

Publications of Frank Wilczek

1. Ultraviolet Behavior of Non-Abelian Gauge Theories (with D. Gross), *Phys. Rev. Lett.* **30**, 1343 (1973).
2. Asymptotically Free Gauge Theories, I (with D. Gross), *Phys. Rev.* **D8**, 3633 (1973).
3. Asymptotically Free Gauge Theories, II (with D. Gross), *Phys. Rev.* **D9**, 980 (1974).
4. Gauge Dependence of Renormalization Group Parameters (with W. Caswell), *Phys. Lett.* **B49**, 291 (1974).
5. Possible Non-Regge Behavior of Electroproduction Structure Functions (with A. DeRujula, S.L. Glashow, H.D. Politzer, S.B. Treiman and A. Zee), *Phys. Rev.* **D10**, 1649 (1974).
6. Scaling Deviations for Neutrino Reactions in Asymptotically Free Field Theories (with S. Treiman and A. Zee) *Phys. Rev.* **D10**, 2881 (1974).
7. Implications of Anomalous Lorentz Structure in Neutral Weak Processes (with R. Kingsley and A. Zee), *Phys. Rev.* **D10**, 2216 (1974).
8. Scaling Properties of a Gauge Theory with Han-Nambu Quarks and Charged Vector Gluons (with T.P. Cheng), *Phys. Lett.* **53B**, 269 (1974).
9. Some Experimental Consequences of Asymptotic Freedom, Proceedings: *AIP Conference #23*, 596, AIP Press, (1975).
10. Tests of Coupling Types in Weak Muonless Reactions (with R.L. Kingsley, R. Shrock and S.B. Treiman), *Phys. Rev.* **D11**, 1043 (1975).
11. Remarks on the New Resonances at 3.1GeV and 3.7GeV (with C.G. Callan, R.L. Kingsley, S.B. Treiman and A. Zee), *Phys. Rev. Lett.* **34**, 52 (1975).
12. Weak Decays of Charmed Hadrons (with R.L. Kingsley, S.B. Treiman and A. Zee), *Phys. Rev.* **D11**, 1919 (1975).
13. Weak Decays of Charmed Hadrons, II: Soft Meson Theorems (with R.L. Kingsley, S. Treiman and A. Zee), *Phys. Rev.* **D12**, 106 (1975).
14. Possible Degeneracy of Heavy Quarks, *Phys. Lett.* **59B**, 179 (1975).
15. Weak Interactions with New Quarks and Right-Handed Currents (with R.L. Kingsley, S.B. Treiman and A. Zee), *Phys. Rev.* **D12**, 2768 (1975).
16. Weak Interactions of Heavy Quarks (with R.L. Kingsley and A. Zee), *Phys. Lett.* **61B**, 259 (1976).
17. New Leptons and Old Lepton Numbers (with A. Zee), *Nucl. Phys.* **B106**, 461 (1976).
18. Non-Uniqueness of Gauge Field Potentials (with S. Deser), *Phys. Lett.* **65B**, 391 (1976).
19. Inequivalent Embeddings of $SU(2)$ and Instanton Interactions, *Phys. Lett.* **65B**, 160 (1976).
20. Rare Muon Decays, Natural Lepton Models, and Doubly Charged Leptons (with A. Zee), *Phys. Rev. Lett.* **38**, 531 (1977).
21. Mass Corrections in Deep-Inelastic Scattering (with D. Gross and S. Treiman), *Phys. Rev.* **D15**, 2486 (1977).
22. $\Delta I = \frac{1}{2}$ Rule and Right-Handed Currents: Heavy-Quark Expansion and Limitations in Zweig's Rule (with A. Zee), *Phys. Rev.* **D15**, 2660 (1977).
23. A Model for Weak Trimuon Production (with A. Zee and S. Treiman), *Phys. Lett.* **68B**, 369 (1977).
24. Orientation of the Weak Interaction with Respect to the Strong Interaction (with A. Zee), *Phys. Rev.* **D15**, 3701 (1977).
25. Rare Muon Decays, Heavy Leptons and CP Violations (with S. Treiman and A. Zee), *Phys. Rev.* **D16**, 152 (1977).
26. Geometry and Interaction of Instantons, *Quark Confinement and Field Theory: Proceedings of a Conference at the University of Rochester, Rochester, NY, June 14-18, 1976*, Stump and Weingarten, eds. (Wiley-Interscience, NY, 1977), pp. 211-219.

27. Possible New Species of Quarks and Hadrons (with A. Zee), *Phys. Rev.* **D16**, 860 (1977).
28. Asymptotic Freedom: A Status Report, *Proceedings of Brookhaven APS Meeting*, Brookhaven National Lab., Upton, NY, pp.C79-C87.
29. Sum Rules for Spin-Dependent Electroproduction - Test of Relativistic Constituent Quarks (with S. Wandzura), *Phys. Lett.* **B72**, 195 (1977).
30. Decay of Heavy Vector Mesons into Higgs Particles, *Phys. Rev. Lett.* **39**, 1304 (1977).
31. Discrete Flavor Symmetries and a Formula for the Cabibbo Angle (with A. Zee), *Phys. Lett.* **B70**, 418 (1977).
32. Instantons and Spin Forces Between Massive Quarks (with A. Zee), *Phys. Rev. Lett.* **40**, 83 (1977).
33. Problems of Strong P and T Invariance in the Presence of Instantons, *Phys. Rev. Lett.* **40**, 279 (1977).
34. Some Problems in Gauge Field Theories, *The Unification of Elementary Forces and Gauge Theories: Proceedings of the Ben Lee Memorial International Conference on Parity Nonconservation, Weak Neutral Currents and Gauge Theories*, Fermi National Accelerator Laboratory, Batavia, 1977 (N.Y., Harwood Academic Press, 1978) pp. 607-621.
35. Axion Emission in Decay of Nuclear Excited States (with S. Treiman), *Phys. Lett.* **B74**, 381 (1978).
36. Low Energy Manifestations of Heavy Particles: Application to Neutral Current (with J. Collins and A. Zee), *Phys. Rev.* **D18**, 242 (1978).
37. Effect of Instantons on the Heavy Quark Potential (with C. Callan, R. Dashen, D. Gross and A. Zee). *Phys. Rev.* **D18**, 4684 (1978).
38. Steps Toward the Heavy Quark Potential, "50 Years of the Dirac Equation," published in AIP Conference Proceedings,(APS Press), (48), pp. 30-37, (1979).
39. Matter-Antimatter Accounting, Thermodynamics, and Black Hole Radiation (with D. Toussaint, S. Treiman and A. Zee), *Phys. Rev.* **D19**, 1036 (1979).
40. Elementary Examples of Baryon Number Generation (with D. Toussaint), *Phys. Lett.* **B81**, 238 (1979).
41. Horizontal Interactions and Weak Mixing Angles (with A. Zee), *Phys. Rev. Lett.* **42**, 421 (1979).
42. Light Quark Masses and Isospin Violation (with D. Gross and S. Treiman), *Phys. Rev.* **D19**, 2188 (1979).
43. $SU(3)$ Predictions for Charmed Meson Decays (with S. Treiman), *Phys. Rev. Lett.* **43**, 816 (1979).
44. Interference Effects in Charmed Meson Decays (with S. Treiman), *Phys. Rev. Lett.* **43**, 1059 (1979).
45. Operator Analysis of Nucleon Decay (with A. Zee), *Phys. Rev. Lett.* **43**, 1571 (1979).
46. Unification of Fundamental Forces, *Proceedings of Lepton and Photon Interactions at High Energies Conference*, (9th) eds. Kirk and Abarbanel, pp. 437-445, (Batavia, IL 1979).
47. Conservation or Violation of $B - L$ in Proton Decay (with A. Zee), *Phys. Lett.* **B88**, 311 (1979).
48. Possibility and Consequences of T Violation in Nucleon Decay (with Anya Hurlbert), *Phys. Lett.* **B93**, 274 (1980).
49. Symmetry Relations in Nucleon Decay (with Anya Hurlbert), *Phys. Lett.* **B92**, 95 (1980).
50. Thermalization of Baryon Asymmetry (with S. Treiman), *Phys. Lett.* **B95**, 222 (1980).
51. Hyperweak Interactions, *Proceedings: "Particles and Fields" Conference*, Montreal; APS Press (1980).
52. Cosmic Asymmetry Between Matter and Antimatter, *Scientific American*, December 1980, p. 82.

53. Constraints on Neutrinos (with D. Toussaint), *Nature* **289**, 777 (1981).
54. Price of Fractional Charge in Unified Theories (with L.F. Li), *Phys. Lett.* **B107**, 64 (1981).
55. Families from Spinors (with A. Zee), *Phys. Rev.* **D25**, 553 (1982).
56. Supersymmetry and the Scale of Unification (with S. Dimopoulos and S. Raby), *Phys. Rev.* **D24**, 1681 (1981).
57. Fractional Charge on Solitons (with J. Goldstone), *Phys. Rev. Lett.* **47**, 986 (1981).
58. Supersymmetric Unified Models (with S. Dimopoulos), in *The Unity of the Fundamental Interactions*, ed. A. Zichichi (Plenum, New York, 1983).
59. Physical Processes Involving Majorana Neutrinos (with L.F. Li), *Phys. Rev.* **D25**, 143 (1982).
60. *Prospects at Higher Energy*, Isabelle Summer Study, 1981 (BNL Press).
61. Coming Attractions in SUMS and Cosmology, *Comments on Nuclear and Particle Physics* **X175**, (1981).
62. Erice Lectures on Cosmology, in *The Unity of the Fundamental Interactions*, ed. A. Zichichi (Plenum, New York, 1983).
63. Naturality Problems, *APS Particles and Fields*, Santa Cruz, (1981), (APS Press).
64. Magnetic Flux, Angular Momentum, and Statistics, *Phys. Rev. Lett.* **48**, 1144 (1982).
65. Remarks on Dyons, *Phys. Rev. Lett.* **48**, 1146 (1982).
66. Proton Decay in Supersymmetry Theories (with S. Dimopoulos and S. Raby), *Phys. Lett.* **B112**, 133 (1982).
67. Old and New Relics in Cosmology, *Proceedings NAS* **79**, 33376 (1982).
68. QCD - The Modern Theory of Strong Interactions, *Ann. Rev. Nucl. Sci.* **V32**, 177 (1982).
69. *Microphysical Cosmology*, Princeton University Press (in preparation).
70. Some Recent Ideas Related to Supersymmetry, *Unified Theories and their Experimental Tests*, CLEUP, Padova, (1983).
71. Reheating an Inflationary Universe (with A. Aubrecht, P. Steinhart and M. Turner) *Phys. Rev. Lett.* **48**, 1437 (1982).
72. Might Our Vacuum be Metastable? (with M. Turner), *Nature* **298**, 633 (1982).
73. Monopole-Flux Tube Repulsion in Strong Coupling (with R. Zacher), *Phys. Rev.* **D26**, 3685 (1982).
74. Positivity Conditions on $SU(5)$ Potential (with R. MacKenzie), *Phys. Rev.* **D26**, 3679 (1982).
75. Magnetic Monopoles: A Local Source? (with S. Dimopoulos, S. Glashow and E. Purcell), *Nature* **298**, 824 (1982).
76. Quantum Mechanics of Fractional Spin Particles, *Phys. Rev. Lett.* **49**, 957 (1982).
77. Catalyzed Nucleon Decay in Neutron Stars (with S. Dimopoulos and J. Preskill), *Phys. Lett.* **B119**, 320 (1982).
78. Cosmology of Invisible Axions (with J. Preskill and M. Wise), *Phys. Lett.* **B120**, 127 (1983).
79. Axions and Family Symmetry Breaking, *Phys. Rev. Lett.* **49**, 1549 (1982).
80. Particle Physics and Cosmology: Foundation and Working Pictures, in *The Very Early Universe*, eds. Gibbons, Hawking, Siklos (Cambridge University Press, 1983).
81. Fun with Monopoles and Axions, in *The Very Early Universe*, eds. Gibbons, Hawking, Siklos (Cambridge University Press, 1983).
82. Conference Summary, in *The Very Early Universe*, eds. Gibbons, Hawking, Siklos (Cambridge University Press, 1983).
83. Review of "Quantum Physics" by J. Glimm and A. Jaffe, *Phys. Today*, October, 1982.
84. Peculiar Quantum Numbers (in preparation, for Cambridge University Press).
85. Family Symmetries, *AIP Conference Proceedings No. 102*, p.68, (AIP Press, 1983).
86. Thoughts on Family Symmetries, *AIP Conference Proceedings No. 96* (AIP Press, 1982).
87. Microphysical Cosmology, XVIII Solvay Conference, *Phys. Reports* **C104**, 143 (1984).

88. Formation of Structure in an Axion-Dominated Universe (with M. Turner and A. Zee), *Phys. Lett.* **B125**, 35, 519(E) (1983).
89. Particle-Antiparticle Annihilation in Diffuse Motion (with D. Toussaint), *Jour. Chem. Phys.* **78**, 2642 (1983).
90. Linking Numbers, Spin, and Statistics of Solitons (with A. Zee), *Phys. Rev. Lett.* **51**, 2250 (1983).
91. Remarks on the Chiral Phase Transition in Chromodynamics (with R. Pisarski), *Phys. Rev.* **D29**, 338 (1984).
92. New Macroscopic Forces? (with J.E. Moody), *Phys. Rev.* **D30**, 130 (1984).
93. The $U(1)$ Problem: Instanton, Axions, and Familons, in *How Far Are We from the Gauge Forces*, ed. A. Zichichi (Plenum, 1985).
94. Statistical Mechanics of Anyons (with D. Arovas, J.R. Schrieffer and A. Zee), *Nucl. Phys.* **B251**, [FS13], 917 (1985).
95. Solitons in Superfluid $^3\text{He-A}$: Bound States on Domain Walls (with J.L. Ho, J.R. Fulco and J.R. Schrieffer), *Phys. Rev. Lett.* **52**, 1524 (1984).
96. Reflections on Mirror Fermions (with G. Senjanovic and A. Zee), *Phys. Lett.* **B141**, 389 (1984).
97. Illustrations of Vacuum Polarization by Solitons (with R. MacKenzie), *Phys. Rev.* **D30**, 2194 (1984).
98. Examples of Vacuum Polarization by Solitons (with R. MacKenzie), *Phys. Rev.* **D30**, 2260 (1984).
99. Appearance of Gauge Structures in Simple Dynamical Systems (with A. Zee), *Phys. Rev. Lett.* **52**, 2111 (1984).
100. Fractional Statistics and the Quantum Hall Effect (with D. Arovas and J.R. Schrieffer), *Phys. Rev. Lett.* **53**, 722 (1984).
101. A Stellar Loss Mechanism Involving Axions (with L. Krauss and J. Moody), *Phys. Lett.* **B144**, 391 (1984).
102. Possible Form of Vacuum Deformation by Heavy Particles (with R. MacKenzie and A. Zee), *Phys. Rev. Lett.* **53**, 2203 (1983).
103. Possible Interpretation of a New Resonance at 8.3 GeV (with K. Lane and S. Meshkov), *Phys. Rev. Lett.* **53**, 1718 (1984).
104. Adiabatic Methods in Field Theory, in *TASI Lectures in Elementary Particle Physics*, ed. Williams (TASI Publications, Ann Arbor, MI, 1984).
105. Inhomogeneous Cosmology and Microphysics, in *TASI Lectures in Elementary Particle Physics*, ed. Williams (TASI Publications, Ann Arbor, MI, 1984).
106. Bolometric Detection of Neutrinos (with B. Cabrera and L. Krauss), *Phys. Rev. Lett.* **55**, 25 (1985).
107. Solar Neutrino Oscillations (with L. Krauss), *Phys. Rev. Lett.* **55**, 122 (1985).
108. Fundamental Physics, Mathematics, and Astronomy, in *Emerging Syntheses in Science*, ed. Pines (Santa Fe Institute, 1985).
109. Solar System Constraints and Signatures for Dark Matter Candidates (with L. Krauss and M. Srednicki), *Phys. Rev.* **D33**, 2079 (1986).
110. Calculations for Cosmic Axion Detection (with L. Krauss, J. Moody and D. Morris), *Phys. Rev. Lett.* **55**, 1797 (1985).
111. Resonant Production and Charm Showers in Ultra-High Energy Neutrino Interactions, *Phys. Rev. Lett.* **55**, 1252 (1985).
112. Simple Realizations of Magnetic Monopole Gauge Fields: Diatoms and Spin Precession (with J. Moody and A. Shapere), *Phys. Rev. Lett.* **56**, 893 (1986).
113. A Short-Lived Axion Variant (with L. Krauss), *Phys. Lett.* **B173**, 189 (1986).

114. Macroscopic T -Violation: Prospects for a New Experiment (with W. Bialek and J. Moody), *Phys. Rev. Lett.* **56**, 1623 (1986).
115. *Longing for the Harmonies*, [a book] W.W. Norton (January, 1988).
116. "Virtual Particles" [a sonnet] Norton Anthology of Light Verse, ed. Baker, 1986.
117. Artificial Vacuum for T -Violation Experiment (with C. Pryor), *Phys. Lett.* **B194**, 137 (1987).
118. New Quarks and Neutrino Counting Below the Z Threshold (with L. Krauss), *Phys. Lett.* **B181**, 380 (1986).
119. Compactification of the Twisted Heterotic String (with V. Nair, A. Shapere and A. Strominger), *Nucl. Phys.* **B287**, 402 (1987).
120. Geometry of Self Propulsion at Low Reynolds Number (with A. Shapere), *Jour. Fluid Mech.* **198**, 557 (1989).
121. Internal Representations for Associative Memory (with E. Baum and J. Moody), NSF-ITP-86-138, *Biol. Cybernetics* **59**, 217 (1988).
122. Two Applications of Axion Electrodynamics, *Phys. Rev. Lett.* **58**, 1799 (1987).
123. Efficiencies of Self-Propulsion at Low Reynolds Number (with A. Shapere), *Jour. Fluid Mech.* **198**, 587 (1989).
124. Self-Propulsion at Low Reynolds Number (with A. Shapere), *Phys. Rev. Lett.* **58**, 2051 (1987).
125. Lattice Fermions, *Phys. Rev. Lett.* **59**, 2397 (1987).
126. Supervised Learning of Probability Distributions by Neutral Networks (with E. Baum), *Neural Information Processing*, ed. D. Anderson, AIP Press, 52-61 (1988).
127. A Modern Look at Newton's Final Queries (Contribution to Smithsonian Symposium, to appear).
128. Gauge Kinematics of Deformable Bodies (with A. Shapere), *Am. J. Phys.* **57**, 514 (1989).
129. Peculiar Spin and Statistics in 2+1 Dimensions (with R. MacKenzie), *Int. J. Mod. Phys.* **A3**, 2827 (1988).
130. Geometric Phases in Physics (a text and reprint volume, edited with A. Shapere) (World Scientific, 1989).
131. Self-Dual Models with θ Terms (with A. Shapere), *Nucl. Phys.* **B320**, 669 (1989).
132. Field Corrections to Induced Statistics (with A. Goldhaber, R. MacKenzie), *Mod. Phys. Lett.* **A4**, 21 (1989).
133. Possible New Form of Spontaneous T Violation (with J. March-Russell), *Phys. Rev. Lett.* **61**, 2066 (1988).
134. Induced Quantum Numbers in Some 2 + 1 Dimensional Models (with Y.-H. Chen), *Int. J. Mod. Phys.* **B3**, 1 (1989), Abstract: *Int. J. Mod. Phys.* **A4**, 493 (1989).
135. Aharonov-Bohm Interaction of Cosmic Strings with Matter (with M. G. Alford), *Phys. Rev. Lett.* **62**, 1071 (1989).
136. Chiral Spin States and Superconductivity (with X.G. Wen, A. Zee), *Phys. Rev.* **B39**, 11413 (1989).
137. Discrete Gauge Symmetry in Continuum Theories (with L.M. Krauss), *Phys. Rev. Lett.* **62**, 1221 (1989).
138. Gauge Theory of Deformable Bodies, in IXth Int'l. Congress on Mathematical Physics, B. Simon A. Truman and I.M. Davies, eds. (Adam Hilger, Bristol and NY, 1989), *Proceedings of IUPAM Swansea Conference*, pp. 220-233.
139. Gauge Theories of Swimming, *Phys. World* **2**, 36 (1989).
140. Adiabatic Effective Lagrangians (with J. Moody and A. Shapere), in *Geometric Phases in Physics*, by A. Shapere and F. Wilczek, *Adv. Series in Math. Phys.* **5** (World Scientific, Singapore, 1989).
141. Enhanced Baryon Number Violation Around Cosmic Strings (with M. Alford and J. March-Russell), *Nucl. Phys.* **B328**, 140 (1989).

142. On Anyon Superconductivity, (with Y-H. Chen, E. Witten and B. Halperin), *Int'l. Jour. Mod. Phys.* **B3**, 1001 (1989).
143. Hydrodynamic Relations in Superconductivity, (with M. Greiter and E. Witten), *Mod. Phys. Letts.* **B3**, 903 (1989).
144. Consequences of Time-Reversal-Symmetry Violation in Models of High T_c Superconductors, (with B.I. Halperin and J. March-Russell), *Phys. Rev.* **B40**, 8726 (1989).
145. Lectures on Fractional Statistics and Anyon Superconductivity, published in *Monographs and Textbooks in Physical Science - Lecture Notes* **17**, "Anomalies, Phases, Defects...", M. Bregola, G. Marmo and G. Morandi, eds., 1989.
146. Discrete Quantum Hair on Black Holes and the Nonabelian Aharonov-Bohm Effect, (with M. Alford and J. March-Russell), *Nucl. Phys.* **B337**, 695 (1990).
147. The Interactions and Excitations of Nonabelian Vortices (with M. Alford, K. Benson, S. Coleman and J. March-Russell), *Phys. Rev. Lett.* **64**, 1632 (1990). [89/69]
148. Spontaneous Fact Violation (with S. Giddings), *Int. J. Mod. Phys.* **A5**, 635 (1990) [90/01].
149. Space-Time Approach to Holonomy Scattering (with Y.-S. Wu), *Phys. Rev. Lett.* **65**, 13 (1990). [90/2]
150. Zero Modes of Non-Abelian Vortices (with M. Alford K. Benson, S. Coleman, and J. March-Russell), *Nucl. Phys.* **B349**, 414 (1991).
151. Infrared Behavior at Negative Curvature (with C. Callan), *Nucl. Phys.* **B340**, 366 (1990). [90/4]
152. Some Global Problems in Gauge Theories (Variations on a Theme of Aharonov and Bohm), in "*Quantum Coherence*" (World Scientific, 1990). [90/19]
153. Heuristic Principle for Quantized Hall States (with M. Greiter), *Mod. Phys. Lett.* **B4**, 1063 (1990). [90/35]
154. States of Anyon Matter, *Int'l. Jour. of Mod. Phys.* **B5**, 1273 (1991). [90/29]
155. Fractional Statistics and Anyon Superconductivity, a monograph and reprint collection, World Scientific (September, 1990).
156. Anomalous Dimensions of Anisotropic Gauge Theory Operators (with D. Robertson), *Phys. Lett.* **B251**, 434 (1990).
157. Positron Line Radiation as a Signature of Particle Dark Matter in the Halo (with M.S. Turner), *Phys. Rev.* **D42**, 1001 (1990).
158. Perspectives on Particle Physics and Cosmology, *Physica Scripta* **T36**, 281 (1991), invited talk at Nobel Symposium #79: "The Birth and Early Evolution of Our Universe," Gräfväallen, Östersund, Sweden, 6/90. [90/64]
159. Inflationary Axion Cosmology (with M.S. Turner), *Phys. Rev. Lett.* **66**, 5 (1991).
160. Fractional Quantum Numbers: A Conceptual Introduction, *Trends in Theoretical Physics*, Vol. 2, P. Ellis, Y. Tang, eds. (Addison-Wesley, 1991). [90/74]
161. Relic Gravitational Waves and Extended Inflation (with M.S. Turner), *Phys. Rev. Lett.* **65**, 3080 (1990).
162. Anyons for Anyone, *Phys. World* **4**, 40 (1990).
163. Cosmological Implications of Axinos (with K. Rajagopal and M.S. Turner), *Nucl. Phys.* **B358**, 447 (1991). [90/79]
164. Anyons, *Scientific American* **264**, #5, p. 58 (May, 1991).
165. Cosmology and Broken Discrete Symmetry (with S. Trivedi, J. Preskill and M.B. Wise), *Nucl. Phys.* **B363**, 207 (1991). [91/11]
166. Dynamical Effect of Quantum Hair (with S. Coleman and J. Preskill), *Int'l. Jour. Mod. Phys. Lett.* **A6**, 1631 (1991). [91/17]
167. Paired Hall State at Half Filling (with M. Greiter and X.G. Wen), *Phys. Rev. Lett.* **66**, 3205 (1991) [91/18].

168. Growing Hair on Black Holes (with J. Preskill and S. Coleman), *Phys. Rev. Lett.* **67**, 1975 (1991). [91/32]
169. Dual Dilaton Dyons (with A. Shapere and S. Trivedi), *Mod. Phys. Lett.* **A6**, 2677 (1991). [91/33]
170. Limitations on the Statistical Description of Black Holes (with P. Schwarz, A. Shapere and S. Trivedi), *Mod. Phys. Lett.* **A6**, 2353 (1991). [91/34]
171. Exact solutions and the adiabatic heuristic for quantum Hall states (with M. Greiter), *Nucl. Phys.* **B370**, 577 (1992). [91/45]
172. Unification of Couplings, (with S. Dimopoulos and S. Raby), *Physics Today* **44**, October 1991, p.25. [91/63]
173. Quantum Hair on Black Holes (with S. Coleman and J.Preskill), *Nucl. Phys.* **B378**, 175 (1992). hep-th/9201059 [91/64]
174. Paired Hall States (with M. Greiter and X.G. Wen), *Nucl. Phys.* **B374**, 567 (1992). [91/66]
175. Review of “Niels Bohr’s Times,” *Science* **225**, 345, (1991). [91/78]
176. Disassembling Anyons, *Phys. Rev. Lett.* **69**, 132 (1992). [91/70]
177. Black Holes as Elementary Particles (with C.F.E. Holzhey), *Nucl. Phys.* **B380**, 447 (1992). hep-th/9202014 [91/71]
178. Internal Frame Dragging and a Global Analogue of the Aharonov-Bohm Effect (with J. March-Russell and J. Preskill), *Phys. Rev. Lett.* **68**, 2567 (1992).hep-th/9112054 [91/92]
179. Quantum Mechanics, article in *World Book Encyclopedia*. [92/2]
180. Paired Hall States in Double Layer Electron Systems (with M. Greiter and X.G. Wen), *Phys. Rev.* **B46**, 9586, (1992). [92/1],
181. Application of the Renormalization Group to a Second Order QCD Phase Transition, *Int. Jour. Mod. Phys.* **A7**, 3911 (1992). [91/65]
182. Remarks on the Phase Transition in QCD, to appear in *Proceedings of the IFT Conference on Dark Matter*, January, 1992. [92/23]
183. QCD and Asymptotic Freedom: Perspectives and Prospects *Proceedings of Aachen “20 Years of QCD” Conference*, ed. P. Zerwas and H. Kastrup, pp. 16-39 (World Scientific, Singapore), June 1992 and *Int’l Jour. Mod. Phys.* **A8** 1359 (1993). hep-ph/9211290 [92/79]
184. The End of Physics?, *Discover* March 1993, 30.
185. Quantum Purity at a Small Price: Easing a Black Hole Paradox, *Proceedings of Houston Conference on Black Holes*, ed. S. Kalara and D. Nanopoulos, pp. 1-21 January 1992, (World Scientific, Singapore) . hep-th/9302096 [93/12]
186. Static and Dynamic Critical Phenomena at a Second Order QCD Phase Transition (with Krishna Rajagopal) *Nucl. Phys.* **B399** (1993) 395. hep-ph/9210253 [92/60]
187. Lectures (1-4) on Black Hole Quantum Mechanics, *The Black Hole 25 Years After*, eds. C. Teitelboim and J. Zanelli (World Scientific, New Jersey, 1998); also to appear in *IJMPA*.
188. A Philosopher in Spite of Himself, Review of *Dreams of a Final Theory*, *Physics Today*, April 1993.
189. Emergence of Coherent Long Wavelength Oscillations After a Quench: Application to QCD, (with Krishna Rajagopal), *Nucl. Phys.* **B404** (1993) 577. hep-ph/9303281 [93/16]
190. Beyond the Standard Model, *Proceeding of Texas/PASCOS 1992*, Berkeley, November 1992, *Annals of NYAS* **V688**, pp. 94-112, (1993). hep-ph/9304318 [93/23]
191. Liberating Exotic Slaves, published in *Quantum Coherence and Reality* Proceedings of Aharonov’s 60th Birthday, (World Scientific, Singapore, 1995). cond-mat/9408100 [94/58]
192. Fractional Statistics and Spin Charge Separation in 2+1 Dimensions (with M. Greiter and Z. Zou). (unpublished)
193. 10^{12} Degrees in the Shade (preprinted as “Hot Stuff: The High Temperature Frontier”), *The Sciences*, January/February 1994, 22. [93/50]

194. Geometric and Renormalized Entropy in Conformal Field Theory, (with C. Holzhey and F. Larsen), *Nucl. Phys.* **B 424** (1994) 443. hep-th/9403108 [93/88]
195. Remarks on Hot QCD, in *Proceedings of Quark Matter '93*, Borlange, Sweden, June 1993 and *Nucl. Phys* **A566** (1994) 123c. hep-ph/9308341 [93/48]
196. Status of QCD, *Proceeding of Lepton-Photon Conference*, ed. P. Drell and D. Rubib, pp. 593-619, Cornell University, Ithaca, NY, August 1993, (AIP Press). hep-ph/9311302 [93/69]
197. Non-Fermi Liquid Fixed Point in 2+1 Dimensions, (with Chetan Nayak), *Nucl. Phys.* **B417**, (1994) 359. cond-mat/9312086 [93/89]
198. On Geometric Entropy, (with Curtis Callan), *Phys. Lett.* **B333**, (1994) 55-61. hep-th/9401072 [93/87]
199. Exclusion Statistics: Low Temperature Properties, Fluctuations, Duality, Applications, (with C. Nayak), *Phys. Rev. Lett.* **73**, (1994) 2740. cond-mat/9405017 [94/25]
200. Renormalization Group Approach to Low Temperature Properties of a Non-Fermi Liquid Metal, (with C. Nayak), *Nucl. Phys.* **B 430**, (1994) 534. cond-mat/9408016 [94/59]
201. Statistical Transmutation and Phases of Two-Dimensional Quantum Matter, in Proceedings of 150th Anniversary of Boltzmann's Birth, Academi Lincei, Rome. cond-mat/9509085 [95/71]
202. Some Applications of a Simple Stationary Line Element for the Schwarzschild Geometry, (with P. Kraus), *Mod. Phys. Lett.* **A 9**, 3713, (1994). gr-qc/9406042 [94/46]
203. Self-Interaction Correction to Black Hole Radiance, (with P. Kraus), *Nucl. Phys.* **B 433**, (1995) 403. gr-qc/9408003 [94/61]
204. Geometric Entropy, Wave Functionals, and Fermions (with F. Larsen), *Annals of Physics*, **243**, 280, (1995). hep-th/9408089 [94/51]
205. Effect of Self-Interaction on Charged Black Hole Radiance (P. Kraus), *Nucl. Phys.* **B437** (1995) 231. hep-th/9411219 [94/101]
206. Spin, Electron Spin, Spin and Statistics, and Fermions and Bosons. *Macmillan Encyclopedia of Physics*, 1996 Edition, p. 1509-1511; 1511-1513; 1513-1514; and 547-549.
207. Symmetry Laws (Physics), Vol. 18, p. 89; Symmetry Breaking, Vol. 18, p. 86; Anyons, Vol. 1, p. 807; Geometric Phase, Vol. 8, p. 53; and Conservation Laws, Vol. 4, p. 368. *McGraw-Hill Encyclopedia of Science & Technology*, (8th Edition, 1997).
208. Review of Penrose's *Shadows of the Mind Science*, **266**, 1737, (1994).
209. Space-Time Aspects of Quasiparticle Propagation (with R. Levien and C. Nayak) *Int. J. of Mod. Phys.* **B 9**, 3189, (1995). cond-mat/9501050 [94/108]
210. Quantum Hall States of High Symmetry (with C. Nayak), *Nucl. Phys.* **B 450**, 558, (1995). cond-mat/9501052 [94/109]
211. Physical Properties of Metals from a Renormalization Group Standpoint (with C. Nayak), *International Jour. of Mod. Phys.* **B 10**, 847, (1996). cond-mat/9507040 [94/60]
212. Asymptotic Freedom (Dirac Medal Lecture), published by ICTP, Trieste, Italy. See Item 235.
213. From the Standard Model to Dark Matter, (invited talk at 5th Annual October Maryland Astrophysics Conference), published in conference proceedings. hep-ph/9501343 [94/112]
214. Realization of the Fredkin Gate Using A Series of One- And Two-body Operators, (with H.F. Chau), *Phys. Rev. Lett* **75** 748 (1995). quant-ph/9503005 [95/15]
215. Quantum Numbers of Hall Effect Skyrmions (with C. Nayak), cond-mat/9505081 [95/35]. (Superseded by Quantum Numbers of Textured Hall Effect Quasiparticles, Item 222, [95-104])
216. Indirect Neutrino Oscillations (with K.S. Babu and Jogesh Pati) *Phys. Lett.* **B 359**, 351, (1995). hep-ph/9505334 [95/37]
217. Renormalization of Black Hole Entropy and of the Gravitational Coupling Constant (with F. Larsen), *Nucl. Phys.* **B 458**, 249, (1996). hep-th/9506066 [95/49]
218. Spin-Singlet to Spin Polarized Phase Transition at $\nu = 2/3$: Flux-Trading in Action (with C. Nayak), *Nucl. Phys.* **B 455**, 493, (1995). cond-mat/9507016 [95/59]

219. Spin-Singlet Ordering Suggested by Repulsive Interactions (with C. Nayak), cond-mat/9510132 [95/75]. (Superseded by Possible Electronic Structure of Domain Walls in Mott Insulators, Item 225, [95-111])
220. Internal Structure of Black Holes (with F. Larsen), *Phys. Lett B* **375**, 37, 1996. hep-th/9511064 [95/92]
221. Remarks on the Phase Structure of QCD, *Particle Theory and Phenomenology Proceedings*, Iowa State University, May 1995, ed. Lassila, et al., pg. 47, (World Scientific, Singapore). [95/103]
222. Quantum Numbers of Textured Hall Effect Quasiparticles (with C. Nayak), *Phys. Rev. Lett.* **77**, 4418, (1996). cond-mat/9512061 [95/104]
223. Aspects of d-Density Order, to appear in Proceedings of Pacific Conference on Condensed Matter Theory: Complex Materials and Strongly Correlated Systems, Seoul, Korea, Dec. 2-5, 1995. [95/110]
224. QCD Interference Effects of Heavy Particles Below Threshold (with P. Kraus), *Phys. Lett. B* **382**, 262, (1996). hep-ph/9601279 [96/04]
225. Possible Electronic Structure of Domain Walls in Mott Insulators (with C. Nayak), *Int. J. Mod. Phys. B* **10**, 2125, (1996). cond-mat/9602112 [95/111]
226. A crack in the Standard Model?, *Nature* **Vol. 380**, 19-20, (7 March 1996).
227. Remarks on the Current-Carrying State of Hall Superfluids, Proceedings of 1st Jagna International Workshop on Advances in Theoretical Physics, Jagna, Bohol, Philippines, January 1995. [96/28]
228. Classical Hair in String Theory I: General Formulation (with F. Larsen), *Nucl. Phys. B* **475**, 627, (1996). hep-th/9604134 [96/35]
229. $2n$ Quasihole States Realize 2^{n-1} -Dimensional Spinor Braiding Statistics in Paired Quantum Hall States (with Chetan Nayak), *Nucl. Phys. B* **479**, 529, (1996). cond-mat/9605145 [96/52]
230. Experimental Consequences of a Minimal Messenger Model for Supersymmetry Breaking, (with K.S. Babu and C. Kolda), *Phys. Rev. Lett.* **77**, 3070, (1996). hep-ph/9605408 [96/55]
231. Particle Physics for Cosmology, Published in “Critical Dialogues in Cosmology” in celebration of the 250th Anniversary of Princeton University, 24-27 June 1996. Ed. Neil Turok, World Scientific (Singapore). hep-ph/9608285 [96/79]
232. Classical Hair in String Theory II: Explicit Calculations (with F. Larsen), *Nucl. Phys. B* **488**, 261, (1997). hep-th/9609084 [96-92]
233. Populated Domain Walls (with C. Nayak), *Phys. Rev. Lett.*, **78**, 2465, (1997). cond-mat/9609094 [96/93]
234. From Asymptotic Freedom to Unification to Supersymmetry (and Beyond), chapter in, *Physics in 2000 And Beyond* to be published by World Scientific Publishing Co. (UK) Ltd. [96-94]
235. Asymptotic Freedom, Lecture on receipt of the Dirac Medal, October 1994, published by ICTP, Trieste, Italy. hep-th/9609099 [96-95]
236. Resolution of Cosmological Singularities (with Finn Larsen), *Phys. Rev. D* **55**, 4591, (1997). hep-th/9610252 [96-108]
237. Review of *In Search of the Ultimate Building Blocks* by G. 'tHooft, *Nature*, **385**, 217, (16 Jan. 1997). [96-131]
238. The Future of Particle Physics as a Natural Science, Published in “Critical Problems in Physics” in celebration of the 250th Anniversary of Princeton University, November 1996, eds. Fitch, Marlow, and Dementi, Princeton University Press; also in *Int. Jour. Mod. Phys. A* **13**, 863, (1998); also in *Magazine of Physics, Science & Ideas* Vol. 1 No. 2) 12-25, (Dec. 1996). hep-ph/9702371 [97-11]

239. The Future of Particle Physics, In proceedings of the 11th Nishinomiya-Yukawa Memorial Symposium, “Physics in the 21st Century” Japan, November 1996, eds. Kikkawa, Kunitomo, & Ohtsubo. (World Scientific Singapore). [97-14]
240. Comments on the high- Q^2 HERA anomaly (with Babu, Kolda, March-Russell). *Phys. Lett. B* **402**, 367, (1997). hep-ph/9703299 [97/04]
241. Cross-Confinement in Multi-Chern-Simons Theories (with Lorenzo Cornalba), *Phys. Rev. Lett.* **78**, 4679, (1997). hep-th/9703131 [97/22]
242. Review of *The Inflationary Universe* by Alan Guth, *Science*, **276**, 1087, (16 May 1997). [97/43]
243. Review of *The Fabric of Reality* by David Deutsch, *Physics World*, 51, (June 1997). [97/44]
244. Mass Splittings from Symmetry Obstruction (with L. Cornalba), *Phys. Lett. B* **411**, 112-116, (1997). hep-th/9706014 [97-48]
245. Some Examples in the Realization of Symmetry, *Nucl. Phys. B* **68** (Proc. Suppl.), 367, (1998). hep-th/9710135 [97/116]
246. Panning for Gold at the K Stream, *Nature* **389**, 671 (16 Oct. 1997).
247. An Action for Black Hole Membranes (with M. Parikh), *Phys. Rev. D* **58**, 064011, (1998). gr-qc/9712077 [97-117]
248. QCD at Finite Baryon Density: Nucleon Droplets and Color Superconductivity (with M. Alford and K. Rajagopal), *Phys. Lett. B* **422**, 247-256, (1998). hep-ph/9711395 [97/119]
249. A Chern-Simons Effective Field Theory for the Pfaffian Quantum Hall State (with E. Fradkin, C. Nayak, and A. Tsvelik), *Nucl. Phys. B* **516**, 704-718 (1998). cond-mat/9711087 [97-120]
250. Colour Takes The Field, *Nature* **390**, 659 (18/25 Dec. 1998).
251. Neutrino Deficit Challenges Conservation Laws, *Nature* **391**, 123 (8 Jan. 1998).
252. Why are there Analogies between Condensed Matter and Particle Theory?, *Physics Today*, 11 (Jan. 1998).
253. Suggested New Modes in Supersymmetric Proton Decay, (with K.S. Babu and J. Pati), *Phys. Lett. B* **423**, 337-347, (1998). hep-ph/9712307 [97/136]
254. Riemann-Einstein Structure from Volume and Gauge Symmetry, *Phys. Rev. Lett.*, **80**, 4851, (1998). hep-th/9801184 [97-142]
255. Liberating Quarks and Gluons, *Nature*, **391**, 330-331, (22 Jan. 1998).
256. Back to Basics at High Temperature, *Physics Today*, 11 (April 1998).
257. Beyond The Standard Model: An Answer and Twenty Questions, two lectures given at the Ettore Majorana Summer School (1997), published in IN* ERICE 1997 highlights for subnuclear physics, 50 years later 291-327. hep-ph/9802400 [98-10]
258. Color Superconductivity and Signs of its Formation (with M. Alford and K. Rajagopal), in proceedings of Riken-BNL Workshop, November 1997. hep-ph/9802284 [98-13]
259. Quantum Field Theory, in the American Physical Society Centenary issue of *Rev. Mod. Phys.* **71**, S85-S95, (1999); More Things in Heaven and Earth— A celebration of Physics at the Millennium, ed. B. Bederson, (Springer-Verlag, New York), (1999). hep-th/9803075 [98-20]
260. CP Violation, Higgs Couplings, and Supersymmetry, (with K.S. Babu, C. Kolda and J. March-Russell), *Phys. Rev. D* **59**, 016004, (1999). hep-ph/9804355 [98/30]
261. Color-Flavor Locking and Chiral Symmetry Breaking in High Density QCD, (with M. Alford and K. Rajagopal), *Nucl. Phys. B* **537**, 443-458, (1999). hep-ph/9804403 [98-29]
262. From Notes to Chords in QCD, in proceedings of “QCD at Finite Baryon Density” Conference, April 1998, Universitaet Bielefeld, Bielefeld, Germany, *Nucl. Phys. A* **642**, 1c-13c, (1998). [98-56]
263. Projective Statistics and Spinors in Hilbert Space, hep-th/9806228 [98-61]
264. Particle Physics: The Standard Model Transcended, *Nature* **394**, 13-15, (2 July 1998).
265. Global Structure of Evaporating Black Holes (with M. Parikh), *Phys. Lett. B* **449**, 24-29, (1999). gr-qc/9807031 [98-57]

266. Imaginary Chemical Potential and Finite Fermion Density on the Lattice (with M. Alford and A. Kapustin), *Phys. Rev. D* **59**, 054502, (1999). hep-lat/9807039 [98-67]
267. Nuclear and Subnuclear Boiling, *Nature* **395**, 220-221 (17 September 1998).
268. Beyond The Standard Model: This Time for Real, in proceedings of XVIII International Conference on Neutrino Physics and Astrophysics, Takayama, Japan, June 4-9, 1998. [98-79]
269. Fermion masses, neutrino oscillations, and proton decay in the light of SuperKamiokande (with K.S. Babu and J. Pati), *Nuclear Physics B* **566** 33-91 (2000) hep-ph/9812538 [98-80].
270. High Density Quark Matter and the Renormalization Group in QCD with two and three flavors (with T. Schäfer), *Phys. Lett. B* **450**, 325-331, (1999). hep-ph/9810509 [98-90]
271. Continuity of Quark and Hadron Matter, (with Thomas Schäfer), *Phys. Rev. Lett.* **82** 3956-3959 (1999). hep-ph/9811473 [98-100]
272. The Persistence of Ether, *Physics Today*, **52**, 11-13, (January 1999).
273. The Long Life of a Thoughtful Teacher, review of *Geons, Black Holes and Quantum Foam: A Life in Physics* by John A. Wheeler with K. Ford, for *Science*, **282**, p. 1998, (1998).
274. Getting Its from Bits *Nature* **397**, 303-306 (28 Jan. 1999).
275. Reply in sonnet form, to Pinotti's letter to the Editor regarding Numerical Simulation (Item 256.), , 113 (March 1999).
276. Quark Description of Hadronic Phases (with T. Schäfer), *Phys. Rev. D* **60** 074014 (1999). hep-ph/9903503. [99-32]
277. Cosmic Molasses for Particle Masses, *New Scientist* **No 2181**, 32-37, (10 April 1999).
278. Minimal Potentials with Very Many Minima (with Marin Soljačić). *Phys. Rev. Lett.* **84**, 2285-2289, (2000) cond-mat/9904190 [99-39]
279. Reaching Bottom, Laying Foundations, *Nature*, special issue "A Celebration of Physics," for American Physical Society 100th anniversary, 4-5, (April 1999).
280. Superconductivity from perturbative one-gluon exchange in high density quark matter (with T. Schefer),, *Phys. Rev. D* **60**, 114033-1-114033-7, (1999). hep-ph/9906512 [99/58]
281. And you're glue *Nature* **400**, 21-23. (1 July 1999).
282. What QCD tells Us about Nature-and Why We Should Listen, keynote talk at PANIC'99, Uppsala, Sweden, June 10, 1999. *Nucl. Phys. A* **663&664**, 3c-20c, (2000). hep-ph/9907340[99-64]
283. The Recent Excitement in High -Density QCD, invited talk at PANIC '99, Uppsala, Sweden, June 1999. *Nucl. Phys. A* **663&7664**, 257c-271c, (2000). hep-ph/9908480 [99-68]
284. Reply to Walter L. Wagner, regarding Mukerjee's Article on the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory ["A Little Big Bang," March 1999], Letters to the Editors, *Scientific American*, 8, July 1999.
285. Hawking Radiation as Tunneling, (with M. Parikh), *Phys. Rev. Lett.* **85**, 5042-5045, (2000) hep-th/9907001 [98-22]
286. Review of Speculative "Disaster Scenarios" at RHIC(with W. Busza, R. L. Jaffe and J. Sandweiss), the Report of a Committee charged by Dr. John Marburger, Director of Brookhaven National Laboratory, to review potentially catastrophic processes that might be initiated by heavy ion collisions at the Relativistic Heavy Ion Collider. *Rev. Mod. Phys.* **72**, 1125-1140, (2000) hep-ph/9910333[99-87]
287. QCD In Extreme Conditions, Lectures given at CRM Summer School, "Theoretical Physics at the End of the XXth Century," June 27-July 10, Banff (Alberta), Canada. Published in *CRM Series in Mathematical Physics*. Saint-Aubin and Vinet, eds. (Springer) 567-636, (2000) hep-ph/0003183 [99-92]
288. Mass without Mass I: Most of Matter, *Physics Today*, (November 1999).
289. Maxwell's Other Demon, *Nature* **402**, 22-23, (4 November 1999).
290. Charged stripes from alternating static magnetic field, (with Oleg Tchernyshyov), *Phys. Rev. B* **62**, 4208 (2000) cond-mat/9911347 [99-108].

291. Mass without Mass II: The Medium is the Mass-age, *Physics Today*, 13-14, (January 2000).
292. Is the Sky made from Pi?, review of two books, *Just Six Numbers: The Deep Forces that Shape the Universe*, by Martin Rees, (Weidenfeld & Nicholson:1999); and *The Nine Numbers of the Universe*, by Michael Rowan-Robinson, (Oxford University Press:1999), for *Nature* **403**, 2479-2481, (20 January 2000).
293. Radical Conservatism and Nucleon Decay, Invited Lecture at NNN99 Workshop, September 23-25, 1999, at SUNY-Stony Brook, NY. Published in AIP conference Proceedings of NNN99, 62-73 (1999) hep-ph/0002045 [00-99].
294. Backyard Exotica, *Nature* **404**, 452-453, (30 March 2000).
295. Neutralino Dark Matter in Focus Point Supersymmetry, (with J.Feng and K. Matchev),*Phys. Lett. B* **482**, 388-399, (2000) hep-ph/0004043 [00-24]
296. Saltatory Relaxation of the Cosmological Term in String Theory, (with J. Feng, J. March-Russell and S. Sethi). *Nucl. Phys B* **602** 307-328 (2001) hep-th/0005276 [00-25]
297. Weinberg on Supersymmetry; Another Landmark Work, review of *the Quantum Theory of Fields, vol.3: Supersymmetry*, by Steven Weinberg for *Physics Today*, **53N555-56**, (May 2000).
298. QCD Made Simple, *Physics Today*, **53N8** 22-28, (2000) [MIT-CTP-3114].
299. Prospects for Indirect Detection of Neutralino Dark Matter, (with J. Feng and K. Matchev), *Phys.Rev. D* **63**, 4502-4504 (2001)astro-ph/0008115 [00-55] [MIT-CTP-3115].
300. Josephson Effect Without Superconductivity: Realization in Quantum Hall Bilayers, (with M. Fogler), *Phys. Rev. Lett.* **86**, 1833-1836 (2001), cond-mat/0007403 [MIT-CTP-3116].
301. The Condensed Matter Physics of QCD, (with K. Rajagopal), *Handbook of QCD*, ed. M. Shifman, World Scientific, 2016-2151 (2001) hep-ph/0011333 [MIT-CTP-3049].
302. Enforced Electrical Neutrality of the Color-Flavor Locked Phase, (with K. Rajagopal). *Phys. Rev. Lett.* **86**, 3492-3495 (2001), hep-/0012039 [MIT-CTP-3055].
303. Voyaging in Hilbert Space, *Fortschr Phys.*, **48** 9-11, 769-770 (2000) [MIT-CTP-3117].
304. Future Summary, (to be published in Proceedings of 2000 Meeting of Division of Particles and Fields, American Physical Society) hep-ph/0101187 (2001)[MIT-CTP -3072]; *Int. J. Mod. Phys. A*.**16 N10** 1653-1677 (2001).
305. Precision Precession, *Nature* **410** 28-29 (2001) [MIT-CTP-3118].
306. When Words Fail, *Nature* **410** 149 (2001) [MIT-CTP-3119].
307. The Dirac Equation, *It Must Be Beautiful, The Great Equations of Modern Science*, ed. G. Farmelo (Granta Books, 2002) 102-130 *Int. J. Mod. Phys. A* **19 S1** 45-74 (2004)[MIT-CTP-3120]
308. Learning From QCD, Proceedings:*EPIC 2000 workshop AIP Conference* **588** 13-33 [MIT-CTP-3121].
309. Observability of Earth-Skimming Ultra-High Energy Neutrinos (with J. Feng, P. Fisher, and T. Yu) *Phys. Rev. Lett.* **88-**, 161102, hep-ph/0105067 [MIT-CTP-3122].
310. The Minimal CFL-Nuclear Interface (with M. Alford, K. Rajagopal, and S. Reddy), *Phys.Rev. D* **64**, 074017 (2001) hep-ph/0105009 [MIT-CTP-3123].
311. Unified Field Theories, Vol. 17 *The Encyclopedia of Physical Science and Technology – Third Edition*, ed. R. Meyers (Academic Press, 2001) 339-349 [MIT-CTP-3124].
312. Scaling Mount Planck 1: A View from the Bottom, *Physics Today*, **54N6** 12-13 (2001) [MIT-CTP-3125].
313. Newton Rules (for now), *Nature* **410** 881-882 (2001) [MIT-CTP-3126].
314. Quantum Chromodynamics, book in preparation for Princeton University Press.
315. Quark-Gluon Matter, *McGraw-Hill Yearbook of Science & Technology* (2002) 298-299 [MIT-CTP- 3160].
316. Review of *ITEP Lectures on Particle Physics and Field Theory, Vols. 1 and 2* by M. Shifman for *Physics Today*, **53N8** 46-48 (2000) [MIT-CTP-3161].

317. What is Quantum Theory?, *Physics Today* , **53N6** 11-12, (2000) [MIT-CTP-3159].
318. Quantum Statistics, to appear in *Macmillan Encyclopedia of Physics, Supplement: Elementary Particle Physics* 2002 [MIT-CTP-3177].
319. The World's Numerical Recipe, *Daedalus* **131-1** 142-147 (2001) [MIT-CTP-3185].
320. Universality, *Nature* **415** 265 (2001) [MIT-CTP- 3186].
321. Scaling Mount Planck 2: Base Camp, *Physics Today*, **54N11** 12-13 (2001) [MIT-CTP 3187].
322. Particle and Astroparticle Searches for Supersymmetry (with J. Feng and K. Matchev) to appear in *Snowmass Proceedings 2001* (American Physical Society)[MIT-CTP 3199].
323. Reply to C. Alden Meade (Question of Fundamental Constants), *Physics Today*, **54N11** 15 (2001).
324. Fermi and Elucidation of Matter, *Fermi Remembered*, ed. James W. Cronin (University of Chicago Press 2004) 34-51 [MIT-CTP 3227]
325. Obituary of William Edward Caswell (with C. Callan), *Physics Today*, **54N12** 74-75 (2001)
326. Four Big Questions with Pretty Good Answers, delivered at Symposium in Honor of Heisenberg's 100th birthday, December 6, 2001 *Fundamental Physics-Heisenberg and Beyond*, ed. Gerd W. Buschhorn, Julius Wess, (Springer 2004) hep-ph/0201222 [MIT-CTP-3236].
327. The Social Benefit of High-Energy Physics, to appear in *Macmillan Encyclopedia of Physics, Supplement: Elementary Particle Physics* 2002 [MIT-CTP - 3237].
328. Scaling Mount Planck 3: Is That All There Is? *Physics Today*, **55N8** 10-11 (2002) [MIT-CTP-3276].
329. Depilating global charge from thermal black holes,(with J. March-Russell) hep-th/0203170 [MIT-CTP -3268].
330. Some Basics Aspects of Fractional Quantum Number, Commentary for the Volume "Selected papers of J. Robert Schrieffer" ed. N.E. Bonesteel, L.P. Gor'kov, World Scientific, 135-152 (2002) cond-mat/0206122 [MIT-CTP -3275].
331. Interior Gap Superfluidity, *Phys. Rev. Lett.* **90** 047002 (W. Vincent Liu) cond-mat/0208052 [MIT-CTP -3279].
332. QCD and Natural Philosophy, (Plenary talk at UNESCO TH2002 Conference),(2002) *Annales Henri Poincare* **4**, S211-S228, (2003) physics/0212025 [MIT-CTP-3328].
333. Inventory and Outlook of High Energy Physics, (Summary talk at ICHEP 2002 -Rochester Conference), *Nucl. Phys B* **117** (Proc Suppl.) 410-430 (2003) hep-ph/0212128 [MIT-CTP-3329].
334. Opportunities Challenges and Fantasies in Lattice QCD, (Keynote talk at LATTICE 2002), *Nucl. Phys B* **119**(Proc. Suppl.) 3-12 (2003) hep-lat/0212041 [MIT-CTP-3337].
335. Life's Parameters, *Physics Today*, **56N2** 10-11 (2003), [MIT-CTP-3339].
336. Inaugural Editorial Letter, *Annals of Physics* **303** (2003).
337. Review of P. Atkins *Galileo's Finger*, *Nature* **422** 377 (2003).[MIT-CTP-3358]
338. Breached Pairing Superfluidity: Possible Realization in QCD, *Phys. Rev. Lett.* **91** 32001 (with E. Goubankova and W. Vincent Liu) (2003).hep-ph/0304016[MIT-CTP-3357]
339. Analysis and Synthesis I: What Matters for Matter, *Physics Today*, **56N5**10-11 (2003), [MIT-CTP-3363].
340. Analysis and Synthesis II: Universal Characteristics, *Physics Today*, **56N7**10-11 (2003), [MIT-CTP-3398].
341. Diquarks and Exotic Spectroscopy,(with R.L. Jaffe) *Phys.Rev.Lett.* **91** 232003 (2003), hep-ph/0307341 [MIT-CTP-3401].
342. The Origin of Mass, Annual *Physics@MIT* 24-35 (2003) [MIT-CTP-3410].
343. Review of J. Al-Khalili *Quantum: A Guide for the Perplexed*, *Nature* **424** 997-8 (2003),[MIT-CTP-3412]

344. The World's Numerical Recipe, in *The Best American Science Writing 2003*, ed. Oliver Sacks, 96-101 (Harper-Collins 2003).
345. Analysis and Synthesis III: Cosmic Groundwork, *Physics Today*, **56N10**10-11 (2003), [MIT-CTP-3427].
346. Thermal Decay of the Cosmological Constant into Black Holes. (with A. Gomberoff, M. Henneaux, C. Teitelboim) (2003), *Phys.Rev.D* **69**, 083520 (2004) hep-th/0311011 [MIT-CTP-3433].
347. Spin-Orbit Ordering, Momentum Space Coexistence, and Cuprate Superconductivity (with W. Vincent Liu) (2003), cond-mat/0312685 [MIT-CTP-3436].
348. Spin dependent Hubbard Model and a Quantum Phase Transition in Cold Atoms (with W. Vincent Liu and Peter Zoller) (2004), cond-mat/0404478 [MIT-CTP-3437].
349. Systematics of Exotic Cascade Decays (with R.L. Jaffe) hep-ph/0312369 (2003), *Phys. Rev. D* **69** 114017, (2004)[MIT-CTP-3463].
350. From Concept to Reality to Vision (2004), hep-ph/0401035 (speech accepting EPS high energy physics prize, to be published in the proceedings), European Physical Journal C [MIT-CTP-3460] .
351. A Perspective on Pentaquarks (with R.L. Jaffe) (2004), hep-ph/0401034 (plenary talk at EPS conference, to be published in the proceedings, European Physical Journal C [MIT-CTP-3461].
352. Analysis and Synthesis IV: Limits and Supplements, *Physics Today*, **57N11**0-11 (2004), [MIT-CTP-3464].
353. The Universe is a Strange Place, (keynote talk at SpacePart 03: 2nd International Conference on Particle and Fundamental Physics in Space, Washington, DC, to be published in *Nuclear Physics B Proceedings Supplements* (2004) astro-ph/0401347 [MIT-CTP-3465].
354. A Constructive Critique of the Three Standard System, (2004) hep-ph/0401126 (to be published in the proceedings of Advanced Studies Institute: Physics at LHC-Praha-2003, Prague, CR) [MIT-CTP-3465].
355. From 'not wrong' to (maybe) right, *Nature* **428** 261 (2004), physics/0403115 [MIT-CTP-3480].
356. Total Relativity: Mach 2004, *Physics Today*, **57N41**0-11 (2004) [MIT-CTP 3482].
357. Stability Criteria for Breached Pair Superfluidity (with Michael McNeil Forbes, Eleana Goubankova and W. Vincent Liu) (2004) hep-ph/0405059 [MIT-CTP-3491]
358. Quarks, Diquarks and Pentaquarks (with R.L. Jaffe), *Physics World*, **17** 25-30 2004, [MIT-CTP-3492].
359. Answers to "What is the physicist's concept of symmetry?", "Could we tell if left and right where reversed?" in Access Science @ Mc Graw-Hill, www.accessscience.com
360. Yang-Mills Theory In, Beyond, and Behind Observed Reality, to appear in "50 years of Yang-Mills Theory" (World Scientific) hep-ph/0405147 [MIT-CTP 3493].
361. A Model of Anthropic Reasoning, Addressing the Dark to Ordinary Matter Coincidence, to appear in "Universe or Multiverse" (Cambridge University) ed. B. Carr (2004) hep-ph/0408167 [MIT-CTP-3526].
362. Whence the Force of $F=ma$? 1: Culture Shock, to appear in *Physics Today* (2004) [MIT-CTP-3527].
363. Diquarks as Inspiration and as Objects, to appear in *Kogan Memorial volume* (World Scientific) ed. M. Shifman (2004) hep-ph/0409168 [MIT-CTP-3529].
364. Breached Superfluidity in P-wave, (with E. Goubankova and E. Mishchenko) (2004) cond-mat/0409088 [MIT-CTP-3528].
365. Doing science gave me freedom, to appear in 40th anniversary issue "One Hundred Reasons To Be a Scientist", (the abdu salam international centre for theoretical physics) (2004) [MIT-CTP-3530].

366. In Search of Lost Symmetry: The Higgs Sector, to appear in special issue of *Nature* (2004) [MIT-CTP-3531].
367. Hadron Systematics, Diquark Correlations, and Exotics, (with A. Selem) (2004) [MIT-CTP-3532].
368. Reply to letters commenting on *Reference Frame article* Analysis and Synthesis IV: Limits and Supplements *Physics Today*, **57N9**14-15 (2004)

15 September 2004