CURRICULUM VITA

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Born: 30 March 1935, New Haven, Connecticut, USA

Education:

1956	A.B., Harvard (Mathematics, summa cum laude)
1957	A.M., Harvard (Physics)
1961	Ph.D., Harvard (Physics)

Positions:

1961 - 1963	NSF Postdoctoral Fellow, University of Birmingham, England
1963 - 1964	Postdoctoral Associate, University of California, San Diego
1964 - 1967	Assistant Professor, Cornell University
1967 - 1972	Associate Professor, Cornell University
1972 - 1990	Professor, Cornell University
1984 - 1990	Director, Laboratory of Atomic and Solid State Physics
1990 - 2006	Horace White Professor of Physics, Cornell University
2006 -	Horace White Professor of Physics Emeritus, Cornell University

Visiting Positions and Lecturerships:

1970 - 1971	Visiting Professor, Instituto di Fisica "G. Marconi," Rome
1978 - 1979	Senior Visiting Fellow, University of Sussex
1980	Morris Loeb Lecturer, Harvard University
1981	Emil Warburg Professor, University of Bayreuth
1982	Phillips Lecturer, Haverford College
1982	Japan Association for the Advancement of Science Fellow, Nagoya
1984	Walker-Ames Professor, University of Washington
1987	Welch Lecturer, University of Toronto
1990	Sargent Lecturer, Queens University, Kingston Ontario
1991	Joseph Wunsch Lecturer, the Technion, Haifa
1993	Feenberg Lecturer, Washington University, St. Louis
1993	Guptill Lecturer, Dalhousie University, Halifax
1994	Chesley Lecturer, Carleton College
1995	Lorentz Professor, University of Leiden
1995	Brattain Lecturer, Whitman College
1995	Tanner Lecturer, Utah Academy of Sciences, Arts, & Letters
1997	Cruikshank Lecturer, University of Rhode Island
1997	Konopinski Lecturer, Indiana University
1998	Distinguished Scientist, Trinity University, San Antonio
2002	Wolfgang Paul Lecturer, University of Bonn
2004	Hamister Distinguished Lecturer in Physics, Kenyon College

2004	Tenneco Lecturer, University of Houston
2005	Coulter McDowell Lecturer, Royal Holloway, University of London
2006	Oakes Lecturer, University of Texas, Austin
2007	Hamilton Lecturer, Princeton University
2007	Walter Kohn Lecturer, University of Sherbrooke, Quebec
2008	Oppenheimer Lecturer, University of California, Berkeley
2008	Mueller Lecturer, Pennsylvania State University
2009	Visiting Professor, Niels Bohr Institute, Copenhagen
2010	Misel Lecturer, University of Minnesota
2011	Hofstadter Lecturer, Stanford University
2012	Fellow, Stellenbosch Institute for Advanced Study

Fellowships and Awards:

1966 - 1970	Sloan Foundation Fellow
1970	Fellow, American Physical Society
1970 - 1971	Guggenheim Foundation Fellow
1988	Member American Academy of Arts and Sciences
1989	First recipient, Lilienfeld Prize of the American Physical Society
1991	Member National Academy of Sciences
1994	Klopsteg Memorial Award, Am. Assoc. Physics Teachers
1997	Russell Distinguished Teaching Award, Cornell University
2010	Majorana Prize, EJTP Best Person in Physics
2011	Outstanding Referee, American Physical Society
2015	Member, American Philosophical Society
2017	Dagmar and Václav Havel Foundation VIZE 97 Prize

PUBLICATIONS, N. DAVID MERMIN

Books:

Space and Time in Special Relativity, McGraw-Hill, New York, 1968.

Solid State Physics, with N. W. Ashcroft, Holt, Rinehart and Winston, New York, 1976. *Translations:* Russian, 1979; Japanese, 1981-2; Polish, 1986; German, 2001; French, 2002; Portuguese, 2011.

Boojums all the Way Through — Communicating Science in a Prosaic Age, Cambridge University Press, 1990. *Translations:* Japanese, 1994.

It's About Time: Understanding Einstein's Relativity, Princeton University Press, 2005. *Translations:* Polish, 2008; Romanian, 2009; German, 2016; Greek, 2017.

Quantum Computer Science: An Introduction, Cambridge University Press, 2007. *Translations:* Japanese, 2009; French, 2010.

Why Quark Rhymes with Pork and Other Scientific Diversions, Cambridge University Press, 2016.

Mysl, smysl, svět (in Czech only), Dagmar and Václav Havel Foundation, Prague, 2017.

Technical Articles:

1. "The Second-Order Distribution of Integrated Shot Noise," *IRE Transactions on Information Theory* **5**, 75 (1959), with J. Keilson.

2. "A Theorem on Cross Correlation Between Noisy Channels," *IRE Transactions on Information Theory* **5**, 77 (1959), with J. Keilson and P. Bello.

3. "Determination of Thermodynamic Green's Functions," *J. Math. Phys.* **2**, 232 (1961), with G. Baym.

4. "Two Models of Brownian Motion," *Am. J. Phys.* **29**, 510 (1961).

5. "RPA Instability and the Gas-Liquid Transition. Part I," *Ann. Physics* **18**, 421 (1962).

6. "RPA Instability and the Gas-Liquid Transition. Part II. Effect of Short Range Repulsion," *Ann. Physics* **18**, 454 (1962).

7. "Stability of the Thermal Hartree-Fock Approximation," *Ann. Physics* **21**, 99 (1963).

8. "Long Wavelength Oscillations of a Quantum Plasma in a Uniform Magnetic Field," *Ann. Physics* **26**, 247 (1964), with Eric Canel.

9. "Oscillations of a Quantum Electron Gas in a Uniform Magnetic Field," in *Lectures on the Many Body Problem*, Proceedings of the 5th International School of Physics, Ravello, Italy, E. R. Caianello, ed., Volume 2 (Academic Press, 1964), with Eric Canel.

10. "Time-Dependent Correlations in a Solvable Ferromagnetic Model," *Phys. Rev.* **134**, A112 (1964).

11. "Long Wavelength Oscillations of a Quantum Plasma in a Uniform Magnetic Field. II," Ann. Physics **30**, 249 (1964), with V. Celli.

12. "Instability in the Quantum Helicon Dispersion Relation," *Phys. Rev.* **136**, A346 (1964), with V. Celli.

13. "Thermal Properties of the Inhomogeneous Electron Gas," *Phys. Rev.* **137**, A1441 (1965).

14. "Ground State of an Electron Gas in a Magnetic Field," *Phys. Rev.* **140**, A839 (1965), with V. Celli.

15. "A Short Simple Evaluation of Expressions of the Debye-Waller Form," *J. Math. Phys.* **7**, 1038 (1966).

16. "Absence of Ferromagnetism or Antiferromagnetism in One- or Two-Dimensional Isotropic Heisenberg Models," *Phys. Rev. Lett.* **17**, 1133 (1966), with H. Wagner.

17. "Existence of Zero Sound in a Fermi Liquid," *Phys. Rev.* **159**, 161 (1967).

18. "Absence of Ordering in Certain Classical Systems," *J. Math. Phys.* **8**, 1061 (1967).

19. "Fermi-Liquid Effects in Magnetoplasma Modes in Alkali Metals," *Phys. Rev. Lett.* **20**, 839 (1968), with Y. C. Cheng.

20. "Magnetoplasma Modes in Alkali Metals," *Phys. Rev. Lett.* **20**, 1486 (1968), with Y. C. Cheng and J. S. Clarke.

21. "Exact Lower Bounds for Some Equilibrium Properties of a Classical One-Component Plasma," *Phys. Rev.* **171**, 272 (1968).

22. "Crystalline Order in Two Dimensions," *Phys. Rev.* **176**, 250 (1968). Erratum: *Phys. Rev. B* **20**, 4762 (1979). Erratum: *Phys. Rev. B* **74**, 149902(E) (2006).

23. "Some Applications of Bogolyubov's Inequality in Equilibrium Statistical Mechanics," *J. Phys. Soc. Japan* **26** Supplement, 203 (1969).

24. "Attenuation of Transverse Zero Sound in He^3," *Phys. Rev.* **180**, 225 (1969), with L. R. Corruccini, J. S. Clarke and J. W. Wilkins.

25. "Absence of Anomalous Averages in Systems of Finite Thickness or Cross Section," *Phys. Rev.* **185**, 760 (1969), with G. V. Chester and M. E. Fisher.

26. "Lindhard Dielectric Function in the Relaxation-Time Approximation," *Phys. Rev. B* **1**, 2362 (1970).

27. "Condensation of the Rotating Two-Dimensional Ideal Bose Gas," *Phys. Rev. B* **1**, 3160 (1970), with J. J. Rehr.

28. "Zero Sound in Anisotropic Metals," *Ann. Phys.* **60**, 27 (1970), with Y. C. Cheng.

29. "Solvable Model of a Vapor-Liquid Transition with a Singular Coexistence-Curve Diameter," *Phys. Rev. Lett.* **26**, 169 (1971).

30. "Lattice Gas with Short-Range Pair Interactions and a Singular Coexistence-Curve Diameter," *Phys. Rev. Lett.* **26**, 957 (1971).

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32. "Asymmetry in the Liquid and Vapor Density Fluctuations at the Critical Point," *Phys. Rev. A* **4**, 2408 (1971), with J. J. Rehr.

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34. "Models with Particle-Hole Symmetry and Singular Coexistence-Curve Diameters," *Phys. Rev. A* **7**, 379 (1973), with J. J. Rehr.

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39. "d-Wave Pairing Near the Transition Temperature," *Phys. Rev. A* **9**, 868 (1974).

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41. "f-Wave Pairing of Parallel Spins Near the Transition Temperature," *Phys. Rev. B* **13**, 112 (1976).

42. "Circulation and Angular Momentum in the A Phase of Superfluid Helium-3," *Phys. Rev. Lett.* **36**, 594 (1976), with Tin-Lun Ho.

43. "Games to Play with ^{3}He-A," *Physica* **90B**, 1 (1977).

44. "Surface Singularities and Superflow in ^{3}He-A," in *Quantum Fluids and Solids*, S. B. Trickey, E. D. Adams, and J. W. Dufty, eds. (Plenum Press, 1977), pp. 3-22. Reprinted in *Topological Quantum Numbers in Nonrelativistic Physics*, David J. Thouless, ed. (World Scientific, Singapore, 1998), pp. 259-278.

45. "Superfluidity in Helium-3," in *Quantum Liquids*, J. Ruvalds and T. Regge, eds. (North-Holland, 1978), p. 195.

46. "Modeli s p-sparivaniem dlya A-fazi sverkhetkuchevo geliya-3," in *Sverkhtekuchestv Geliya-3*, Izdatelstvo Mir, 1977, with G. Stare.

47. "Stability of Superflow in ^{3}He-A," *Phys. Rev. Lett.* **39**, 1290 (1977), with P. Bhattacharyya and Tin-Lun Ho.

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53. "Current Density in the BCS Ground State for a Spatially Non-Uniform Anisotropic Superfluid," in *Modern Trends in the Theory of Condensed Matter*, Proceedings of the XVI Karpacz Winter School of Theoretical Physics, February 1979, A. Pekalski and J. Przystawa, eds. (Springer-Verlag, New York, 1980).

54. "Gauge Wheel of Superfluid ^{4}He," *Phys. Rev. Lett.* **44**, 330 (1980), with T.-L. Ho.

55. "Equilibrium Order Parameters and Chemical Potentials in Rotating Superfluids," *Phys. Rev. B* **21**, 5190 (1980), with T.-L. Ho.

56. ''Quantum Mechanics vs. Local Realism Near the Classical Limit: A Bell Inequality for Spin s," *Phys. Rev. D* **22**, 356 (1980).

57. "Joint Distributions and Local Realism in the Higher-Spin Einstein-Podolsky-Rosen Experiment," *Found. Phys.* **12**, 101 (1982), with Gina Schwarz.

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61. "Comment on 'Resolution of the Einstein-Podolsky-Rosen and Bell Paradoxes'," *Phys. Rev. Lett.* **49**, 1214 (1982).

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63. "Local Realism and Measured Correlations in the spin-s Einstein-Podolsky-Rosen Experiment," *Phys. Rev. D* **27**, 339 (1983), with A. Garg.

64. "Pair Distributions and Conditional Independence: Some Hints About the Structure of Strange Quantum Correlations," *Philosophy of Science* **50**, 359 (1983).

65. "Relieving Cholesteric Frustration: The Blue Phase in a Curved Space," *Phys. Rev. Lett.* **51**, 467 (1983), with J. P. Sethna and D. C. Wright.

66. "Farkas's Lemma and the Nature of Reality: Statistical Implications of Quantum Correlations," *Found. Phys.* **14**, 1 (1984), with A. Garg.

67. "Pitfalls of the Relaxation Time Approximation: Hydrodynamic Sound in a Multicomponent Fermi Liquid," *J. Low Temp. Phys.* **59**, 115 (1985), with S. Troian.

68. "Mean-Field Theory of Quasicrystalline Order," *Phys. Rev. Lett.* **54**, 1524 (1985), with S. Troian.

69. "Cholesteric Blue Phases in the High-Chirality Limit," *Phys. Rev. A* **31**, 3498 (1985), with David C. Wright.

70. "Mean Field Theories of Quasicrystalline Order," *Ferroelectrics* **66**, 127 (1986), with S. Troian.

71. "Generalizations of Bell's Theorem to Higher Spins and Higher Correlations, in *Fundamental Questions in Quantum Mechanics*, Laura M. Roth and Akira Inomata, eds. (Gordon and Breach, NY, 1986), p. 7.

72. "The EPR Experiment—Thoughts about the 'Loophole'," in *New Techniques and Ideas in Quantum Measurement Theory*, Daniel M. Greenberger, ed. (New York Academy of Sciences, NY, 1986), Vol. 480, p. 422.

73. "Detector Inefficiencies in the Einstein-Podolsky-Rosen Experiment," *Phys. Rev. D* **35**, 3831 (1987), with A. Garg.

74. "Rudimentary Quasicrystallography: The Icosahedral and Decagonal Reciprocal Lattices," *Phys. Rev. B* **35**, 5487 (1987), with D. S. Rokhsar and D. C. Wright.

75. "Beware of 46-Fold Symmetry: The Classification of Two-Dimensional Quasicrystallographic Lattices," *Phys. Rev. Lett.* **58**, 2099-2101 (1987), with D. S. Rokhsar and D. C. Wright.

76. "The Two-Dimensional Quasicrystallographic Space Groups with Rotational Symmetries Less than 23-Fold," with D. S. Rokhsar and D. C. Wright, *Acta Cryst. A* **44**, 197-211 (1988).

77. "A New Representation for the Quantum Theoretic Rotation Matrix that Reveals the Classical Limit of Einstein-Podolsky-Rosen Correlations," in *Proceedings of the Urbino Conference on Microphysical Reality and Quantum Formalism*, A. van der Merwe, F. Selleri and G. Tarozzi, eds. (Kluwer Academic Publishers, 1988), p. 339.

78. "Instability of Quasicrystalline Order in the Local Kalugin-Kitaev-Levitov Model," *Phys. Rev. B* **38**, 3699 (1988), with Lisbeth Gronlund.

79. "Scale Equivalence of Quasicrystallographic Space Groups," *Phys. Rev. B* **37**, 8145-8149 (1988), with Daniel S. Rokhsar and David C. Wright.

80. "Aperiodic Tilings with Non-Symmorphic Space Groups $p2^jgm$," *Acta Cryst. A* **44**, 678-688 (1988), with David A. Rabson and Tin-Lun Ho.

81. "Reinventing Crystallography: The Forbidden Lattices and Spacegroups," XVIIth International Colloquium on Group Theoretical Methods in Physics, Y. Saint-Aubin and L. Vinet, eds. (World Scientific Publishing Co., 1989), pp. 103-126.

82. "Space Groups of Quasicrystallographic Tilings," *Acta Cryst. A* **45**, 538 (1989), with D. A. Rabson and T.-L. Ho.

83. "Crystalline Liquids: The Blue Phases," *Revs. Mod. Phys.* **61**, 385 (1989), with D. C. Wright.

84. "Stacking Quasicrystallographic Lattices," *Phys. Rev. B* **15**, 10,498-502 (1990), with D. A. Rabson, D. S. Rokhsar, and D. C. Wright.

85. "Generalized Crystallography in Two and Three Dimensions", in *Quasicrystals*, Proceedings of the 12th Taniguchi Symposium, eds. T. Fujiwara and T. Ogawa, Springer-Verlag, New York, 1990.

86. "Extreme Quantum Entanglement in a superposition of Macroscopically Distinct States", N. David Mermin, *Phys. Rev. Lett.* **65**, 1838 (1990).

87. "Simple Unified Form for the Major No-Hidden-Variables Theorems", N. David Mermin, *Phys. Rev. Lett.* **65**, 3373 (1990).

88. "The Space Groups of Axial Crystals and Quasicrystals", with David A. Rabson, Daniel S. Rokhsar, and David C. Wright, *Revs. Mod. Phys.* **63**, 699-733 (1991).

89. "Can a Phase Transition Make Quantum Mechanics Less Embarrassing", *Physica* **177**, 561 (1991).

90. "(Quasi)crystallography is better in Fourier space", in *Quasicrystals: The State of the Art,* eds. P. J. Steinhardt and D. P. DiVincenzo, World Scientific, 1991, pps. 133-183.

91. "The Space Groups of Icosahedral Quasicrystals and Cubic, Orthorhombic, Monoclinic, and Triclinic Crystals", *Revs. Mod. Phys.* **64**, 3-51 (1992). Errata: **64**, 635 (1992); **64**, 1163 (1992); **66**, 249 (1994).

92. "Not quite so simply no hidden variables", *Am. J. Phys.* **60**, 25 (1992).

93. "Quantum Cryptography Without Bell's Theorem and Without EPR", with Charles H. Bennett and Gilles Brassard, *Phys. Rev. Lett.* **68**, 557-559 (1992).

94. "Bravais Classes for the Simplest Incommensurate Crystal Phases", with Ron Lifshitz, *Acta. Cryst. A* **48**, 515 (1992).

95. "Copernican Crystallography", *Phys. Rev. Lett.* **68**, 1172 (1992).

96. "J. S. Bell Memorial Lecture: Some simple unified versions of the two theorems of John Bell", Proceedings of the XIX International Colloquium on Group Theoretical Methods in Physics, Anales de Física, Monografías, M. A. Olmo and M. Santander eds., CIIEMAT/RSEF, Madrid (1993), Vol. II, p. 3.

97. "Crystallography without periodicity", Proceedings of the XIX International Colloquium on Group Theoretical Methods in Physics, Anales de Física, Monografías, M. A. Olmo and M. Santander eds., CIIEMAT/RSEF, Madrid (1993), Vol. II, p. 302.

98. "Hidden Variables and the Two Theorems of John Bell", *Revs. Mod. Phys.* **65**, 803-815 (1993).

99. "Space Groups of Trigonal and Hexagonal Quasiperiodic Crystals of Rank Four", Ron Lifshitz and N. David Mermin, *Acta Cryst. A* **50**, 72-85 (1994).

100. "Bravais Classes and Space Groups of Trigonal and Hexagonal Quasiperiodic Crystals of Arbitrary Finite Rank", with Ron Lifshitz, *Acta Cryst. A* **50**, 85-97 (1994).

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103. "Color Symmetry of Aperiodic Structures", with Ron Lifshitz, in *Aperiodic '94, An International Conference on Aperiodic Crystals,* ed. G. Chapuis (World Scientific, Singapore, 1995), pp 77-81.

104. "The Symmetry of Composite Crystals", with Ron Lifshitz, in *Aperiodic '94, An International Conference on Aperiodic Crystals,* ed. G. Chapuis (World Scientific, Singapore, 1995), pp 82-86.

105. "Symmetry Changes in Rank–Lowering Phase Transitions", with Ron Lifshitz, in *Aperiodic '94, An International Conference on Aperiodic Crystals,* ed. G. Chapuis (World Scientific, Singapore, 1995), pp 267-271.

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108. "Hidden Quantum Non-Locality", in *Perspectives on Quantum Reality*, Robert K. Clifton ed., Kluwer Academic, 1996, 57-71.

109. "Superspace Groups Without the Embedding: The Link between Superspace and Fourier-space Crystallography", with Jörg Dräger, *Phys. Rev. Lett.* **76**, 1489-1492 (1996).

110. "Reply to Comment on 'Correlation Inequalities and Hidden Variables', with Anupam Garg, *Phys. Rev. Lett.* **76**, 2197 (1996).

111. "How to Ascertain the Values of Every Member of a Set of Observables that Cannot All Have Values", in *Potentiality, entanglement, and Passion-at-a-Distance*, Cohen, Horne, and Stachel, eds., Kluwer Academic, 1997, 145-153

112. "The Symmetry of Crystals", in *The Mathematics of Long-Range Aperiodic Order*, R. V. Moody (ed.), Kluwer Academic, 1997, 377-401.

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