Blanpied, J.A. Escalante, C.S. Mishra, G. Pignault, B.M. Preedom, and C.S. Whisnant, Phys. Rev. C 36, 2139-2142 (1987).
- 28. "Inelastic pion scattering from ¹³C at 65 MeV," J.H. Mitchell, J.T. Brack, R.J. Peterson, R.A. Ristinen, J.L. Ullmann, R.L. Boudrie, B.G. Ritchie, and J.A. Escalante, Phys. Rev. C **37**, 710-718 (1988).
- 29. "Elastic scattering of 19.5 and 30 MeV positive and negative pions from ⁴⁰Ca," D.H. Wright, M. Blecher, B.G. Ritchie, D. Rothenberger, R.L. Burman, Z. Weinfield, J.A. Escalante, C.S. Mishra, and C.S. Whisnant, Phys. Rev. C 37, 1155-1160 (1988).

- "Elastic and inelastic scattering of 0.8 GeV protons from ⁴⁰Ar," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, R.W. Ferguson, J.A. McGill, and B.H. Wildenthal, Phys. Rev. C 37, 1304-1306 (1988).
- 31. **"50 MeV pion inelastic scattering to the 1**⁺ **doublet in** ¹²C," B.G. Ritchie, J.A. Escalante, G.S. Adams, M. Al-Solami, N. Lasheen, G. Pignault, B.M. Preedom, C.S. Whisnant, J.H. Mitchell, R.J. Peterson, R.L. Boudrie, and D.H. Wright, Phys. Rev. C **37**, 1347-1349 (1988).
- 32. "Elastic and inelastic scattering of 0.8 GeV polarized protons from ²⁴Mg and ²⁶Mg," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, G.W. Hoffmann, J.A. McGill, E.C. Milner, K.W. Jones, S.K. Nanda, R. deSwiniarski, Phys. Rev. C 37, 1987-1999 (1988).
- 33. "Elastic scattering of 50 MeV pions from 58,60,64Ni," C.S. Mishra, B. Fick, M. Blecher, W. Burger, R.L. Burman, G. Ciangaru, J. Escalante, K. Gotow, M.V. Hynes, B.M. Preedom, B.G. Ritchie, C.S. Whisnant, and D. Wright, Phys. Rev. C 38, 1316-1321 (1988).
- 34. "Elastic and inelastic scattering of 0.8 GeV protons from ²⁰Ne and ²²Ne," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, R.W. Ferguson, G.W. Hoffmann, J.A. McGill, and B.H. Wildenthal, Phys. Rev. C 38, 2180-2186 (1988).
- 35. "Inelastic scattering of pions by ¹⁰B," B. Zeidman, D.F. Geesaman, P. Zupranski, R.E. Segel, G. C. Morrison, C. Olmer, G.R. Burleson, S.E. Greene, R.L. Boudrie, C.L. Morris, L.W. Swenson, G.S. Blanpied, B.G Ritchie, and C.L. Harvey Johnstone, Phys. Rev. C 38, 2251-2258 (1988).
- 36. "Coupled channels analysis of positive pion inelastic scattering from ²⁸Si at 50 MeV," C.S. Whisnant, G.S. Adams, C.S. Mishra, J.A. Escalante, M.A. Al-Solami, B.M. Preedom, B.G. Ritchie, and D.H. Wright, Phys. Rev. C 39, 1935-1943 (1989).
- 37. "Charged particle multiplicities following pion absorption on ⁶Li," R.D. Ransome, V.R. Cupps, S. Dawson, R.W. Fergerson, A. Green, C.L. Morris, J. A. McGill, J.R. Comfort, B.G. Ritchie, J. Tinsley, J. D. Zumbro, R.A. Loveman, P.C. Gugelot, D.L. Watson, and C.F. Moore, Phys. Rev. Lett. 64, 372-375 (1990).
- 38. ""O(π*,2p) reaction at 165 MeV," S.D. Hyman, D.J. Mack, H. Breuer, N.S. Chant, F. Khazaie, B.G. Ritchie, P.G. Roos, J.D. Silk, P.-A. Amaudruz, Th.S. Bauer, C.H.Q Ingram, G.S. Kyle, D. Renker, R.A. Schumacher, U. Sennhauser, and W.J. Burger, Phys. Rev. C 41, 409-413 (1990).
- 39. "50 MeV π^+ and π^- scattering from ¹²C," B.G. Ritchie, J.A. Escalante, B.M. Preedom, G.S. Adams,

- M. Al-Solami, N. Lasheen, C.-S. Mishra, G. Pignault, C.S. Whisnant, J.H. Mitchell, R.J. Peterson, R.L. Boudrie, and D.H. Wright, Phys. Rev. C **41**, 1668-1673 (1990).
- 40. "Pion elastic and inelastic scattering from ²⁴Mg and ²⁶Mg," G.S. Blanpied, J. Hernandez, C.S. Mishra, W.K. Mize, C.S. Whisnant, B.G. Ritchie, C.L. Morris, S.J. Seestrom-Morris, C. Fred Moore, P.A. Seidl, R.A. Lindgren, B.H. Wildenthal, and R. Gilman, Phys. Rev. C 41, 1625-1636 (1990).
- 41. "The reaction ⁵⁸Ni(π⁺,pp) at 160 MeV," W.J. Burger, E. Beise, G.S. Blanpied, M. Blecher, H. Breuer, N.S. Chant, G. Ciangaru, S. Gilad, K. Gotow, D.M. Lee, B.M. Preedom, R.P. Redwine, B.G. Ritchie, P. G. Roos, J.D. Silk, and H. Ziock, Phys. Rev. C 41, 2215-2228 (1990).
- 42. "Analyzing powers for the reaction π p→ π n at T_{π-} = 161 MeV," J.J. Goergen, J.R. Comfort, T. Averett, J. Dekorse, B. Franklin, B.G. Ritchie, J.R. Tinsley, G. Kyle, B. Berman, G. Burleson, K. Cranston, A. Klein, J.A. Faucett, J.J. Jarmer, J.N. Knudson, S. Penttila, N. Tanaka, B. Brinkmoeller, D. Dehnhard, Y.F. Yen, S. Hoibraten, H. Breuer, B.S. Flanders, M.A. Khandaker, D.L. Naples, D. Zhang, M.L. Barlett, G.W. Hoffmann, and M. Purcell, Phys. Rev. D 42, 2374-2376 (1990).
- 43. "Systematics of pion absorption on ⁶Li," R.D. Ransome, V.R. Cupps, S. Dawson, R.W. Fergerson, A. Green, C.L. Morris, J.A. McGill, J.R. Comfort, B.G. Ritchie, J. Tinsley, J.D. Zumbro, R.A. Loveman, P.C. Gugelot, D.L. Watson, and C.F. Moore, Phys. Rev. C 42, 1500-1518 (1990).
- 44. "Total and differential cross sections for π⁺d → p + p below 21 MeV," B.G. Ritchie, R.C. Minehart, T.D. Averett, G.S. Blanpied, K. Giovanetti, B.M. Preedom, D. Rothenberger, L.C. Smith, and J.R. Tinsley, Phys. Rev. Lett. 66, 568-571 (1991).
- 45. "Neutron deformation in ¹⁶⁵Ho," J.N. Knudson, J.D. Bowman, S.I. Pentilla, J.R. Comfort, B.G. Ritchie, J. Goergen, D. Mathis, J. Tinsley, S.S. Hanna, B. King, D. Pocanic, R.A. Loveman, L.S. Fritz, and N.S. Dixon, Phys. Rev. Lett. **66**, 1026-1030 (1991).
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- 121. "Single π^+ electroproduction on the proton in the first and second resonance regions at 0.25 GeV² < $Q^2 < 0.65 \text{ GeV}^2$," H. Egiyan, *et al.* (The CLAS Collaboration), Phys. Rev. C 73, 025204-1 to 025204-32 (2006).
- 122. "Measurement of two- and three-nucleon short-range correlations probabilities in nuclei," K. S. Egiyan, *et al.* (The CLAS Collaboration), Phys. Rev. Lett. **96**, 082501-1 to 035212-6 (2006).
- 123. "Electron scattering from high-momentum neutrons in deuterium," A. V. Klimenko, *et al.* (The CLAS Collaboration), Phys. Rev. C **73**, 035212-1 to 035212-14 (2006).
- 124. "Differential cross sections for $pp \rightarrow K^+ + Y$ for Λ and Σ^{θ} hyperons," R. Bradford, *et al.* (The CLAS Collaboration), Phys. Rev. C 73, 035202-1 to 035202-36 (2006).
- 125. "Measurement of the deuteron structure function F_2 in the resonance region and the evaluation of its moments," M. Osipenko, *et al.* (The CLAS Collaboration), Phys. Rev. C 73, 045205-1 to 045205-22 (2006).
- 126. "Search for the Θ^+ pentaquark in the reaction of $\gamma d \rightarrow p \ K K^+ n$," B. McKinnon, et al. (The CLAS Collaboration), Phys. Rev. Lett. **96**, 212001-1 to 212001-6 (2006).
- 127. "Search for the Θ⁺ pentaquark in the reaction of yd→ΛnK⁺ reaction measured with the CLAS spectrometer," S. Niccolai, et al. (The CLAS Collaboration), Phys. Rev. Lett. 97, 032001-1 to 032001-6 (2006).
- 128. "Measurement of deeply virtual Compton scattering with a polarized-proton target," S. Chen, et al. (The CLAS Collaboration), Phys. Rev. Lett. 97, 072001-1 to 072001-6 (2006).

- 129. "Search for Θ^+ pentaquark in the reactions $p \to K^0 K^+ n$ and $p \to K^0 K^0 p$," R. De Vita *et al.* (The CLAS Collaboration), Phys. Rev. D 74, 032001-1 to 032001-14 (2006).
- 130. "Search for Θ^{++} pentaquarks in the exclusive reaction $p \to K^+K^-p$," V. Kubarovsky, *et al.* (The CLAS Collaboration), Phys. Rev. Lett. **97**, 102001-1 to 102001-6 (2006).
- 131. "Measurement of the $N \to \Delta^+$ (1232) transition at high-momentum transfer by π^0 electroproduction," M. Ungaro, *et al.* (The CLAS Collaboration), Phys. Rev. Lett. **97**, 112003-1 to 112003-6 (2006).
- 132. "Measurement of the x- and Q_2 -dependence of the asymmetry A_I on the nucleon," K.V. Dharmawardane, *et al.* (The CLAS Collaboration), Phys. Lett. B **641**, 11-17 (2006).

7.4 Proceedings Edited and Published

1. *Hadronic Probes and Nuclear Interactions*, edited by J. R. Comfort, W. R. Gibbs, and B. G. Ritchie, AIP Conference Proceedings No. 138 (AIP, New York, 1985).

7.5 Invited Talks at Conferences

- 1. **"Experimental Nuclear Physics with Pions."** Invited talk at the SACS-AAPT Annual Meeting, Columbia, South Carolina, April 8, 1982
- 2. "Recent Results on $\pi d \rightarrow pp$." Invited talk at the Fifth Nordic Meeting on Intermediate and High Energy Nuclear Physics, Geilo, Norway, January 9-15, 1983.
- 3. "The Scruncher: Status, Results, and Prospects." Invited talk at the LAMPF Users' Group Inc. Meeting, Los Alamos, NM, August 1991.
- 4. "Recent Results with the LAMPF BGO Ball." Invited talk at the Fifth International Oberjoch Meeting on Pion-Nuclear Physics, Oberjoch, Germany, August 30-September 4, 1993.
- 5. " η and η ' Studies at CEBAF." Invited talk at the CEBAF/NMSU Workshop on the Structure of the η , Las Cruces, NM, March 11-15, 1996.
- 6. "Studies of η and η ' Photoproduction from Nucleons in Hall B." Invited talk at the TJNAF Meson Photoproduction Workshop, Newport News, VA, June 11, 1997.
- 7. "Photo-and Electroproduction of η and η ' Mesons with CLAS." Invited talk at the NSTAR 2000 Workshop, Thomas Jefferson National Laboratory, Newport News, VA, February 16, 1999.
- 8. "Photoproduction of η and η ' Mesons." Invited talk at the Workshop on New Aspects of Quark Nuclear Physics with Polarized Photons, Honolulu, HI, February 18, 2003.
- 9. "Recent results on η and η' photoproduction from the proton." Invited talk at the Second Symposium on Threshold Meson Production in pp and pd Interaction, Jagellonian University, Krakow, Poland, June 1-3, 2004.

7.6 Colloquia and Seminars

- 1. "Overview of the Universities Isotope Separator at Oak Ridge-UNISOR", United States Coast Guard Academy, June, 1979.
- 2. "Overview of the Universities Isotope Separator at Oak Ridge-UNISOR", Westminster College (PA), May 29, 1979.
- 3. "Experimental and Theoretical Investigations of the Decays of ²⁰⁶Fr and ²⁰⁸Fr", University of South Carolina, February 7, 1980.
- 4. "Experimental and Theoretical Investigations of the Decays of ²⁰⁶Fr and ²⁰⁸Fr", Bloomsburg State College, April 30, 1982.
- 5. "Recent Results on πd→pp", Vrije University, Amsterdam, The Netherlands, January 17, 1983.
- 6. "Recent Results on $\pi d \rightarrow pp$ ", Karlsruhe Nuclear Reseach Center, Karlsruhe, West Germany, January 19, 1983.

- 7. "Recent Results on πd→pp", Swiss Institute for Nuclear Research, Villigen, Switzerland, January 20, 1983.
- 8. "Recent Results on $\pi d \rightarrow pp$ ", University of Neuchatel, Neuchatel, Switzerland, January 24, 1983.
- 9. "Recent Results on $\pi d \rightarrow pp$ ", Center for Nuclear Studies, Paris, January 26, 1983.
- 10. "Recent Results on $\pi d \rightarrow pp$ ", University of Mississippi, February 10, 1983.
- 11. "Recent Results on $\pi d \rightarrow pp$ ", University of Maryland, January 19, 1984.
- 12. "Recent Results on $\pi d \rightarrow pp$ ", Arizona State University, April 7, 1984.
- 13. "πd→pp: Results and Fundamentals", New Mexico State University, February 15, 1990.
- 14. "πd→pp: Results and Fundamentals", University of South Carolina, March 15, 1990.
- 15. "Low Energy Pion Studies of the 1⁺Doublet in ¹²C", University of Virginia, October 18, 1990.
- 16. "Photoproduction of Eta Mesons", Arizona State University, October 11, 1991.
- 17. "Photoproduction of Eta Mesons", Catholic University of America, April 2, 1992.
- 18. "Physics with Tagged Photons", Arizona State University, April 29, 1993.
- 19. "Studies in Pion Physics", Northern Arizona University, March 24, 1994
- 20. "First Physics Results with Real Photons at Jefferson Laboratory", Arizona State University, January 28, 1999.

7.7 Contributed Papers at Topical Conferences

- "The π +d → p+p Reaction with T_π =20 to 65 MeV," B.G. Ritchie, F.E. Bertrand, M. Blecher, R.L. Burman, R. Carlini, R.D. Edge, K. Gotow, E.E. Gross, M.E. Hamm, M.J. Leitch, D.J. Malbrough, M.A. Moinester, F.E. Obenshain, B.M. Preedom, and J.R. Wu, Proc. of the International Conference on Nuclear Physics, Aug. 24-30, 1980, Berkeley, CA, LBL-11118, p. 712.
- 2. "π⁺ and π⁻ Elastic Scattering from ¹²C, ⁴⁸Ca, ⁹⁰Zr, ²⁰⁸Pb at 80 MeV," M.J. Leitch, M. Blecher, R. Auble, F.E. Bertrand, G. Blanpied, R.L. Burman, R. Carlini, S.H. Dam, W. Gaskin, K. Gotow, E.E. Gross, M.V. Hynes, M.A. Kovash, F.E. Obenshain, B.M. Preedom, R.P. Redwine, B. Ritchie, V.D. Sandberg, and J. Wu, Proc. of the International Conference on Nuclear Physics, Aug. 24-30, 1980, Berkeley, CA, LBL-11118, p. 716.
- "Giant Resonance Excitation of ⁴⁰Ca with π⁺ and π⁻ at 80 MeV," M. Blecher, R. Auble, F.E. Bertrand, G. Blanpied, R.L. Burman, R. Carlini, S.H. Dam, W. Gaskin, K. Gotow, E.E. Gross, M.V. Hynes, M.A. Kovash, M.J. Leitch, F.E. Obenshain, B.M. Preedom, R.P. Redwine, B. Ritchie, V.D. Sandberg, J. Wu, Proc. of the International Conference on Nuclear Physics, Aug. 24-30, 1980, Berkeley, CA, LBL-11118, p. 264.
- 4. "80 MeV π Nucleus Elastic Scattering," M. Blecher, R. Auble, F.E. Bertrand, W. Bertozzi, G. Blanpied, R.L. Burman, R. Carlini, S. Dam, W. Gaskin, K. Gotow, E.E. Gross, M.V.Hynes, M.A. Kovash, M. J. Leitch, F.E. Obenshain, B.M. Preedom, R.P. Redwine, B.G. Ritchie, V. Sandberg, and J. Wu, IXth International Conference on High Energy Physics and Nuclear Structure, Versailles, France, July 6-10, 1981, p. 288.
- "80 MeV π Nucleus Inelastic Scattering," R. Ng, M. Blecher, R. Auble, F.E. Bertrand W. Bertozzi, G. Blanpied, R.L. Burman, R. Carlini, S. Dam, W. Gaskin, K. Gotow, E.E. Gross, M.V. Hynes, M.A. Kovash, M.J. Leitch, F.E. Obenshain, B.M. Preedom, R.P. Redwine, B.G. Ritchie, V. Sandberg, and J. Wu, IXth International Conference on High Energy Physics and Nuclear Structure, Versailles, France, July 6-10, 1981, p. 303.
- "Giant Resonance Excitation in ⁴⁰Ca with 80 MeV π⁺," M. Blecher, R. Auble, F.E. Bertrand W. Bertozzi, G. Blanpied, R.L. Burman, R. Carlini, S. Dam, W. Gaskin, K. Gotow, E.E. Gross, M.V. Hynes, M.A. Kovash, M.J. Leitch, F.E. Obenshain, B.M. Preedom, R.P. Redwine, B.G. Ritchie, V. Sandberg, and J. Wu, IXth International Conference on High Energy Physics and Nuclear Structure, Versailles, France, July 6-10, 1981, p. 306.

- "Inelastic Pion Scattering from ¹⁰Band ¹¹B," D.F. Geesaman, B. Zeidman, P. Zupranski, R.E. Segal, C. L. Morris, R.L. Boudrie, S. Greene, B.G. Ritchie, G. S. Blanpied, C.L. Harvey, L.W. Swenson, and G.C. Morrison, IXth International Conference on High Energy Physics and Nuclear Structure, Versailles, France, July 6-10, 1981, p. 302.
- "π +d → p+p at 20 to 65 MeV," B.G. Ritchie, R.D. Edge, D.J. Malbrough, B.M. Preedom, F.E. Bertrand, E.E. Gross, F.E. Obenshain, J.R. Wu, M. Blecher, K. Gotow, R.L. Burman, R. Carlini, M.E. Hamm, M.J. Leitch, and M.A. Moinester, IXth International Conference on High Energy Physics and Nuclear Structure, Versailles, France, July 6-10, 1981, p. 334.
- "Precision Mass Measurements Using Beta Endpoints," D.M. Moltz, K.S. Toth, F.T. Avignone III, H. Noma, B.G. Ritchie, and B.D. Kern, in Proceedings of the Fourth International Symposium on Nuclei Far from Stability, Ed. by P.G. Hansen and O.B. Nielsen (CERN, Geneva, 1981), p. 141.
- 10. "Elastic Scattering of π[±] from ¹²C, ¹³C, and ¹⁴C at 80 MeV," M. Blecher, K. Gotow, G.S. Blanpied, B.M. Preedom, B.G. Ritchie, F.E. Bertrand, E.E. Gross, F.E. Obenshain, T.P. Sjoreen, N.S. Chant, L. Rees, P.G. Roos, R.L. Burman, M.V. Hynes, and M. J. Leitch, International Conference on Nuclear Structure, Amsterdam, The Netherlands, Aug. 30-Sept. 3, 1982.
- 11. "Excitation of the Ground State Rotational Band in ²⁰Ne, ²⁴Mg, and ²⁶Mg by 0.8 GeV Polarized Protons," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, G.W. Hoffmann, J.A. McGill, E.C. Milner, C. Glashausser, K.W. Jones, S.K. Nanda, R. deSwiniarski, M.A. Franey, M. Gazzaly, and B.H. Wildenthal, International Conference on Nuclear Structure, Amsterdam, The Netherlands, Aug. 30-Sept. 3, 1982.
- 12. "π⁺ Ni Elastic Scattering-Sensitivity to the Neutron Radius," B. Fick, M. Blecher, K. Gotow, D. Wright, G. Blanpied, J.A. Escalante, C-S. Mishra, B. M. Preedom, R.L. Burman, M. Hynes, G. Ciangaru, N. Chant, P. Roos, B.G. Ritchie, F.E. Bertrand, E.E. Gross, F. Obenshain, and W. Burger, Particles and Nuclei International Conference, Heidelberg, West Germany, July 30-August 3, 1984.
- 13. "Inelastic Pion Scattering from ²⁴Mg and ²⁶Mg," G.S. Blanpied, J. Hernandez, C.S. Mishra, S. Whisnant, C. Fred Moore, P.A. Seidl, R. Gilman, C.L. Morris, R.A. Lindgren, B.G. Ritchie, S.J. Seestrom-Morris, B.H. Wildenthal, Particles and Nuclei International Conference, Heidelberg, West Germany, July 30-August 3, 1984.

- 14. "Elastic Pion Scattering from 14C at 50 MeV," C.S. Mishra, G.S. Blanpied, B.G. Ritchie, R.S. Moore, M. Blecher, K. Gotow, R.L. Burman, M.V. Hynes, E. Piasetsky, N.S. Chant, P.G. Roos, F.E. Bertrand, T. Sjoreen, F.E. Obenshain, and E.E. Gross, Particles and Nuclei International Conference, Heidelberg, West Germany, July 30-August 3, 1984.
- 15. "Proton Scattering from ²²Ne at 0.8 GeV," G.S. Blanpied, B.G. Ritchie, M.L. Barlett, R.W. Ferguson, G.W. Hoffman, B.H. Wildenthal, and J.A. Mc-Gill, Particles and Nuclei International Conference, Heidelberg, West Germany, July 30-August 3, 1984.
- 16. "Indication of Pionic Atom Anomalies in Elastic Pion Scattering in Calcium at 19.5 and 30 MeV," D.H. Wright, M. Blecher, B.G. Ritchie, D. Rothenberger, R.L. Boudrie, R.L. Burman, Z. Weinfeld, J.A. Escalante, C.S. Mishra, and C.S. Whisnant, Particles and Nuclei International Conference, Kyoto, Japan.
- 17. "Elastic Scattering of Positive and Negative Pions from ^{64,60,58}Ni at 30 MeV," D.H. Wright, M. Blecher, K. Masutani, R. Seki, B.G. Ritchie, R.L. Boudrie, R.L. Burman, M.J. Leitch, M. Alsolami, J.A. Escalante, C.S. Mishra, G. Pignault, B.M. Preedom, and C.S. Whisnant, Particles and Nuclei International Conference, Kyoto, Japan.
- 18. "Asymmetry Measurements of Pion Elastic Scattering from Polarized ¹³C," Yi-Fen Yen, B. Brinkmoeller, S. Chakravarti, D. Dehnhard, S.M. Sterbenz, Yi-Ju Yu, Brian Berman, G.R. Burleson, K. Cranston, A. Klein, G.S. Kyle, R. Alarcon, T. Averett, J.R. Comfort, J. Goergen, B. Ritchie, J.M. Tinsley, G. W. Hoffmann, K. Johnson, M. Purcell, H. Ward, A. Williams, J.A. Faucett, S.J. Greene, J.J. Jarmer, J.A. McGill, C.L. Morris, S. Pentilla, N. Tanaka, E. Insko, R. Ivie, J.M. O'Donnell, D. Smith, S. Hoibraten, and M. Khandaker, Particles and Nuclei International Conference XII, June 25-29, 1990, Cambridge, MA (1990).
- "Positive Pion Absorption in ⁶Li from 50 to 200 MeV," R.D. Ransome, V.R. Cupps, S. Dawson, R.W. Fergerson, A. Green, C.L. Morris, J.A. McGill, J.R. Comfort, B.G. Ritchie, J. Tinsley, R.A. Loveman, J.D. Zumbro, C. Fred Moore, P.C. Gugelot, and D.L. Watson, Particles and Nuclei International Conference XII, June 25-29, 1990, Cambridge, MA (1990).
- 20. "A Study of the Reaction ⁶Li(π⁺, 2p) around the Δ(3,3) Resonance," D. Zhang, H. Breuer, N.S. Chant, B.S. Flanders, S.D. Hyman, M.A. Khandakar, D.J. Mack, P.G. Roos, J.D. Silk, K. Dhuga, G.S. Kyle, M. Wang, P.-A. Amaudruz, C.H.Q. Ingram, R.A. Schumacher, U. Sennhauser, J. Jacob, B.G. Ritchie, D. Rothenberger, J. McDonald, and D.A. Williams, Particles and Nuclei International Confer-

- ence XII, June 25-29, 1990, Cambridge, MA (1990).
- 21. "Analyzing Power Measurements for the (π⁺,π⁰) Reaction on Polarized ¹³C," J. Gorgen, J. Comfort, T. Averett, J. DeKorse, B. Franklin, B. Ritchie, J. Tinsley, G. Kyle, B. Berman, G.R. Burleson, K. Cranston, A. Klein, J.A. Faucett, J. Jarmer, J.N. Knudson, S. Pentilla , N. Tanaka, B. Brinkmoeller, D. Dehnhard, Y.F. Fen, H. Breuer, M.A. Khandakar, D.L. Naples, B.S. Flanders, D. Zhang, M. Barlett, G.W. Hoffmann, M. Purcell, and S. Høibråten, Paris-90 Conference, July 9-13, 1990, Paris, Colloque de Physique 6, 583 (1990).
- 22. "Pion Elastic Scattering from Polarized ¹³C in the Energy Region of the [3,3] Resonance," Yi-Fen, B. Brinkmoller, D. Dehnhard, S.M. Sterbenz, Yi-Ju Yu, Brian Berman, G.R. Burleson, K. Cranston, A. Klein, G.S. Kyle, R. Alarcon, T. Averett, J.R. Comfort, J. Goergen, B. Ritchie, and J.R. Tinsley, G.W. Hoffmann, K. Johnson, M. Purcell, H. Ward, A. Williams, J.A. Faucett, S.J. Greene, J. Jarmer, J.A. McGill, C.L. Morris, S. Pentilla, N. Tanaka, H.T. Fortune, E. Insko, R. Ivie, J.M. O'Donnell, D. Smith, S. Hoibraten, M. Khandakar, and S. Chakravarti, Paris-90 Conference, July 9-13, 1990, Colloque de Physique 51, 587 (1990).
- 23. "Pion Absorption on Light Nuclei," R.D. Ransome, C.L. Morris, D.L. Watson, M.K. Jones, B.G. Ritchie, J.A. McGill, and C.F. Moore, in Pions in Nuclei, edited by E. Oset, M.J. Vicente Vacas, and G. Garcia Recio, (World Scientific, New Jersey, 1992) 486-494.
- 24. "Evidence for Physics Beyond the Quasi-Deuteron Model in Pion Absorption," C.L. Morris, R.D. Ransome, B.G. Ritchie, J.D. Zumbro, D.L. Watson, and C.F. Moore, in Pions in Nuclei, edited by E. Oset, M.J. Vicente Vacas, and G. Garcia Recio, (World Scientific, New Jersey, 1992) 495-504.
- 25. "Overview of Hall B Photon Tagger," Barry G. Ritchie, in "CEBAF 1992 Summer Workshop", edited by Franz Gross and Roy Holt, AIP Conference Proceedings No. 269, (American Institute of Physics, New York, 1993), 547-550.
- 26. "Photoproduction of Eta Mesons from Threshold to 1.2 GeV," M. Rigney, M. Breuer, P. Hoffman-Rothe, G. Anton, J. Arends, G. Berrier-Rosin, W. Beulertz, G. Blanpied, A. Bock, M. Bruns, J.-P. Didelez, C. Djalali, G. v. Edel, R. Frascaria, R. Maass, K. Helbing, J. Hey, G. Noldeke, E. Hourani, M. Mayers, B. Preedom, B. Ritchie, L. Rosier, B. Saghai, M. Schumacher, F. Smend, S. Whisnant, and B. Zucht, in *Few Body Problems in Physics*, edited by Franz Gross, AIP Conference Proceedings No. 334, (American Institute of Physics, New York, 1995), 510-511.
- 27. "Photoproduction of Eta Mesons from Threshold to 1.2 GeV," P. Hoffman-Rothe, E. Hourany, M.

- Breuer, J.-P. Didelez, M. Rigney, J. Ajaka, G. Anton, J. Arends, G. Berrier-Rosin, W. Beulertz, G. Blanpied, A. Bock, M. Bruns, G. v. Edel, R. Frascaria, K. Helbing, J. Hey, M. Krebeck, R. Maass, G. Noldeke, B. Preedom, B. Ritchie, L. Rosier, B. Saghai, M. Schumacher, F. Smend, S. Whisnant, and B. Zucht, in *Mesons and Light Nuclei* '95, edited by J. Adam, J. Dobes, R. Mach, M. Sotona, and J. Dolejsi, Few-Body Systems Supplementum 9 (Springer-Verlag, New York, 1995), 223-226.
- 28. "Electromagnetic Excitation of Baryon Resonances and the CLAS N* Program," Volker Burkert and the CLAS Collaboration, N* Workshop, Trento, Italy, May, 1998.
- 29. "Search for Missing Resonances in $\gamma p \to X \to \omega p$," Franz Klein and the CLAS Collaboration, Baryons 98, University of Bonn, Bonn, Germany, September 22-26, 1998.
- 30. "Preliminary Angular Distribution in π^0 Electroproduction in the Delta Region at Q^2 Higher than 0.5 (GeV/c)²," Marco Battaglieri and the CLAS Collaboration, Baryons 98, University of Bonn, Bonn, Germany, September 22-26, 1998.
- 31. "Real Photon Experiments at JLab Using the Hall B Photon Tagger," William J. Briscoe, Catalina Cetina, Sasha A. Phillips, and the CLAS Collaboration, Nuclear and Particle Physics Workshop, Dubrovnik, Croatia, November 3-10, 1998.
- 32. **"First Preliminary Results from CLAS,"** Mauro Taiuti and the CLAS Collaboration, Perspectives in Hadronic Physics, Trieste, Italy, May 10-14, 1999.
- 33. "Recent Results from CLAS," William Hersman and the CLAS Collaboration, 4th Workshop on Electromagnetically Induced Two Hadron Emission, Grenada, Spain, May 26-29, 1999.
- 34. "Strangeness Photoproduction with CLAS at Jefferson Lab," Reinhard Schumacher and the CLAS Collaboration, PANIC99: XV International Conference on Particles and Nuclei, Uppsala, Sweden, June 10-16, 1999.
- 35. "Hyperon Electroproduction with CLAS," Mac Mestayer and the CLAS Collaboration, PANIC99: XV International Conference on Particles and Nuclei, Uppsala, Sweden, June 10-16, 1999.
- 36. "Electro- and Photoproduction of ω(738) Mesons Using CLAS at Jefferson Lab," Joe Manak and the CLAS Collaboration, PANIC99: XV International Conference on Particles and Nuclei, Uppsala, Sweden, June 10-16, 1999.
- 37. "CLAS-A Large Acceptance Spectrometer for Intermediate Energy Electromagnetic Nuclear Physics," Will Brooks and the CLAS Collaboration, PANIC99: XV International Conference on Particles and Nuclei, Uppsala, Sweden, June 10-16, 1999.

- 38. "Studies of N* Resonances with Electromagnetic and Pion Probes," Steve Dytman and the CLAS Collaboration, Leptons and Hadrons as Complementary Probes of Strong QCD, Juelich, Germany, June 17-19, 1999.
- "The Photoproduction of Vector Mesons at High t," Claude Marchand and the CLAS Collaboration, Leptons and Hadrons as Complementary Probes of Strong QCD, Juelich, Germany, June 17-19, 1999.
- 40. **"Topics of Few-Body Physics at J-Lab,"** William Hersman and the CLAS Collaboration, KEK-Tanashi International Symposium on Hadron and Nuclear Physics with Electromagnetic Probes, Tokyo, Japan, October 25-27, 1999.
- 41. "Nucleon Structure Functions," A. Skabelin and the CLAS Collaboration, Proceedings of CIPANP 2000 - 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000; ed. Zoreh Parsa and William J. Marciano, American Institute of Physics Conference Proceedings No. 549 (AIP, Melville, New York, 2000).
- 42. "Photoproduction of Vector Mesons off the Proton and Large Transfer," J.M. Laget and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- 43. **"Photo- and Electro-production of Vector Mesons,"** J.M. Laget and the CLAS Collaboration, CI-PANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- 44. "Eta Electroproduction in the S₁₁(1535) Region with CLAS," J.A. Mueller and the CLAS Collaboration, Proceedings of CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000; ed. Zoreh Parsa and William J. Marciano, American Institute of Physics Conference Proceedings No. 549 (AIP, Melville, New York, 2000), pp. 255-258.
- 45. "Single Pion Electroproduction from CLAS," K. Joo and the CLAS Collaboration, Proceedings of CI-PANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000; ed. Zoreh Parsa and William J. Marciano, American Institute of Physics Conference Proceedings No. 549 (AIP, Melville, New York, 2000), pp. 434-437.
- 46. "Inclusive Asymmetries and Spin Structure Function Integrals for the Deuteron," S. Kuhn and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.

- 47. "Direct Observation of Two Nucleon Correlations in Nuclei with CLAS," L. Weinstein and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- "Searching for NN correlations in Helium using CLAS," B. Zhang and the CLAS Collaboration, CIPANP 2000 - 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- "Study of Short Range Correlations in Nuclei with CLAS," K. Egiyan and the CLAS Collaboration, CIPANP 2000 - 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- "Measurement of the Polarized Beam Asymmetry on Nuclei with CLAS," M. Holtrop and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- "Photoproduction of the φ(1020) Meson Near Threshold," D.J. Tedeschi and the CLAS Collaboration, CIPANP 2000 - 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- 52. "Exclusive π Production from Polarized Deuterons," M. Bektasoglu and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
- 53. "Spin structure functions of the Deuteron," J. Yun and the CLAS Collaboration, CIPANP 2000 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Quebec, Canada; May 22-28, 2000.
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- 156. "CLAS Measurement of σ_{LT} " in the Resonance Region," K. Joo and the CLAS Collaboration, Bull. Amer. Phys. Soc. 48, No. 2, 138 (2003).
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- 165. **"Kaon Electroproduction using CLAS at Jefferson Lab,"** P. Ambrozewicz and the CLAS Collaboration, Bull. Amer. Phys. Soc. **48**, No. 2, 184 (2003).
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- 203. "Comparison Between Simulations and Data for Neutral Meson Photoproduction on the Proton,"
 F. Mahmood, M. Vineyard and the CLAS Collaboration, Bull. Amer. Phys. Soc. 50, No. 6, 130 (2005).
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- 217. "The search for the \$\phi(1860)^-\$ pentaquark with CLAS," M. Holtrop, H. Egiyan, J. Langheinrich and the CLAS Collaboration, Bull. Amer. Phys. Soc. 51, No. 6, 28 (2006).
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- 225. "Precision measurement of the pair production cross section in the Jefferson Lab PrimEx experiment," A. Teymurazyan and the PrimEx Collaboration, Bull. Amer. Phys. Soc. **51**, No. 6, 79 (2006).
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- 227. "Out-of-plane measurements of the fifth structure function of the deuteron," G. Gilfoyle and

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7.9 Grants, Awards and Contracts Received

- "Experimental Nuclear Physics with Pions," B.G. Ritchie, Principal Investigator, ASU Faculty Grant-In-Aid, January 1, 1985-December 31, 1985, \$3,000.
- "Experimental Nuclear Physics with Intermediate Energy Probes," B.G. Ritchie, Principal Investigator, J.R. Comfort, Co-Principal Investigator, National Science Foundation Grant PHY-8418848 to Arizona State University, March 1, 1985-August 31, 1986, \$48,000 (individual PI credit not apportioned).
- 3. "Research in Experimental Medium Energy Physics," J.R. Comfort, Principal Investigator, B.G. Ritchie, Co-Principal Investigator, National Science Foundation Grant PHY-8520513 to Arizona State University, March 1, 1986-February 28, 1989, \$407,667 (individual PI credit not apportioned).
- 4. "A Computer System for the Experimental Medium Energy Program at ASU," B.G. Ritchie, Principal Investigator, J.R. Comfort, Co-Principal Investigator, National Science Foundation Grant PHY8617121 to Arizona State University, March 1, 1985-August 31, 1986, \$43,500 (individual PI credit not apportioned).
- "Fundamental Interactions in the Nuclear Medium," J.R. Comfort, Principal Investigator, B.G. Ritchie, Co-Principal Investigator, National Science Foundation Grant PHY-8520513 to Arizona State University, March 1, 1989-August 30, 1991, \$641,164 (individual PI credit not apportioned).
- 6. "Nuclear Physics Mentorship," B.G. Ritchie, Principal Investigator, Coalition to Increase Minority Doctorates, August 15, 1991-December 31, 1991, \$250.
- "Physics REU Program at Arizona State University," B.G. Ritchie, Principal Investigator, National Science Foundation Grant DMR-9200055 to Arizona State University, March 1, 1992-September 30, 1995, \$165,000.
- 8. "Intermediate Energy Physics at Arizona State University," B.G. Ritchie, Principal Investigator, National Science Foundation Grant PHY-9122560 to Arizona State University, May 1, 1992-October 31, 1995, \$261,000.
- 9. **"Graduate Mentorship in Nuclear Physics,"** B.G. Ritchie, Principal Investigator, Coalition to Increase Minority Degrees project F92GLA004, August 15, 1992-December 31, 1992, \$500.
- 10. **"Photonuclear Physics at CEBAF,"** B.G. Ritchie, Principal Investigator, Continuous Electron Beam Accelerator Facility contract, \$12,320.

- 11. "Meson Physics at Arizona State University," B.G. Ritchie, Principal Investigator, National Science Foundation Grant PHY-9503918 to Arizona State University, May 1, 1995-April 30, 1996, \$252,000.
- 12. "Physics REU Program at Arizona State University," B.G. Ritchie, Principal Investigator, Robert Culbertson, Co-PI, National Science Foundation Grant DMR-9531053 to Arizona State University, January 1, 1996-December 31, 1997, \$88,000.
- "ASU Participation in Palo Verde Neutrino Oscillation Experiment," B.G. Ritchie, Principal Investigator, ASU internal funds (DoPA, CLAS, OVPRSI) of \$250,000.
- 14. "Meson Physics at Arizona State University," B.G. Ritchie, Principal Investigator, National Science Foundation Grant PHY-9870259 to Arizona State University, June 15, 1998-November 30, 2001, \$275,000.
- "Bridge Faculty Agreement with Thomas Jefferson National Accelerator Facility," B.G. Ritchie, Principal Investigator, Thomas Jefferson National Accelerator Facility contract, \$90,299.
- "Meson Physics at Arizona State University,"
 B.G. Ritchie, Principal Investigator, National Science Foundation Grant PHY-0098785 to Arizona State University, August 1, 2001-July 31, 2004, \$345.001.
- 17. **"Meson Physics at Arizona State University,"**B.G. Ritchie, Principal Investigator, National Science Foundation Grant PHY-0354820 to Arizona State University, August 15, 2004-July 31, 2007, \$323,000.
- 18. **"Photonuclear Physics at Jefferson Lab,"** B.G. Ritchie, Principal Investigator, Thomas Jefferson National Accelerator Facility contract to Arizona State University, June 16, 2004-August 30, 2004, \$14,344.
- "Photonuclear Physics at Jefferson Lab," B.G. Ritchie, Principal Investigator, Thomas Jefferson National Accelerator Facility contract to Arizona State University, June 16, 2005-August 15, 2006, \$15,065.
- "Facing the Challenges of Transhumanism: Religion, Science, and Technology," H. Tirosh-Samuelson, Principal Investigator, B. G. Ritchie, Co-Principal Investigator (with others), Metanexus Institute grant to Arizona State University, August 16, 2006-August 15, 2010, \$440,000 (credited to BGR: \$22,000).