Gerald A. Miller CURRICULUM VITAE Feb. 27, 2020

Name: Gerald Alan Miller web page http://faculty.washington.edu/miller/

Address: Physics Department, 351560 206-543-2995
University of Washington
Seattle, Washington 98195 Marital Status: Married, two offspring

Date and Place of birth: March 20, 1947, New York City

Education:

Bronx High School of Science	1963
City College of New York	1967
Massachusetts Institute of Technology, M.S.	1968
Massachusetts Institute of Technology, Ph.D.	1972

Employment:

University of Washington, Seattle, Washington 98195	1985 - present 1980 - 1985 1975 - 1980	Professor Associate Professor Research Assistant Professor
University of Adelaide, Adelaide, Australia	2003, 2010, 2011, 2017	Visiting Professor
Hebrew University of Jerusalem	2018	Visitor
Tel Aviv University	2018	Visitor
Argonne National Laboratory	2018	Visitor
MIT	2017	Sabbatical Visitor
Jefferson Laboratory	2000-2003	Program Advisory Comm.
Jefferson Laboratory	2004, 2010	Visiting Theorist
Lawrence Berkeley Laboratory	2004, 2011	Visiting Theorist
Brookhaven National Laboratory	2004	Visiting Theorist
ECT*, Trento	2003	Visiting Theorist
Stanford Linear Accelerator Center	1997	Visiting Theorist
TRIUMF	1988 - 1989	Visiting Staff Member
University of Illinois	1989	Visiting Research Professor
CERN, Geneva, Switzerland	1982 - 1983	Paid Scientific Associate
Los Alamos National Laboratory	1986	Visiting Staff Member
Los Alamos National Laboratory	1979-1982	Prog. Advis. Comm
Carnegie-Mellon University	1972 - 1975	Research Physicist

Honors and Awards:

CCNY: New York Regents Scholarship, New York College Teaching Fellowship

CCNY: Dean's List, Magna Cum Laude, Phi Beta Kappa, Sigma Xi, Three Varsity Letters Lacrosse

Graduate Fellowship at MIT

Fellow, American Physical Society

Fellow, American Association for the Advancement of Science

Designated as Outstanding Referee by the American Physical Society, initial set 2008

Physics Dep't Outstanding Graduate Instructor Award, 2016

Southgate Fellowship, Adelaide University 2017-2018

Sahoul Fellow, Sackler Inst. of Advanced Studies, 2018, Tel-Aviv University

The Batsheva de Rothschild Fellowship Hebrew University 2018

Outside Professional Positions:

Program Advisory Committee, Los Alamos National Laboratory, 1979-1982
Science Policy Advisory Committee, Los Alamos National Laboratory, 1983-1986
Editorial Board Member, Physical Review C, 1986-1988
Program committee, DNP, American Physical Society, 1985-1987
Member, APS Task Force to review *Reviews of Modern Physics*, 1992-1993
Organizer, national Institute for Nuclear Theory programs or workshops, 1990-92; 1994; 1996; 1998(2); 2001, 2004; 2009, 2012, 2013
Organizer, ECT* (Trento Workshops), 2000, 2012, 2013
National Science Foundation, Nuclear Theory panel member, 1997, 2003, 2012
Physics Today, panel member for book reviews, 1997-2002
Program Advisory Committee member for Jefferson Laboratory 2000-2003
Managing Editor, International Journal Modern Physics E, 2004-2006
Program Committee Member for many international meetings and workshops
USA Correspondent for Nuclear Physics News International, 2004-2012
Jefferson Laboratory S & T Review Committee 2006
Chairman, Jefferson Laboratory EBAF review committee, 2009
Member, DOE panel to review Nuclear Theory in National Laboratories, 2009
Member of DNP of American Physical Society Thesis Award, 2011
Member Executive Committee of the Division of Nuclear Physics of the APS, 2010-2012
Chairman, Committee to Establish the Herman Feshbach Prize of the APS 2011-
Chairman Committee to Select the First Herman Feshbach Prize winner (2013)
Member, DOE committee, review Super Big-Bite Spectrometer at JLab (2013)
Physics Ph. D. Program reviewer for Florida International University 2015
Member, DNP Fellowship committee, 2015, 2016
Convener, Conference on Intersections Between Nuclear and Particle Physics, 2018
National Science Foundation,Atomic, Molecular and Optical -Theory panel member

Research Contracts:

• Co-principal investigator on DOE contract since 1975. PI since 1997. Mentored many.

• One of three authors originating a first draft proposal that ultimately led to the formation of the INT

• DOE contract for bridge faculty position at U.W. with Jefferson Lab 1997-2001.

• U.S. Civilian Research & Development Foundation (CRDF) grant to study Light Front Dynamics" 2005-2006

• NIH grant to study Protein Interaction Networks 2005-2007

• Grant from Argonne National Laboratory, 2018

• DOE Grants from PNNL 2019, 2020

Administrative Positions

Department of Physics Executive Committee 1998-2003

UW Faculty Council on Student Affairs 1996-1999

Chairman of Physics Qualifying Exam Committee, several years

Chairman, UW Committee on Admissions and Standards, 1996

Chairman, Member Physics Faculty Search Committee several years

Physics Graduate Program Advisor 1999-2004

Chairman Physics Graduate Committee 2005-2007

Chairman and Member (2010-) UW Faculty Council on Research (FCR) 2005-2009,2009-2014

Chairman and Member UW FCR Subcommittee on Classified/Restricted Research 2005-2006

Member UW Faculty Senate Committee on Interdisciplinary Research 2007

Member UW Faculty Senate Executive Committee 2010-2011

Member UW Research Advisory Board 2010-2011

Member UW Advisory Board for Overhead 2010-2011

Member UW Intellectual Property Advisory Committee 2012-present

Member UW Senate Special Committee on Intellectual Property 2012-present

Member UW Presidents Advisory Committee:Enterprise Risk Management 2010, 2012-2014

Member UW Presidents Advisory Committee to select the UW Annual Faculty Lecturer 2013, 2014

Member UW Steering Committee on the F& A (Overhead) Rate 2012-2014

UW Ph. D. Graduates, year approximate

C-Y Cheung 1980, M. Morgan 1986, G. Crawford 1987, C. Benesh 1989

D. Driscoll 1989, H. Jung 1991, W. Greenberg 1996, D. Makovoz 1996

J. J. Karakoski 1999, J. R. Cooke 2002, B. Tiburzi. 2003, J. R. Smith. 2006

M. Luzum 2008, D. R. Bolton 2011, G. T. Howell 2013, Y-S. Liu 2017

Summary of Main Research Accomplishments (Numbers refer to publication list of > 300 refereed articles)

My work has been cited more than 15,500 times (h number = 62) according to Google Scholar Citations, and more than12,630 times , h=56 on hepinspire.
http://scholar.google.com/citations?user=3br2__AAAAAJ

- Provided the formal and computational tools necessary to analyze pion–nucleus reactions[3,6,13,14]. Wrote the program used to analyze virtually all of LAMPF pion-nucleus inelastic scattering data, clarified the role of nucleon-nucleon correlations in pion-nucleus double charge exchange reactions, and introduced what became known as the Miller-Spencer correlation function used in calculations of parity-violating nuclear matrix elements[13].
- Originated and applied the cloudy bag model of hadrons [39,42,47,71] a model that explained the neutron electric form factor, the true nature of the Delta resonance, and the M1 radiative decays of mesons. Prediction [89] of the rate for pseudovector D meson to decay into a pseudoscalar D and a pion verified in a 2000 CLEO experiment.
- Unveiled and computed the charge symmetry breaking part of the neutron-proton force that was subsequently observed in experiments at TRIUMF and IUCF in a series of papers:[4,27,36,57,87,103,201] Introduced the quark-based definition (up-down quark mass difference) of charge symmetry[103]. Participated in the first experimental observation of the $dd \to \alpha\pi^0$ reaction[201]. The most recent work on charge symmetry breaking in pion production has recently been highlighted in Science News, Nature, CERN Courier, and Physics World. It was also rated the #49 top science story in 2003 by Discover magazine.
- Showed that the nuclear Drell Yan process could be used to probe the nuclear antiquark distribution[67,75]. A popular account is given in a LANL Physics Div. Progress Report, 1997-1998. Showed[204] how the chiral soliton model leads to nuclear saturation, explains the EMC effect and Drell-Yan data and predicts modifications of the nucleon electromagnetic form factor[209].
- Our 1989 prediction[100] of the parity violating proton-proton total cross section verified in an 2001 experiment at TRIUMF.
- Connected the strong coupling limit of QCD and nuclear physics [96].
- Established the tools required to accurately compute the effects of color transparency[113,123,126,128], including establishing equivalence of the hadron matrix element and quantum diffusion approaches to small-sized wave packet expansion. Prediction[131] of A-dependence of di-jet production in coherent pion-nucleus reactions made in 1993 was confirmed by experiments in 1999. QCD basis of the prediction elucidated [169,179]. Prediction of color transparency effects in electroproduction of pions [220] participation in the experimental verification [230].

- Applied chiral perturbation theory to explain the threshold production of neutral pions in proton–proton collisions[150,153]
- Developed light front field theory for nuclear physics[155,157,165,166]. Showed how to recover of rotational invariance[162].
- Predicted [151] a rapid decrease of the elastic electric form factor observed recently at Jlab, provided a qualitative explanation [188], described all electromagnetic form factors [192], and introduced spin-dependent density operators to exhibit the non-spherical shape of the proton[200]. Later it was realized that these operators correspond to specific TMDs and GPDs. Lattice calculations verified this non-spherical nature of the proton's density. This work received a lot of attention in the popular press including the NY Times and USA Today.
- Used model-independent techniques to show that the charge density at the center of the neutron is negative [228], and that the magnetization density of the proton extends further than its charge density [232]. Showed that the non-spherical shape of the proton could be measured [231] in terms of a transverse momentum distribution. Predicted that medium modifications enhance the neutron ratio G_E/G_M. [239]
- Originated a quantum mechanical treatment of HBT correlations that showed that RHIC data was consistent with the presence of a chiral phase transition [211]. This work was discussed in the Wall St. Journal and was selected to be the subject of a column in Nature published by F. Wilczek.
- Entered into biophysics. Derived a new model in which free energy distributions account for the properties of protein interaction networks [221,223].
- Entered into atomic physics by calculating a variety of nucleon structure effects to improve the accuracy of the extraction of the proton radius from muonic atom data. [251,255,264,265]. Provided a testable hypothesis to explain the difference between radii extracted from muonic and electronic hydrogen experiments [264]. Tested the hypothesis of the existence of a new scalar boson that accounts for the extant data, and found ways to search for it [290,292,294,309]. Presented a unified approach to understanding the meaning of the proton radius [303]
- Found new limits on the the nucleon strangeness $s\bar{s}$ content, and its effect on supernovae explosions [280,288].
- Found a new way to discuss color charge distributions of the proton [306].

Publications– Refereed Journals **Gerald A. Miller**

1. "The Role of Pairing in the Formation of Double Analogues in Heavy Nuclei," Phys. Rev. Lett. 28, 372 (1972) (with A.K. Kerman).

2. "Neutron Escape from Isobaric Analogue Resonances," Nucl. Phys. A212, 287 (1973).

3. "Positive Pion Production by 185 MeV Protons," Nucl. Phys. A224, 269 (1974).

4. "Angle Transformation for π-Nucleus Optical Potential," Phys. Rev. C 9, 1205 (1974) (with E. Kujawski).

5. "Effects of Nuclear Polarizability on Pion Elastic Scattering," Nucl. Phys. A223, 477 (1974).

6. "PIRK-A Computer Program to Calculate the Elastic Scattering of Pions from Nuclei," Computer Physics Communications 8, 130 (1974) (with R.A. Eisenstein).

7. "The Use of 'New' Pion Optical Potentials in the (p, π^+) and (π^+, p) Reactions," Phys. Lett. 51B, 129 (1974) (with S.C. Phatak).

8. "Angle Transformation for the Pion-Nucleus Optical Potential," Phys. Rev. C 10, 1242 (1974).

9. "Pion Charge Exchange Reactions with Nuclei," Phys. Lett. 53B, 329 (1974) (with J.E. Spencer).

10. "The (π, d) Reaction for Small Incident Pion Energies," Phys. Rev. C 11, 2001 (1975) (with R.A. Eisenstein).

11. "Implications of High Energy Pi-Nucleon Data for Elastic Pi-Nucleus Scattering," Phys. Rev. C 12, 1962 (1975) (with D.J. Ernst).

12. "The (p, π^-) Reaction and Δ^{++} Components of Nuclei," Nucl. Phys. A254, 493 (1975) (with L.S. Kisslinger).

13. "Pion Charge Exchange Reactions with Nuclei," Annals of Physics (N.Y.), 100, 562 (1976) (with J.E. Spencer).

14. "DWPI-A Computer Program to Calculate the Inelastic Scattering of Pions from Nuclei," Computer Physics Communications 11, 95 (1976) (with R.A. Eisenstein).

15. "Effects of the (π, N) Reaction on π-Nuclear Elastic Scattering," Phys. Rev. C 14, 361 (1976).

16. "Pi-Nucleon Scattering," Phys. Rev. C 14, 2230 (1976).

17. "A Correlation Expansion of the Optical Potential," Phys. Rev. C 16, 537 (1977) (with D.J. Ernst, J.T. Londergan, and R.M. Thaler).

18. "Multiple-Scattering Aspects of the Pi-Nucleus Low Equation," Phys. Rev. Lett. 38, 753 (1977).

19. "Field Theoretic Treatment of π-Nuclear Scattering," Phys. Rev. C 16, 2325 (1977).

20. "A Vanishing Closure Correction in the Second-Order Optical Potential," Phys. Rev. C 17, 835 (1978) (with N. Austern and M. Silver).

21. "Lorentz-Lorenz Effect and ρ^2 Terms in Pion-Nucleus Scattering," Phys. Rev. C 18, 579 (1978).

22. "ρ-Meson Intermediate States in π-Nucleon Scattering," Phys. Rev. C 18, 914 (1978).

23. "Intermediate Rho Mesons in Pi-Nuclear Scattering," Z. Physik A287, 387 (1978).

24. "Charge-Symmetry Tests in Neutron-Proton Elastic Scattering," Nucl. Phys. A305, 342 (1978) (with C.Y. Cheung and E.M. Henley).

25. "Field-Theory Treatment of the $pp \to d\pi^+$ Reaction," Nucl. Phys. A306, 447 (1978) (with M.A. Alberg, E.M. Henley, and J.F. Walker).

26. "Effects of Odd-Parity Components of the Deuteron on Inelastic Polarized Electron-Deuteron Scattering," Phys. Rev. D 19, 3236 (1979) (with J.N. Ng).

27. "Charge Symmetry Test in the Reaction $np \to d\pi^0$," Phys. Rev. Lett. 43, 1215 (1979) (with C.Y. Cheung and E.M. Henley).

28. "Hopes and Realities for the (p, π) Reaction," Ann. Rev. Nucl. Part. Sci. 1979 29, 121 (1979) (with D.F. Measday).

29. "Meson Theory of Charge–Dependent Nuclear Forces," in *Mesons in Nuclei*, Ed. by M. Rho and D. Wilkinson, North-Holland, Amsterdam, p. 405 (1979) (with E.M. Henley).

30. "Pion-Nucleon Scattering in the Brown-Rho Bag Model," Phys. Lett. B91, 192 (1980) (with A.W. Thomas and S. Théberge).

31. "Low Energy Absorption of Pions on Nuclei and the Real ρ^2 Potential," Phys. Rev. C 21, 2519 (1980) (with J.V. Noble).

32. "Evidence for Non-linear Meson Dynamics from Low Energy Pion-Nucleus Scattering," Phys. Rev. C 22, 1211 (1980) (with J.V. Noble).

33. "Can the Lee Model be Used in Testing Theories of Pion-Nucleus Scattering?," Nucl. Phys. A340, 367 (1980).

34. "Relativistic Kinematics for Elastic Pion-Nucleus Scattering," Phys. Rev. C 21, 1472 (1980) (with D.J. Ernst).

35. "Pion-Nucleus Charge Exchange Reactions at Low Energies," Phys. Rev. C 22, 2639 (1980) (with J.E. Spencer).

36. "Charge Symmetry Breaking in the *np* System," Nucl. Phys. A348, 365 (1980) (with C.Y. Cheung and E.M. Henley).

37. "Interpretation of Some Low Equation Results," Annals of Physics (N.Y.) 129, 131 (1980) (with E.M. Henley).

38. "Deuteron Photodisintegration: Impulse Approximation and Gauge Invariance," Phys. Rev. C 22, 968 (1980) (with W-Y.P. Hwang).

39. "Pionic Corrections in the MIT Bag Model, I: The (3,3) Resonance," Phys. Rev. D 22, 2838 (1980) (with S. Théberge and A.W. Thomas).

40. "Pion-Nucleus Scattering and Systematics of the Delta-Nucleus Interaction," Phys. Lett. 103B, 397 (1981) (with R.A. Freedman and E.M. Henley).

41. "Pionic Corrections in the MIT Bag Model," Comments on Nuclear and Particle Physics 10, 101 (1981) (with S. Théberge and A.W. Thomas).

42. "The Cloudy Bag Model of the Nucleon," Phys. Rev. D 24, 216 (1981) (with S. Théberge and A.W. Thomas).

43. "Energy Independent Optical Models," Phys. Rev. Lett. 46, 1545 C (1981) (with J.T. Londergan).

44. "Elastic Pion Double Charge Exchange Reactions," Phys. Rev. C 24, 221 (1981).

45. "Parity Violation in Electron-Deuteron Interactions II: Break-up Channels," Annals of Physics 137, 378 (1981) (with W-Y. P. Hwang and E.M. Henley).

46. "Baryon Momentum Effects in Resonance Dominated Strangeness Changing Nuclear Reactions," Phys. Lett. B106, 358 (1981) (with G.E. Walker).

47. "The Cloudy Bag Model IV: Higher Order Corrections to the Nucleon Electromagnetic Properties," Can. J. Phys. 60, 59 (1982) (with S. Théberge and A.W. Thomas).

48. "Properties of Energy Independent Optical Models," Phys. Rev. C 25, 46 (1982) (with J.T. Londergan).

49. "Isobar Dynamics and Pion-Nucleus Elastic Scattering," Nucl. Phys. A389, 457 (1982) (with R.A. Freedman and E.M. Henley).

50. "Model Dependence of the $^1S_0$ pp Scattering Length," Phys. Rev. C 27, 917 (1983) (with M. Rahman).

51. "Pion-Nucleus Charge Exchange Reactions with Isobar Dynamics," Phys. Rev. C 27, 277 (1983) (with R.A. Freedman, E.M. Henley and P. Hoodbhoy).

52. "A Relation Between Coherent π^0 Photoproduction and π-Nucleus Elastic Scattering," Phys. Rev. C 28, 848 (1983) (with P. Hoodbhoy).

53. "Quark Contributions to the $pp \rightleftharpoons d\pi^+$ Reaction," Phys. Rev. C 27, 1669 (1983) (with L.S. Kisslinger).

54. "Weak Nuclear Interactions in a Hybrid Baryon-Quark Model: p-p Asymmetry," Phys. Rev. C 27, 1602 (1983) (with L.S. Kisslinger).

55. "A Theory for a Hybrid Model for the Nucleon-Nucleon System," Phys. Rev. C 28, 1277 (1983) (with E.M. Henley and L.S. Kisslinger).

56. "Fermi Integration in the Pion-Nucleus Optical Potential," Phys. Rev. C 27, 2733 (1983) (with D.J. Ernst).

57. "Chiral Symmetry Breaking Length Scale and g_A in Chiral Bag Models," Phys. Lett. 121B, 232 (1983) (with S.A. Chin).

58. "The Axial Form Factor of the Nucleon and the Pion-Nucleon Vertex Function," Phys. Lett. 124B, 109 (1983) (with P.A.M. Guichon and A.W. Thomas).

59. "Charge Dependence of Nuclear Forces," Phys. Lett. 132B, 32 (1983) (with T.E.O. Ericson).

60. "The KSRF Relation and Strong Mesonic Couplings in the Cloudy Bag Model," Phys. Lett. 130B, 98 (1983) (with P. Singer).

61. "Convergent Self-energy in the Cloudy Bag Model," Phys. Lett. 132B, 173 (1983) (with G. Crawford).

62. "Quarks and the Deuteron Asymptotic D-state," Phys. Lett. 134B, 15 (1983) (with P.A.M. Guichon).

63. "Building the Nucleus from Quarks: The Cloudy Bag Model and the Quark Description of the Nucleon-Nucleon Wave Function," *International Review of Nuclear Physics*, T.T.S. Kuo and E. Osnes eds., *Quarks and Nuclei*, Vol. 1, W. Weise, ed., World Scientific (1984).

64. "Determination of the Effective Axial Coupling Constant," Phys. Rev. Lett. 52, 1838 (1984) (with M.C. Birse).

65. "Nucleon Magnetic Moments in Nuclei and Quark Degrees of Freedom," Phys. Lett. 143B, 326 (1984) (with G. Karl and J. Rafelski).

66. "Disentangling Explanations of Deep-inelastic Lepton-Nucleus Scattering by Lepton-Pair Production," Phys. Rev. Lett. 53, 2532 (1984) (with P. Bickerstaff and M. Birse).

67. "Six-quark Cluster Components of Nuclear Wave Functions with the Pion-nucleus Double Charge Exchange Reaction," Phys. Rev. Lett. 53, 2008 (1984).

68. "M1 Radiative Transitions of Mesons in the Cloudy Bag Model," Phys. Lett. B154, 75 (1985) (with P. Singer).

69. "Six Quark Cluster Effects and Binding Energy Differences Between Mirror Nuclei," Phys. Rev. C 31, 602 (1985) (with V. Koch).

70. "Dynamical Rescaling and the Size of the Pion," Phys. Lett. B161, 393 (1985) (with R.P. Bickerstaff and M.C. Birse).

71. "Radiative Meson Decay in the Cloudy Bag Model," Phys. Rev. D 33, 141 (1986) (with P. Singer).

72. "Current Algebra and the Cloudy Bag Model," Phys. Rev. D 33, 817 (1986) (with M.A. Morgan and A.W. Thomas).

73. "Pion Nucleus Double Charge Exchange: The Modern Era," Comments on Nuclear and Particle Physics 15, 269 (1986) (with H.W. Baer).

74. "Partons in Nuclei," Phys. Rev. D 33, 3228 (1986) (with R.P. Bickerstaff and M.C. Birse).

75. "Origins of the EMC Effect," Phys. Lett. B168, 409 (1986). (with R.P. Bickerstaff).

76. "Q^2-Dependence of the EMC Effect," Phys. Rev. D 34, 2890 (1986) (with R.P. Bickerstaff).

77. "Charge Symmetry Breaking in Neutron-Proton Elastic Scattering," Phys. Rev. Lett. 56, 2567 (1986) (with A.W. Thomas and A.G. Williams).

78. "Six-quark Bags and the Charge Density Difference Between Pb and Tl," Phys. Lett. B174, 229 (1986).

79. "The Neutron Electric Dipole Moment in the Cloudy Bag Model," Phys. Lett. B179, 379 (1986) (with M.A. Morgan).

80. "Color and the Isospin Violating Nucleon-nucleon Force," Phys. Rev. C 34, 1779 (1986) (with K. Bräuer and E.M. Henley).

81. "Pion Absorption in the Diproton," Phys. Rev. Lett. 57, 2135 (1986)(with D. Ashery, E. Piasetzky, M.A. Moinester, A. Gal).

82. "Examining the P-Matrix," Phys. Rev. D 35, 1707 (1986) (with G.A. Crawford).

83. "Quarks and the Saturation Properties of Nuclear Matter," Phys. Rev. C 36, 1956 (1987) (with G.A. Crawford).

84. "Six Quark Clusters and the Energy Dependence of the $(\pi^+\pi^-)$ Reaction," Phys. Rev. C (Rapid Communications) 35, 377 (1987).

85. Comment on "Charge-Dependence of the Nucleon-Nucleon Interaction due to the Pion Mass Difference," Phys. Rev. C 36, 2707 (1987) (with T.E.O. Ericson).

86. "Deep Inelastic Structure Functions in the MIT Bag," Phys. Rev. D 36, 1344 (1987) (with C.J. Benesh).

87. "Charge-Symmetry Breaking in Neutron-Proton Elastic Scattering," Phys. Rev. C 36, 1956 (1987) (with A.G. Williams and A.W. Thomas).

88. "Quark Model of the $\pi^- pp \to np$ Reaction," Phys. Rev. C 36, 2450 (1987) (with A. Gal).

89. "Radiative and Pionic Decays of the D^* Mesons and the Magnetic Moment of the Charmed Quark," Phys. Rev. D 37, 2564 (1988) (with P. Singer).

90. "Nucleonic Contribution to Lepton-Nucleus Deep Inelastic Scattering," Phys. Lett. B200, 351 (1988) (with H. Jung).

91. "Flux Tube Rearrangement and Meson-Meson Scattering," Phys. Rev. D 37, 2431 (1988).

92. "Deep Inelastic Scattering in a Modified Bag Model," Phys. Rev. D 38, 48 (1988) (with C.J. Benesh).

93. "Deuteron Photo-Disintegration," Phys. Rev. C 38, 1584 (1988) (with S. Ying and E.M. Henley).

94. "Valence Quark Distributions in the Soliton Bag Model," Phys. Lett. B215, 381 (1988) (with C.J. Benesh).

95. "Potential Model Calculations of Parity-Violation in Proton-Proton Scattering," Phys. Rev. C 39, 1951 (1989) (with D. Driscoll).

96. "Towards a QCD Derivation of the Nucleus," Phys. Rev. C 39, 1563 (1989).

97. "The Spin Structure of the Proton," Phys. Lett. B222, 476 (1989) (with C.J. Benesh).

98. "$B^* \to B\gamma$ Decays in a Bag Model for Heavy-Light Quark States," Phys. Rev. D 39, 825 (1989) (with P. Singer).

99. "Relativistic Pion-Ring Series for Nuclear Matter," Phys. Rev. Lett. 62, 2357 (1989) (with H. Jung and F. Beck).

100. "Relativistic and Strong-Distortion Effects in Proton-Proton Parity Violation," Phys. Rev. C 40, 2159 (1989) (with D. Driscoll).

101. "Q^2 Dependence of the EMC Effect," Phys. Rev. C 41, 362 (1990).

102. "Pionic Contributions to Deep Inelastic Nuclear Structure Functions," Phys. Rev. C 41, 659 (1990) (with H. Jung).

103. "Charge Symmetry, Quarks and Mesons," Phys. Rpts. 194, 1-116 (1990) (with B.M.K. Nefkens and I. Slaus).

104. "On Color Transparency," Phys. Lett. B236, 209 (1990) (with B.K. Jennings).

105. "A New Look at CP Violation," Phys. Rev. D 41, 2817 (1990) (with M.J. Iqbal).

106. "New Directions in Theory," Nucl. Phys. A508, 561c (1990).

107. "The Proton Charge Form Factor and the Neutron-Proton Mass Difference," Festschrift for Torleif Ericson, Nucl. Phys. A518, 207 (1990) (with E.M. Henley).

108. "Charge Symmetry Breaking," Festschrift for Torleif Ericson, Nucl. Phys. A518, 345 (1990).

109. "Excess of $\bar{D}$ over $\bar{U}$ in the Proton Sea," Phys. Lett. B251, 453 (1990) (with E.M. Henley).

110. "Comment on Quark-Meson Coupling Model for Baryon Wave Functions and Properties," Phys. Rev. D 43, 288 (1991) (with A.W. Thomas).

111. "Nucleon Self-energy in Relativistic Nuclear Matter with Pion Ring Series," Phys. Rev. C 43, 1958 (1991) (with H. Jung).

112. "Charge Distributions of Hyperons," Phys. Lett. B255, 11 (1991) (with J. Kunz and P. Mulders).

113. "The Energy Dependence of Color Transparency," Phys. Rev. D 44, 692 (1991) (with B.K. Jennings).

114. "Nucleon Binding Corrections to Lepton-nucleus Deep Inelastic Scattering: Use of a Realistic Spectral Function," Phys. Rev. C44, 866 (1991) (with A.E.L. Dieperink).

115. "Charge-Symmetry of the Strong Interaction is the Light-flavor Symmetry of QCD," Comm. Nucl. & Part. Phys. 20, 221 (1991) (with I. Slaus and B.M.K. Nefkens).

116. "Parity Violation in Elastic Electron-deuteron Scattering: Light-front Dynamics," Nucl. Phys. A533, 617 (1991) (with T. Frederico and E. Henley).

117. "Total Cross Section for $p + p \to p + p + \pi^0$ Near Threshold Measured with the Indiana Cooler," Phys. Rev. C44, R1725 (1991) (with P.U. Sauer).

118. "Scattering of GeV Electrons by Nuclear Matter," Phys. Rev. C 44, 2328 (1991) (with O. Benhar, A. Fabrocini, S. Fantoni, V.R. Pandharipande and I. Sick).

119. "High Energy Nuclear Quasielastic Reactions: Decisive Tests of Nuclear Binding/Pion Models of the EMC Effect," Phys. Rev. Lett. 68, 17 (1992) (with L. Frankfurt and M. Strikman).

120. "Color Transparency and Non-perturbative Contributions to High Energy (p,pp) Reactions," Phys. Lett. B274, 442 (1992) (with B.K. Jennings).

121. "Color Transparency and High Energy (p,2p) Reactions," Phys. Rev. C 45, 1863 (1992) (with T.-S.H. Lee).

122. "Null-plane Phenomenology for the Pion Decay Constant and Radius," Phys. Rev. D45, 4207 (1992).with T. Frederico

123. "Color Transparency Phenomenon and Nuclear Physics," Comm. Nucl. Part. Phys. 21, 1 (1992) (with L. Frankfurt and M. Strikman).

124. "Comment on 'Pion Contribution to K^+-Nucleus Scattering," Phys. Rev. Lett. 69, 2449 (1992).

125. "Sum Rule Description of Color Transparency," Phys. Rev. C 46, 2547 (1992) (with L. Frankfurt, W.R. Greenberg, and M. Strikman).

126. "Realistic Hadronic Matrix Element Approach to Color Transparency," Phys. Rev. Lett. 69, 3619 (1992) (with B.K. Jennings).

127. "Precocious Dominance of Point-like configurations in Hadronic Form Factors," Nucl. Phys. A555, 752 (1993) (with L. Frankfurt and M. Strikman).

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I have given about 450 talks at physics meetings and workshops. Many of these have been published in various proceedings. A list is available on request.