

RESUME

Thomas J. Lardner
College of Engineering
Department of Civil and Environmental Engineering
University of Massachusetts
Amherst, Massachusetts 01003-5205
(413) 545-1510; 545-2508
FAX (413) 577- 4940
Email: lardner@ecs.umass.edu

POSITION: Professor of Civil and Environmental Engineering

HOME: 175 Amity Street
Amherst, MA 01002
(413) 549-6891

PERSONAL: Date of Birth: 19 July 1938; married, three children, U.S. Citizen

EDUCATION:	Polytechnic Institute of New York	Ph.D. (Applied Mechanics)	1961
		M.S. (Applied Mechanics)	1959
		B. Aero. Eng.	1958

MEMBERSHIP: American Society of Mechanical Engineers (ASME), Life Fellow, (ASME)
Associate Editor, Journal of Applied Mechanics (1974-1980)
Society for Industrial and Applied Math. (SIAM)
Sigma Xi
Editorial Advisory Board, Mechanics Research Communications

AREAS OF RESEARCH:

Applied Mechanics and Applied Mathematics - Solid Mechanics: elasticity, plasticity, continuum mechanics, plates and shells; Engineering analysis; Applied Mathematics; Vibrations and Structural Dynamics.

TEACHING, RESEARCH AND CONSULTING EXPERIENCE:

1956-1958 Polytechnic Institute of Brooklyn, (PIB)
Part-time Research Technician. Experimental Work on Creep Buckling of Columns and Cylinders

1958-1959 PIB, Curtiss-Wright Graduate Fellowship, Analytical Study of Numerical Methods for Viscous Flow Equations, Boundary Layers

1959-1961 PIB, Graduate Assistant, Research Associate. Research work on Approximate Analytical Methods of Solution for Heat Conduction Problems, Thermal Stresses, Melting and Ablation, Irreversible Thermodynamics, Two years teaching of undergraduate courses in mechanics: statics and dynamics.

Summers 1960-1961
Pratt Institute, Part-time, Instructor in Dynamics course

October 1961 to September 1963

Active duty, U.S. Army, 1st Lt.

January 1962 to September 1962

Instructor, U.S. Army Engineer School, Fort Belvoir, Virginia. Instructor in Fallout Shelter Analysis Course given to Civilian Engineers; Contributor to "Shelter Design and Analysis, Volume 1, Fallout Protection" published by the Office of Civilian Defense.

September 1962 to September 1963

Jet Propulsion Laboratory (JPL), California Institute of Technology. Research Engineer Elasticity and Heat Conduction Analysis for Thermal Joint Conductance, Temperature Control of Space Craft, Thermal Scale Modeling of Spacecraft.

September 1963 to June 1965

Massachusetts Institute of Technology (MIT), Department of Mathematics. Instructor in Mathematics teaching courses in Differential Equations and Advanced Calculus for Engineers. Research in Applied Mathematics and Mechanics -- Elastic Shell Theory,

June 1965 to June 1966

Fulbright Lecturer at the Tribhuvan University, Kathmandu, Nepal. Lectured in Applied Mathematics and Mechanics. One year leave from MIT.

June 1966 to June 1968

MIT, Instructor in Mathematics, Assistant Professor of Applied Mathematics. Research in Elastic Shell Theory, Applied Mathematics for Structural Mechanics Problems, Special Functions. Teaching undergraduate Elasticity and Applied Mathematics courses, Graduate Advanced Level Applied Mathematics courses.

Summers 1966, 1967

Instructor, Harvard Summer School, teaching Applied Mathematics courses.

Summer 1968

University of Virginia, Visiting Research Professor, research in Shell Theory

Summer 1969

Visiting Research Associate, Army Materials and Mechanics Research Center, Watertown, MA, Crack Propagation and Fracture Arrest.

June 1968 to November 1973

MIT, Assistant Professor of Mechanical Engineering, Associate Professor of Mechanical Engineering. Research in Applied Mechanics and Biomechanics. Teaching and in charge of Undergraduate Solid Mechanics Courses, Graduate Elasticity and Plasticity Courses, Engineering Analysis Course.

November 1973 to September 1978

University of Illinois, Professor of Theoretical and Applied Mechanics. Research in Applied Mechanics. Teaching and in charge of Undergraduate Solid Mechanics Courses, Graduate Elasticity and Applied Mathematics Courses.

Summer 1974

Marine Biological Laboratory, Woods Hole, Massachusetts, participant in training program.

September 1978 to present

University of Massachusetts, Amherst, Professor of Civil Engineering;
Associate Dean for Research, School of Engineering, 1/81-8/82; Associate Department head 1999
Research in Applied Mechanics, Modeling material behavior, Modeling Fiber Structural Behavior, Mechanics of Material Behavior, contact stresses and delamination, analysis of cracks. Teaching undergraduate and graduate courses in Mechanics and Engineering Analysis; undergraduate courses in structural analysis and graduate courses in structural dynamics (vibrations), engineering analysis and solid mechanics .

Fall Semester 1989; Spring Semester 1999

Visiting Scholar, Harvard University, Division of Engineering and Applied Physics.

INDUSTRIAL CONSULTING RECORD:

Adelphi Research Center
Polytechnic Institute of Brooklyn
Jet Propulsion Laboratory
Dresser Industries
Metal Bellows Corporation
The Pathfinder Fund
Consultants for Applied Mechanics
TASC
Army Materials and Mechanics Research

NIH
Battelle Northwest
Foster Miller Incorporated
Lincoln Laboratory (MIT)
Zurn Industries
Research Cottrell Corporation
North Carolina Population Center
Ford Foundation
Battelle Laboratories

Books

Mechanics of Solids, 2nd Edition, S. Crandall, N. Dahl, T. Lardner, McGraw Hill Book Co., 1972. 2nd Edition with SI units, 1978. Both editions still in print.

Introduction to Solid Mechanics, T.J. Lardner and R.R. Archer, McGraw-Hill Book Co., 1994, 802 pages. Spanish and Korean editions in print

US Patent: Number 5750894, Measurement of tension using natural frequency of vibration , May 12 1998 (with J. Russell)

Teaching Awards: College of Engineering Outstanding Teaching award 1993;
James L. Tighe Civil and Environmental Engineering Distinguished Teaching Award 2001

Papers

“Application of the Heat Balance Integral to Problems of Cylindrical Geometry,” J. Appl. Mech., **28**, 310-312, 1961 (with F.V. Pohle).

“Biot’s Variational Principle in Heat Conduction,”AIAA, J., **1**, 196-206, 1963.

“Stresses in a Thick Plate with Axially Symmetric Loading,” J. Appl. Mech., **32**, 458-459, 1965.

“Approximate Solutions for Heat Conduction Problems in Nonplanar Geometries,” J. Heat Transfer, **87**, 423-425, 1965.

“Comment on Applications of Biot’s Method to the Convective Heating of a Slab,” J. Spacecraft and Rockets, AIAA J., p. 479, 1965.

“On the Lateral Deformation of Shallow Shells of Revolution,” Int’l J. Solids and Structures, **1**, 377-384, 1965 (with G.J. Simmonds).

“Application of a Variational Theorem for Boundary Values in Shell Theory,” J. of Strain Analysis, **1**, 83-85, 1965 (with E. Reissner).

“On the Stress Distribution in a Shallow Logarithmic Shell of Revolution,” J. Math. and Phys., **45**, 23-34, 1966.

“Mathematics in Nepal,” Amer. Math. Monthly, **74**, 67-72, 1967.

“Symmetric Deformations of Circular Cylindrical Shells of Rapidly Varying Thickness,” Proc. Symp. on the Theory of Shells (L.H. Donnell Vol., ed. D. Muster), 47-75, 1967 (with E. Reissner).

“Approximate Solutions to Phase-Change Problems,” AIAA J., **5**, 2079-2080, 1967.

“Symmetric Deformations of Circular Cylindrical Elastic Shells of Exponentially Varying Thickness,” J. Appl. Mech., **35**, 169-170, 1968 (with C.R. Steele).

“Discussion of Generalized Hypergeometric Function Solutions of the Transverse Vibration of a Class of Non-Uniform Beams,” J. Appl. Mech., **35**, 194-195, 1968.

“Symmetric Deformation of a Circular Cylindrical Shell of Variable Wall Thickness,” J. Appl. Math. and Phys. (ZAMP), **19**, 270-278, 1968.

“On the Stress Distribution in a Shallow Cone,” Int’l. J. Eng. Science, **6**, 473-487, 1968.

“Exact Solutions of the Shallow Shell Equations,” Quart. Appl. Math. **XXVI**, 445-450, October 1968.

“Vibration of Beams with Exponentially Varying Properties,” Acta Mechanica, **6**, 197-202, 1968.

“Approximate Solutions for Transient Combined Conduction Radiation Problems,” AIAA J., **7**, 167-169, 1969.

“Cylindrical Shells of Variable Wall Thickness,” AIAA J., **7**, 191, January 1969.

“Relation Between ${}_0F_3$ and Bessel Functions,” SIAM Review, **11**, 69-72, January 1969.

“Bolted Joint Interface for Thermal Contact Resistance,” J. Appl. Mech., **38**, 542-545, June 1971 (with T. Bradley and B. Mikic).

“Computer Model of the Human Menstrual Cycle,” Biophysical J., October 1971, 835-848 (with W.J. Shack and P.Y. Tam).

“Observations on the Hydrodynamics and Swimming Motion of Spermatozoa,” 24th Conf. on Engineering in Medicine and Biology, Las Vegas, **11**, December 1971 (with W.J. Shack and C.S. Fray).

“Iteration, Convergence, and Divergence in a Simple Mechanics Problems,” Int. J. of Mech. Eng. Education, **1**, 49-53 (with W.J. Shack).

“Cilia Transport,” Bulletin of Mathematical Biophysics, **34**, 325-335, 1972 (with W.J. Shack).

“Biomechanics of Reproductive Biology,” a Chapter in Proceedings of the Conference of a Multidisciplinary Approach to Family Planning, Excerpta Medica, Amsterdam, 19-26, 1972.

“Biomechanics of Reproductive Biology,” a Chapter in Biomaterials and Biophysics, MIT Press, 1972.

“A Note on Peristaltic Pumping,” J. Appl. Mech., **41**, 520-521, 1974 (with M. Negrin and W.J. Shack).

“The Swimming of Spermatozoa in an Active Channel,” J. of Biomechanics, **7**, 349-355, 1974 (with R. Smelser and W.J. Shack).

“A Long Wave Length Approximation to Spermatozoan Swimming in a Channel,” Bull. of Mathematical Biology, **36**, 435-442, 1974 (with W.J. Shack).

“Applicability of Hydrodynamic Analyses to Spermatozoan Motion,” J. of Experimental Biology, **62**, 27-42, 1975 (with B. Yundt and W.J. Shack).

“Observations on the Hydrodynamics of Swimming Spermatozoa,” Bull. of Mathematical Biology, **36**, 555-565, 1974 (with C. Fray and W.J. Shack).

“A Note on the Mechanics of Ovulation,” J. of Theoretical Biology, **48**, 481-483, 1974 (with W.J. Shack and P. Tam).

“Mechanical Characterization of the Mammalian Vas Deferens in the Active and Passive State,” ASME Advances in Bioengineering, November 1974, 80-84 (with C. Lau, I. Krepchin, S. Batra, and W.J. Shack).

“A Model for Placental Oxygen Exchange,” J. of Biomechanics, **8**, 131-134, 1975.

“Large Amplitude Motion of Self-Propelling Slender Filaments,” J. of Biomechanics, **8**, 229-236, 1975 (with J. Shen, P. Tam, and W. Shack).

“Measurement of Membrane Protein Lateral Diffusion in Single Cells,” Science, **191**, February 1976, 466-468 (with M. Edidin and Y. Zagyansky).

“The Determination of Local Cell Membrane Coefficients,” J. Theor. Biology, **60**, 433-440, 1976 (with N. Solomon).

“The Measurement of Cell Membrane Diffusion Coefficients,” J. Biomechanics, **10**, 167-170, 1977.

“Sperm Transport in the Van Deferens,” in The Human Semen and Fertility Regulation in the Male, 100-106, ed. by E.S. Hafez, St. Louis: Mosby Press 1977 (with S. Batra).

“A Kinematic Model of Performance in the Parallel Squat by Champion Powerlifters,” Medicine and Science in Sports, **9**, 128-133, 1977 (with T. McLaughlin and C. Dillman).

“Biomechanical Analysis with Cubic Spline Functions,” Research Quarterly **48**, 569-82, 1978 (with T. McLaughlin and C. Dillman).

“Analysis of Deformations of Cell Membranes,” ASME Biomechanics Symposium, AMD Vol. 23, 65-67, 1977 (with P. Pujara).

“Bioengineering Aspects of Reproduction and Contraceptive Development,” Chapter 22 of *Frontiers in Reproduction and Fertility Control*, ed. by R. Greep, MIT Press, 214-218, 1977.

“On the Contact Problem of a Highly Inflated Spherical Non Linear Membrane,” J. Appl. Mech., **45**, 202-203, 1978 (with P. Pujara).

“Deformations of Elastic Membranes - Effect of Different Constitutive Relations,” ZAMP **29**, 315-327 (with P. Pujara).

“Kinetic Analysis of the Forces and Moments Experienced in the Parallel Squat,” Research Quarterly, **49**, 175-189, 1978 (with T. McLaughlin and C. Dillman).

“A Model for Cell Division,” J. Biomechanics, **12**, 293-299, 1979 (with P. Pujara).

“Compression of Spherical Cells,” Mechanics Today, Vol. 5, in honor of Eric Reissner, Pergamon Press, 161-176 (with P. Pujara).

“Mechanical Properties of the Mammalian Vas Deferens in the Active and Passive State,” Archives of Andrology, **3**, 107-117, 113-125, 1979 (with S. Batra, I. Krepchin, C. Lau, and W. Shack).

“A Model for Cell Divisions,” J. Biomechanics, **13**, Letter to the Editor, 459-461, 1980 (with P. Pujara).

“On the Nonbuckling of a Circular Ring Under a ‘Wrapping’ Loading,” J. Appl. Mech., **47**, 973-974, 1980.

“A Note on the Length and Displacements of a Dugdale or Craze Zone,” J. Appl. Mech., 925-926, December 1982.

“Derivation and Validation of Equations of Motion to Predict Ball Spin Upon Impact in Tennis,” J. Sports Science, **1**, 111-120, 1983 (with J. Groppe and C. Dillman).

“Mechanical Models to Describe the Behavior of Polyaramid Fibers,” J. Materials Science, **19**, 2387-2395, 1984 (with J. White).

“A Note on the Elastica with Large Loads,” Int. J. of Solids and Structures, **21**, 21-26, 1985.

“Deformation of a Planar Sinusoidal Elastic Beam,” ZAMP, **36**, 460-474, 1985 (with A. Basu).

“Deformation of a Strip Containing Wavy Inextensible Fibers,” Mechanics Research Communications, **12**, 163-171, 1985 (with A. Basu).

“A Mathematical Model of an Axisymmetric Membrane Structure under Mechanical and Thermal Loads,” Proc. Int. Conf. on Nonlinear Mechanics, Shanghai, China, 1985 (with B. Yu and W.A. Nash).

“Minimum Value of Projectile Velocity,” SIAM Review, **28**, 385-388, 1986.

“Elastic Models of Cytokinesis,” Biomechanics of Cell Division, Ed. N. Akkas, NATO ASI Series, Plenum Press, 247-279, 1987.

“The Deformation of Helical Linked Structures,” Proc. Int. Conf. Composite Materials and Structures, Ed. K. Pandali, S.K. Malhotra, IIT, Madras, Tata McGraw-Hill, 159-173, 1988 (with C.S. Lee).

“The Deformation of Linked Oriented Structures,” Advances in Aerospace Structures and Allied Fields, Ed. T.K. Varadan, Mass Prints, Madras, 221-230, 1988 (with C.S. Lee).

“Thermal Effects on Very Large Space Structures,” ASCE, J. Aerospace Engineering, **1**, July 1988 (with R.B. Malla and W.A. Nash).

“Crack Resistance (R-Curve Behavior) of Poly (Methyl Methacrylate),” Proc. 7th Int. Conf. on Deformation, Yield, and Fracture of Polymers, Plastics and Rubber Institute, London, 1988 (with J.E. Ritter and M.R. Lin).

“Failure of Fused Silica Fibers with Subthreshold Flaws,” J. Non-Crystalline Solids, **102**, 82-87, 1988 (with K. Jakus, J.E. Ritter, S.R. Choi, and B.R. Lawn).

“Strength of Poly (Methyl Methacrylate) with Indentation Flaws,” J. Mat. Res., **23**, 2370-2378, 1988 (with J.Ritter and M.R. Lin).

“Differential Gravitational Forces on Large Space Structures,” Proc. Space 88, Eng. Const. and Operations in Space, ASCE, 1988, 620-631 (with R. Malla and W.A. Nash).

“Thermal Effects on Large Space Structures with Fixed Attitude,” Proc. Space 88, Eng. Const. and Operations in Space, ASCE, 1988, 632-643 (with R. Malla and W.A. Nash).

“Crack Resistance (R-Curve Behavior) of Poly (Methyl Methacrylate),” Proc. 7th Int. Conf. Deformation, Yield, Fracture of Polymers, Plastic and Rubber Institute, 76-1 to 76-4, 1988 (with H. Ritter and M.R. Lin)

“Application of the Crack Bridging Model for Fracture Resistance (R-Curve Behavior) to PMMA,” J. Mat. Res., **24**, 339-342, 1989 (with J.E. Ritter and M.R. Lin).

“Motion and Deformation of Very Large Space Structures,” AIAA Journal, **27**, 374-376, 1989 (with R. Malla and W.A. Nash).

“Buckling of a Three Dimensional Rigid-Link Model,” J. Eng. Mechs., (ASCE), **115**, 163-178, 1989 (with C.S. Lee).

“Interfacial Shear Strength of Thin Polymeric Coatings on Glass,” Proc. Mat. Res. Soc. Symp., **130**, 237-242, 1989 (with J. Ritter, L. Rosenfeld, and M.R. Lin).

“Measurement of Adhesion of Thin Polymer Coatings by Indentation,” J. Appl. Physics, **66**, 3626-3634, 1989 (with J.E. Ritter, L. Rosenfeld, and M.R. Lin).

“Behavior of Cracks near Free Surfaces/Interfaces,” Int. J. of Fracture Mechanics, **44**, 133-143, 1990 (with J.E. Ritter, M.L. Shiao, and M.R. Lin).

“Approximate Analysis of Penetration of a Cylindrical Roller into a Thin Elastic Coating,” J. of Tribology, **112**, 460-468, 1990 (with T.J. Gwo).

“Measuring the Interfacial Shear Strength of Thin Polymer Coatings on Glass,” J. Mat. Res., **5**, 1110-1117, 1990 (with M.R. Lin, J.E. Ritter, and L. Rosenfeld).

"Use of the Microindentation Technique for Determining the Interfacial Fracture Energy," J. Appl. Physics, **67**, 3291-3296, 1990 (with L. Rosenfeld, J.E. Ritter, and M.R. Lin).

"Measurement of Interfacial Fracture Energy," Proc. Mat. Res. Soc. Symp., 11-16, 1990 (with L. Rosenfeld and J.E. Ritter).

"Subcritical Crack Growth at a Polymer/Glass Interface," Proc. Mat. Res. Soc. Symp., **203**, 1991, 47-52 (with J.E. Ritter, K. Conley, and D. Steul).

"Hardness of Thin Polymer Coatings on Glass," Proc. Mat. Res. Soc. Symp., **203**, 141-146, 1991 (with J.E. Ritter, D.R. Sioui, and W. Gu).

"Indentation-Induced Failure at Polymer/Glass Interfaces," in Experiments in Micromechanics of Failure Resistant Materials, ASME, AMD, **130**, 25-30, 1991 (with J. Ritter, D. Madsen, and I. Grosse).

"Mechanics of Sub-Interface Cracks in Layered Materials," Int. J. Solids and Structures, **29**, 669-688, 1992, (with H. Lu).

"The Mechanics of Matrix Cracking in Fiber Reinforced Ceramic Composites Containing a Viscous Interface," Mechanics of Materials, **12**, 229-244, 1991 (with S.V. Nair and K. Jakus).

"A Note on the Interface Crack Problem," J. Appl. Mech., **59**, 452-54, 1992 (with H. Lu).

"The Effect of High Modulus Single and Double Layer Coatings on Contact Stresses," Phil. Mag., **66** (3), 437-455, 1992 (with R. Giovinazzo and J.E. Ritter).

"Effectiveness of Polymer Coatings on Reducing Indentation Damage in Glass," Polymer Science and Engineering, **32**, 1372-78, 1992 (with J.E. Ritter and W. Gu).

"Finite Element Simulation of Indentation Behavior of Thin Films," Proc., Mat. Res. Soc. Symp., 1991, **239**, 431-436 (Thin Films: Stresses and Mechanical Properties III) (with D. Madsen, R. Giovinazzo, and J.E. Ritter).

"Observations on Finger-Like Growth at a Urethane Acrylate/Glass Interface," J. Adhesion, **39**, 173-184, 1992 (with K. Conley, W. Gu, and J.E. Ritter).

"Indentation Behavior of Polymer Coatings on Glass," Polymer Science and Engineering, **32**, 1366-1371, 1992 (with J.E. Ritter and D.R. Sioui).

"Subcritical Crack Growth Along Epoxy/Glass Interfaces," J. Mat. Res., **7**, 2621-2629, 1992 (with K. Conley and J.E. Ritter).

"Two Dimensional Cracks at an Angle to an Interface," Int. J. Solids Structures, **30**, 1725-1735, 1993 (with B. Chen).

"Effect of the Substrate on Microindentation Behavior," Proc. Mat. Research Soc., **308**, 189-194, 1993 (with J. Ritter and H. Karamustafa).

"Dual Cracking at Polymer/Glass Interfaces," SPIE Vol. 1999, Adhesives Engineering, 80-86, 1993 (with J. Ritter, G. Prakash, A. Stewart, and V. Surdova).

"Hertzian Indentation Test for Monitoring the Fracture Energy of Polymer/Glass Interfaces in Sandwich Geometries," Proc. 18th Annual Meeting of Adhesion Society,

“Moisture Assisted Crack Growth in Polymer Adhesive –Glass Sandwich Geometries,” Mat. Res. Soc. Proc, **338**, 1994, 599-604 (with J. Ritter, G. Prakash, A. Stewart)

“ Crack Propagation in Polymer Adhesive/Glass Sandwich Specimens,” J. of Adhesion, **49**, 1995 , 97-112 (with J. Ritter, G. Prakash, A. Stewart)

“Interfacial Crack Growth in Polymer/Glass Sandwich Specimens,” Proc 18th Annual Meeting of the Adhesion Society, 1995, 319-321 (with J. Ritter, G. Prakash, A. Stewart)

“Delamination of Laminated Glass Specimens , “ Proc ANTEC 95 , Soc of Plastic Engineers, 1995, 1868-1871 (with J. Ritter)

“Crack Propagation in Polymer/Glass Interfaces Under Monotonic and Cyclic Loading,” Application of Fracture Mechanics, ASME, AMD, **64**, 1996, 245-250 (with J. Ritter and W. Grayeski).

“Cyclic Fatigue-Crack Along Polymer/Glass Interfaces,” Polymer Sci and Eng., 1997, to appear (with J. Ritter and W. Grayeski).

“Spherical Indentation and Fracture of Glass,” J. Am. Ceram. Soc., **80**, 1997, 1851-62, (with J. Ritter and G.Q. Zhu).

“Fatigue Crack Propagation at Polymer Adhesive Interfaces,” J. of Adhesion, 1996, **63**, 265-284, 1997 (with J. Ritter, W. Grayeski, G.C. Prakash, and J. Lawrence).

“Statics Experiments on an Elastic Catenary,” J. Eng. Mechs., ASCE, **123 (12)**, 1322-1324, 1997, (with J.C. Russell).

“Measuring the Fracture Resistance of Epoxy/Glass Interfaces Using the Double Cleavage Drilled Compression Specimen,” Proceedings Adhesives Soc., 1997, (with J. Ritter, J. Fox, and D. Hutko).

“Experimental Determination of Frequencies and Tension for Elastic Cables,” J. Eng. Mechs., ASCE, **124**, 1067-1072, 1998 (with J.C. Russell).

“Moisture Assisted Crack Growth at Epoxy-Glass Interfaces”, J. Materials Science, **33**, 1998, 4581-4588 (with J. Ritter, J. Fox, D. Hutko)

“ Fatigue of Silane Bonded Epoxy/Glass Interfaces “, Proc Mat Res Soc Symp Vol 563, 1999, 291-296, (with J. Ritter, J. Learned, G. Jacome, T. Russell)

“ Sub-Critical Crack Growth in Soda-Lime Glass Under Mixed Mode Loading “ J Am. Ceramic Soc., **83(8)**, 2000, 2109-21111 (with J. Ritter, A. Huseinovic, S. Chakravarthy)

“Further Analysis of the DCDC Specimen with an Offset Hole “, Int J of Fracture, **109**, 2001, 227-237 (with S. Chakravarthy, J. Quinn, J. Ritter)

“Fatigue and Durability of Silane-Bonded Epoxy/Glass Interfaces” J of Adhesion, **76**, 2001, 335-351 , (with J. Ritter, J. Learned, G. Jacome, T. Russell)

“ Fatigue Resistance of Silane-Bonded Epoxy/Glass Interfaces using Neat and Rubber-Toughened Epoxies “ J. Materials Science, **37**, 2002, 3269-3276, (with J. Pelch, J. Ritter, A. Lesser, T. Russell)

“ Resonance and the Aging Spring “ J. Appl Mechanics, May 2002, **69**, 397-398

“ Controlling Subcritical Crack Growth at Epoxy/Glass Interfaces”, J of Electronic Packaging, ASME, Dec 2002, **124**, (with J.Ritter, G. Jacome, J. Pelch, T. Russell)

6/24/03 tj1 -rev

INDUSTRIAL CONSULTING -- THOMAS J. LARDNER

Consulting Topics

- Vibrations of viscoelastic plates
- Ablation and melting; thermal stresses in structures
- Thermal scale modeling, spacecraft applications; thermal resistance and thermal conduction calculations
- Deformations and stress analysis of bourdon gages for pressure sensors
- Deformations and stress analysis of metal bellows
- Biomaterial studies; methods for contraceptive technology
- Analysis of corrugated plates, load deflection characteristics
- Hydro elastic behavior of shell structures
- Crack propagation and fracture arrest
- Stress analysis of specialized machine components
- Buckling studies of structures under thermal loading
- Stress analysis of structures on classified projects
- Analysis of shaft couplers
- Structural analysis of power plant components
- Hands-on investigations of power plant structural vibrations
- Engineering management planning
- Negotiations for contract settlement
- Analysis of light weight military bridge design
- Analysis of loads on rails
- Analysis of mechanical metal bellows seal vibrations
- Reliability of electronic components
- Siting of bellows in coal gasification plants
- Modeling thick plate/pavement loadings

Biographical Information: Thomas J. Lardner

Thomas J. Lardner received his B. Aero Eng. (1958), M.S. (1959), and Ph.D. (1961) in Applied Mechanics from the Polytechnic Institute of Brooklyn. After serving two years on active duty in the U.S. Army, one year of which was as a research engineer at JPL (CalTech), he joined the faculty of MIT as an Instructor in Mathematics in 1963. He was an Assistant Professor of Applied Mathematics and an Associate Professor of Mechanical Engineering at MIT before leaving in 1973 to join the faculty of the University of Illinois at Urbana as a Professor of Theoretical and Applied Mechanics. He joined the faculty of the University of Massachusetts in 1978.

Dr. Lardner's research interests are in the general area of solid and structural mechanics and applied mechanics and mathematics. His present interests are in the area of modeling the mechanical behavior of materials.

He was a Fulbright Lecturer in Applied Mathematics in Nepal 1965-1966.

Professor Lardner has consulting experience in the area of structural analysis and design especially for unusual mechanical systems.

He is a Life Fellow of ASME.

He was awarded an outstanding teaching award in the College of Engineering in 1993 and an alumni teaching award in 2001.

He has published two textbooks, has been awarded one patent, and has authored or coauthored about 110 research papers.

BRIEF RESUME: Thomas J. Lardner Home: 175 Amity Street
College of Engineering Amherst, MA 01002
University of Massachusetts (413) 549-6891
Amherst, MA 01003
(413) 545-1510; 545-2508
FAX (413) 545-2840
email: lardner@ecs.umass.edu

AREAS OF RESEARCH: Applied Mechanics and Mathematics
Solid Mechanics and Structural Dynamics

PERSONAL: U.S. Citizen, Married, Three Children
Date of Birth: 19 July 1938

EDUCATION: Polytechnic Institute of New York: BS 1958, MS 1959, PhD 1961

POSITIONS: U.S. Army (JPL) 1961-1963
MIT, 1963-1973
Instructor in Mathematics
Assistant Professor of Applied Mathematics
Assistant Professor of Mechanical Engineering
Associate Professor of Mechanical Engineering
Fulbright Lecturer in Applied Mathematics in Nepal, 1965-1966
(on leave from MIT)
University of Illinois, Urbana, 1973-1978
Professor of Theoretical and Applied Mechanics 1973-1978
University of Massachusetts, Amherst, 1978-
Professor of Civil Engineering
Associate Dean for Research, School of Engineering 1/81-8/82

ADDITIONAL TEACHING, RESEARCH AND CONSULTING EXPERIENCE

Pratt Institute	NIH
Harvard Summer School	Foster Miller Incorporated
University of Virginia	The Ford Foundation
Adelphi Research Center	Consultants for Applied Mechanics
Jet Propulsion Laboratory	The Pathfinder Fund
Dresser Industries	Battelle
Metal Bellows Corporation	Lincoln Laboratory (MIT)
Research Cottrell	Zurn Industries
D.G. Peterson Associates	Army Materials and Mechanics Research Center

LISTED IN: American Men of Science
Who's Who in America
Who's Who in the East
Who's Who in American Education
Who's Who in Frontiers of Science and Technology