

GERALD L. JONES

PROFESSOR OF PHYSICS

TENURED

**AT NOTRE DAME
SINCE 1963**

BORN: March 17, 1935

AT: Kansas City, Missouri

University of Kansas; 1956; B.S.
University of Kansas; 1961; Ph.D.

Postdoctoral Research Associate, University of Iowa, 1961-1963
Assistant Professor, University of Notre Dame, 1963-1966
Associate Professor, University of Notre Dame, 1966-1970
Professor, University of Notre Dame, 1970-present
Visiting Professor, Cornell University, Fall 1983
Visiting Professor, University of Chicago, Spring 1984

Research Area:

Statistical Physics, Condensed Matter

Invited Addresses:

Case Institute of Technology, November, 1964
National Bureau of Standards, March, 1966
University of Ohio, November, 1967
Brookhaven National Laboratory, August, 1967
South Dakota School of Mines and Technology, April, 1968
University of Texas (Austin), April, 1969
Ford Scientific Laboratory, March, 1969
University of Texas (Austin), April, 1970
Western Michigan University, 1970
Cornell University, October 18, 1983
University of Chicago, February 13, 1984
Southern Illinois, November 9, 1984
Boston University, August 10 to August 15, 1986

Awards:

President's Award (University of Notre Dame), 1974
Outstanding Research Award (Sigma Xi), 1982

List of Scientific Publications

- “Interaction of Elastic Waves in an Isotropic Solid,” G.L. Jones and D.R. Kobett, J. Acoust. Soc. Am. 35, 5 (1963).
- “Influence of Initial Correlations on the Approach to Equilibrium,” Gerald L. Jones, J. Math. Phys. 5, 651 (1964).
- “A Method for Treating Fluctuations of Dynamical Variables,” Gerald L. Jones, J. Math. Phys. 6, 106 (1965).
- “Fluctuations in Equilibrium and Nonequilibrium Ensembles,” Gerald L. Jones and Michael Davies, J. Math. Phys. 6, 1009 (1965).
- “Complex Temperatures and Phase Transitions,” Gerald L. Jones, J. Math. Phys. 7, 2000 (1966).
- “Density Fluctuations of a Fluid,” Gerald L. Jones and Robert E. Kennedy, J. Math. Phys. 8, 460 (1967).
- “Structure of Correlation Functions Near the Critical Point,” Gerald L. Jones, Phys. Rev. 171, 243 (1968).
- “Asymptotic Forms for Correlation Functions,” Gerald L. Jones and Vincent P. Coletta, Phys. Rev. 177, 428 (1969).
- “External Force Fields and Phase Separation,” K. Michael Davies and Gerald L. Jones, Phys. Rev. A1, 966 (1970).
- “Two-Dimensional Classical Anisotropic Heisenberg Ferromagnets,” J.D. Patterson and G.L. Jones, Phys. Rev. B3, 1 (1971).
- “Rigorous and Spin-Wave-Type Results for the Lattice of Plane Rotors,” J.D. Patterson and G.L. Jones, Phys. Rev. B3, 3004 (1971).
- “High-Spin Expansion for Heisenberg Spin Systems,” Michael E. Harrigan and Gerald L. Jones, Phys. Rev. B7, 4897 (1973).
- “Singularity in the Vapor Pressure of ^4He Near the λ Point,” G.L. Jones, Physica 76, 181 (1974).
- “Irreversibility, Entropy Production, and Thermal Efficiency,” H.S. Leff (Chicago State University) and G.L. Jones (University of Notre Dame), Amer. Journal of Phys. Vol. 43, No. 11, 973 (1975).
- “Decimation Transformations in Lattice Systems of continuous Spins,” Gerald L. Jones, J.State. Phys. 19, 417 (1978).
- “Critical Point Correlations of the Yvon-Born-Green Equation,” Gerald L. Jones, John J. Kozak, E. Lee, Shmuel Fishman and Michael E. Fisher, Baker Lab., Cornell Univ., Ithaca, N. Y., Phys. Rev. Letts. 13, Vol. 46, p. 795-798 (1981).

“Observation on the Criticality of the Yvon-Born-Green Equation of State,” K.A. Green, K.D. Luks, G.L. Jones, E. Lee, and J.J. Kozak, Phys. Rev. A25, 1060 (1982).

“Critical Behaviour of the Yvon-Born-Green Equation: Effects of Dimensionality,” G.L. Jones, E. Lee and J.J. Kozak, Phys. Rev. Lett. 48, 447 (1982).

“Numerical and Analytical Studies of the Long-Ranged Solutions of the Yvon-Born-Green Equation,” Gerald L. Jones, E.K. Lee and John J. Kozak, J. Chem. Phys. 79, 459 (1983).

“Structure of the Triplet Distribution Function Near the Critical Point,” Gerald L. Jones, Phys. Rev. Lett. 50, 2090 (1983).

“Thermodynamically Consistent Truncations of Distribution Function Hierarchies,” Gerald L. Jones, John J. Kozak, and E.K. Lee, J. Chem. Phys. 80, 2092 (1984).

“Generalized Ornstein-Zernike Equation,” Gerald L. Jones, Phys. Rev. B30, 5279 (1984).

“A Density Functional-Variational Treatment of the Hard Sphere Transition,” Gerald L. Jones and Udayan Mohanty, Molecular Physics, Vol. 54. pp. 1241-1252 (1985).

“Symmetries of Differential Equations,” Samir Sayegh and Gerald L. Jones, Journal of Physics A19, p. 1793-1800 (1986).

“The Low Temperature Properties of the One Dimensional Fluid,” Gerald L. Jones, Journal of Statistical Physics, Vol. 44, p. 237-248 (1986).

“Elastic Constants in Density Functional Theory,” Gerald L. Jones, Molecular Physics Vol. 61, p. 445-466 (1987).

“Density Functional Theory of Freezing and Solids,” U. Mohanty, U. Sirish, G. Jones, Physics Today, 41 (No.1), S-17, 1988.

“Density Functional Theory of Homogeneous States,” Gerald L. Jones and Soon-Chul Kim, J. Stat. Phys. 56, pp. 709- 719(1989).

“Properties of a Higher-Order Weighted Density Approximation,” Soon-Chul Kim and Gerald L. Jones, Phys. Rev. A 40, pp. 4110-4112 (1989).

“Comment on Modified Weighted-Density-Functional Theory of Nonuniform Classical Liquids,” Soon-Chul Kim and Gerald L. Jones, Phys. Rev. A 41, 2222 (1990).

“Maximum Entropy in Condensed Matter Theory,” D.A. Drabold and G.L. Jones, Maximum Entropy and Bayesian Methods, W.T. Grady and L. Schick, eds., Kluwer Academic Publishers, Dordrecht, Holland (1991) .

“Maximum entropy approach to series extrapolation and analytic continuation,” G.L. Jones and D.A. Drabold, J. Phys. A24, 4705-4715 (1991).

“Symmetries and Conservation Laws of Differential Equations,” G.L.Jones, *IL NOUVO CIMENTO*, Vol. 112B, 1053-1059 (1997).

“Model of Convergent Extension in Animal Morphogenesis,” Mark Zajac, Gerald L. Jones, and James A. Glazier, *Phys. Rev. Lett.* 85, 2022-2025 (2000).

“Simulating Convergent Extension by way of Anisotropic Differential Adhesion,” Mark Zajac, Gerald L. Jones, and James A. Glazier, *Journal of Theoretical Biology* 222/2, 247 (2003).