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Education

B. A.., (Honors), School of Mathematics, University of Melbourne, 1947.

M. A., University of Melbourne, 1949.
  Thesis supervisor: Professor Sir Thomas Cherry, FRS
  Thesis Topic: The General Theory of Elasticity in Three Dimensions

Ph.D., University of Cambridge, England, 1953.
  Thesis Supervisor: Professor Sir Geoffrey Taylor, OM, FRS
  Thesis Topic: Problems in Continuum Mechanics and Wave Propagation

Professional Appointments

Senior Scientific Research Officer, Aeronautical Research Laboratory,
Department of Defense, Melbourne, Australia, 1947-1949.

Part-time Lecturer, University of Melbourne, Australia, 1953-1955.

Assistant Professor to Professor to Professor Emeritus, Division of Applied
Mathematics, Brown University, Providence, Rhode Island, 1955-present

Member, Institute for Insurance Mathematics and Mathematical Statistics, University of Stockholm, 1962-1963.

Consultant and Lecturer in Life Contingencies, Program in Applied Actuarial Science, Bryant College, Smithfield, Rhode Island, 1985-1996.

Completed Research

Books

International Dictionary of Applied Mathematics (Editor-in-Chief), D. Van Nostrand Company, 1960.

Applications of Digital Computers (Editor), Gin and Company, 1963.

Advances in Computers, Vol. 10 (Guest Editor), Academic Press, 1970.

Statistical Computer Performance Evaluation (Editor), Academic Press, 1972.

A Short Course in Computational Probability and Statistics (With U. Grenander), Springer-Verlag, Second Edition, 1977.

Papers

The buckling stability of orthotropic plates. **Australian Council for Aeronautics**, Report ACA-30-, 1947.

On the solution of the equilibrium equations of elasticity in general curvilinear coordinates. **Australian J. Scientific Res**., Vol. A2, 483, 1949.

The uniform torsion of an incomplete tore. **Australian J. Scient. Res**., Vol. A2, 354, 1949.

The uniform flexure of an incomplete tore. **Australian J. Scient. Res**., Vol. A2, 469, 1949.

A problem in dynamic plasticity: The enlargement of a circular hole in a flat sheet. **Proc. Cambridge Philos. Soc**., Vol. 48, 135, 1952.

The torsion of a perfectly plastic circular ring. **Proc. Of the Eighth International Congress on Theoretical and Applied Mechanics**, 1953.

Elastic-plastic torsion of circular ring sectors. **Quarterly of Applied Mathematics**, 14, 260, 1956.

Plastic twisting of thick-walled circular ring sectors (with W. Prager). **J. Applied Mechanics,** 23, 576, 1956.

Bounds for the collapse load of a beam**. Australian Journal of Physics**, 9, 419, 1956.

Minimum weight design of circular plates. **Journal of Mechanics and Physics of Solids**, 4, 294, 1956.

On the minimum weight design problem for cylindrical sandwich shells. **Journal of Aeronautical Sciences**, 24, 847, 1957. Also published in Russian translation in Mechanika, 91, 1958.

Approximate distribution of noise power measurements. **Quarterly of Applied Mathematics**, 17, 271, 1959.

The computation of the frequency function of aquadratic form in random normal variables**. J. Assoc. for Computing Machinery**, 7, 245, 1960.

Plastic Torsion. In, **Handbook of Engineering Mechanics**. McGraw-Hill, 1961.

Regression analysis of vector-valued random processes (with Murray Rosenblatt), **J. Society of Industrial and Applied Mathematics**, 10, 1, 1963.

Approximate distribution of cross-spectral estimates for Gaussian processes. In, **Proc. Symp. Time Series Analysis** (Ed. M. Rosenblatt) 244-259, John Wiley & Sons, 1963.

An approximate method in signal detection. **Quarterly of Applied Mathematics**, 20, 4, 1963.

On the analysis and prediction of meteorological fields. **U. S. Army Signal Corps Lab**., Fort Monmouth, Report DA-SC-87222/2, 1964.

On the formulation of statistical meteorology. **Reviews of the International Statistical Institute**, 33, 59-86, 1965.

Computer generated image algebras (with U. Grenander). **Proc. Congress Intern. Feder. Inform. Proc. Socs**., Edinburgh, North Holland Publishing Co., 1970.

Computational probability and statistics. **International Statistical Review**, 40, 1, 67-72, 1972.

Some properties of a neural model for memory (with Leon Cooper et al.), **Proc. AAAS Symposium**, 1972. Also in Selected Papers of Leon Cooper, 1994.

Patterns in program references. **IBM Journal of Research and Development**, 19, 3, 230-243, 1975.

A study of patterns in theoretical geography. **Journal of Computers and Geosciences**, 3, 547-578, 1977.

Restoration of discrete star images. **Quarterly of Applied Mathematics**, 38, 383, 1981.

A method in pattern theory (with U. Grenander). **Proc. 2nd Scand. Conf. On Image Anal**., Helsinki, 1981.

Mathematical demand analysis of software systems (with Ulf Grenander). **Office of Naval Research Report** N000014-77-C-0248, June 1983.

Dependent life expectancy: Recent advances in concepts and methods (with W. Spector). **Proc. 40th Annual Scientific Meeting of the Gerontological Society of America**, Washington, DC, November, 1987.

Transition probabilities for functional change (with Rebecca Rosenstein). **Proc. 40th National Meeting of the American Statistical Association**, New Orleans, August, 1988.

Functional change and discharge status patterns (with W. Spector). Proc**. 41st Annual Scientific Meeting of the Gerontological Society of America**, Chicago, Ill, November, 1988.

Functional and residential status transitions among nursing home residents (with Patrick Gillen). **The Journal of Gerontology: Medical Science**, 10-18, January, 1996.

The differential effect of the Medicare Catastrophic Coverage Act on the payer source utilization of nursing home residents (with Orna Intrator). **Inquiry**, 33, 42-52, Spring, 1996.

Modeling transition data with time-varying covariates (with Tony Lancaster and Orna Intrator). **Applied Statistics**.

Research

Analysis of health-care state transitions in the elderly (with Constantine Gatsonis, Bernard Cole, Orna Intrator and Ranjini Natarajan).

An evaluation of the impact of electronic versions of rare texts on the cost of scholarship, with the Women's Writers Project.

Pattern theory and its applications.

Service

To the University

Director, Brown University Computing Laboratory and Academic Computing activities, 1963-1976.

Director, Center for Computer and Information Sciences, 1969-1976.

Chairman, Division of Applied Mathematics, 1976-1982.

Associate Chairman, Division of Applied Mathematics, 1988-1991.

Chairman, Graduate Program Committee, Division of Applied Mathematics, 1985-1988; member 1994-1966.

Chair, University Committee on Statistical Science, 1989-1994.

Chair, Executive Committee, Center for Statistical Science, 1994-2001.

Member, Committee on Faculty Reappointment and Tenure, 1994-1998, 1999-2000.

Member, Executive Committee, Institute for Neural and Brain Science.

Member, Executive Committee, Brown University Center for Gerontology and Health Care Research.

Member, Graduate Council, 1983-1986.

Member, Brown University Medical Council, 1987-1991.

Member, Faculty Advisory Committee on Computing, 1984-1986, 1999-2002.

Freshmen Advisor, 1981-1983.

Consultant in Statistics: Department of Plastic Surgery, Rhode Island Hospital; Department of Psychiatry, Butler Hospital, Rhode Island Attorney General's Department.

Member of Search Committees for senior faculty position in epidemiology; for director of Center for Gerontology and Health Care Research; for bio-statistics faculty positions in Department of Community Health.

To the Profession

Managing Editor, Quarterly of Applied Mathematics, American Mathematical Society, 1965-present

Associate Editor, Mathematical Reviews, American Mathematical Society, 1957-1962

Member, Board of Trustees, New England Computing Consortium (NerComp), 1969-1976.

Member, Committee on Meteorological Statistics, American Meteorological Society, 1963-1967.

Chairman, Grace Murray Hopper Award Selection Committee, Association for Computing Machinery, 1971-1975.

Member, Selection Committee, NSF Postdoctoral Fellows in the Mathematical Sciences, 1983-1984.

Member, Selection Committee, Fulbright Fellowships in Science, International Institute of Education, 1984-1988.

Member, Board of Advisors, Who's Who in Science and Technology, Marquis Who's Who.

Member, Review Panel, National Institute of Aging, NIH, 1994.

Member, Republican National Committee, Washington DC.

To the Community

Expert witness in forensic statistics in numerous court cases
Charter member, Republican National Committee
Member, University Club
Member, Bristol Yacht Club

Teaching and Awards

      Teaching (1995-1998)

APMA 1650, 1660	Mathematical Statistics
APMA 1700	Mathematics of Insurance
APMA 1670	Statistical Analysis of Time Series

Directed seven Ph.D. Theses

Voted Most Popular Professor in Applied Mathematics (student survey in the "The Catalyst"), Winter 1996.

Advisor on Society of Actuaries examinations and careers in insurance to numerous undergraduates.