

Dr. Landon Carter Wellford, Jr.

543 10th Street
Santa Monica, CA 90402

(310) 968-1224 Cell
(213) 740-0607 Office
(310) 395-1876 Home

EDUCATION

Ph.D. Mechanical Engineering, with major in solid mechanics and minors in mathematics, and fluid-thermal engineering, University of Alabama in Huntsville, Alabama, 1975.

MSE Engineering Mechanics, University of Alabama, in Huntsville, Alabama, 1973.

BSME Five-year program with major in machine design, University of Virginia, Charlottesville, Virginia 1966.

PROFESSIONAL EXPERIENCE

University of Southern California, Los Angeles, CA

1975–present

- Professor of Civil Engineering, 1982–Present
- Director of Undergraduate Programs, CEE Department, 2017-Present
- Chairman, Dept. of Civil and Environmental Eng., 1996–2006
- Associate Chairman, Dept. of Civil Eng., 1989–1992, 1995
- Acting Chairman, Dept. of Civil Eng., 1991
- Associate Professor of Civil Engineering, 1979–1982
- Assistant Professor of Civil Engineering, 1975–1979

Research

Major emphasis involves computational mechanics; in particular, the development of computational methods for nonlinear analysis of structures, nonlinear structural dynamics, and wave propagation, development of finite element methods for fluid mechanics problems.

Texas Institute for Computational Mechanics

1973–1974

University of Texas, Austin, TX

Senior Research Assistant

Participation in a basic research program in computational continuum mechanics, determination of the response of elastic, viscoelastic, and plastic solids, as well as viscous fluids on wave propagation and shock formation. Approximation of the solution of these problems

using finite element methods, Carrying including convergence, accuracy, and stability. Development of solution algorithms for linear and nonlinear problems.

Wyle Laboratories, Huntsville, Alabama

1972–1973

Senior Mechanical Engineer

- Participation in design of a mine roof simulator (a five-degree freedom-fixed base dynamic test mechanic capable of applying an eight million lb. dynamic load to mine roof supports). Specific tasks included the design of a large structure of frame and box construction, mechanical design of moveable crossheads, hydrostatic bearings, and other components, and stress analysis of structural and machine elements.
- Dynamic analysis of rotating machinery with application to textile fiber winding machines.
- Design and analysis of a two-board wave maker for generation of short and long wavelength water waves in a wave tank.

Teledyne Brown Engineering Co, Huntsville, Alabama

1966–1972

Analytical Mechanics Department

Senior Engineer

- Structural Analysis. Modeling of frame, plate, and shell structures using continuum and finite element methods.
- Rigid Body Dynamics. Flight mechanics, aero-dynamics, modeling of control systems, and prediction of external environments (atmospheric winds, etc.). Application to a three degree of freedom simulation of the launch of a controlled axisymmetric rocket through atmospheric winds and to six degree of freedom model of re-entry dynamics and atmospheric flight of the space shuttle in random atmospheric winds.
- Structural Dynamics, Vibration, and Acoustics. Solution of the algebraic Eigen problem for large systems. Synthesis of modes using modes derived for substructures. Determination of external vibrational and acoustic environments. Dynamic response due to deterministic and random inputs. Developing mechanical models for the dynamic behavior of fluids contained in elastic shells.
- Testing Techniques. Determination of model parameters through dynamic tests. Solution to the "inverse problem" of constructing models for fluid filled elastic shells from dynamic test results. Analysis of random vibration data using spectral techniques.
- Stability of Linear and Nonlinear Systems with Feedback. Prediction of the propulsion-structural system instability (known as pogo) which occurs in liquid rockets. Modeling of fluid dynamic phenomena in flexible irregular ducts. Using approximate and analytical techniques to model liquid rocket engines.

- Optimization of Various Systems Using Mathematical Programming Techniques. Use of linear programming, dynamic programming, random search and heuristic techniques in optimization. Application to the determination of start-up sequencing for liquid rocket engines to minimize dynamic loading.
- Free Surface Hydrodynamics. Predictions of the motion of an axisymmetric rigid body during an oblique impact with the ocean. Prediction of pressure distributions during impact of a rigid body with the ocean. Modeling of free surface hydrodynamic flows using continuum and "marker and cell" finite difference techniques. Scaling and model testing to simulate impact of a rigid body with a free surface.
- Transient Behavior of Wheeled Vehicles. Participation in the development of a six degree of freedom simulation of the motion of the lunar rover vehicle over deterministic and random terrain. In particular, developing wheel models, soil models, and models of wheel-soil interaction.
- Aircraft Landing Dynamics. Six degrees of freedom rigid body elastic body simulation of aircraft landing dynamics. Detailed modeling of the wheel-ground interaction and shock strut system.

E.I. DuPont Co., Waynesboro, Virginia

Summer, 1965

Engineering Assistant

Layout of a pilot plant to produce spandex fiber, development of piping and instrumentation diagrams.

E.I. DuPont Co., Belle, West Virginia

Summer, 1964

Designer

Machine design of a reduction drive for De Laval Blower.

FUNDED RESEARCH

1. NSF Grant ENG 76-00031 "Finite Element Approximations for Wave Propagation in Non-linear Solids"
2. NSF Grant ENG 76-09612 Nonlinear Eigenvalue Problems and the Postbuckling Behavior of Structures"
3. NOAA Sea-Grant (with J.J. Lee) Program R/CE-4 (1978) "Calculation of Harbor Oscillations by the Finite Element Method"
4. NOAA Sea Grant (with J.J. Lee) R/CE-6 (1980) "Waves and currents in Coastal Regions with Sharply Changing Water Depth"
5. NOAA Sea Grant (with J.J. Lee) R/CE-7 (1981) "Experimental and Analytical Study of Wave Uplift Pressure on Horizontal Platforms"
6. NOAA Sea Grant (with J.J. Lee) (1982-1983) "Wave Forces on Floating Breakwaters"

7. NOAA Sea Grant (with J.J. Lee) (1984–1985) "A New Experimental Approach for the Investigation of Fluid-Structure Interactions"
8. Carpenters/Contractors Cooperation Committee (with A. Abdel-Ghaffar, M. Agbabian, J. Anderson, S. Masri) (1989–1990) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 1"
9. Carpenters/Contractors Cooperation Committee (with A. Abdel-Ghaffar, M. Agbabian, J. Anderson, S. Masri) (1991) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 2"
10. Carpenters/Contractors Cooperation Committee (with A. Abdel-Ghaffar, M. Agbabian, J. Anderson, S. Masri) (1992) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 3"
11. Carpenters/Contractors Cooperation Committee (with A. Abdel-Ghaffar, M. Agbabian, J. Anderson, S. Masri) (1993) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 4"
12. Carpenters/Contractors Cooperation Committee (with J. Anderson and Y. Xiao) (1994) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 5"
13. Carpenters/Contractors Cooperation Committee (with J. Anderson and Y. Xiao) (1995) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 6"
14. Carpenters/Contractors Cooperation Committee (with J. Anderson and Y. Xiao) (1996) "Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Phase 7"
15. FEMA (with S. Masri and M. Shinozuka) (1997–2000) "Development, Evaluation, and Implementation of Standards for Seismic Mitigation Measures for Nonstructural Components in Hospital and Critical Care Facilities"
16. UC Berkeley (with Y. Xiao) (1999–2001) NSF Pacific Earthquake engineering Research Center (PEER), "Seismic Behavior of Bridge Piers Subjected to Different Loading Histories"
17. Los Angeles Metropolitan Water District (2006) "New Showerhead Design with Touch-activated On/Off Switch"
18. Los Angeles Metropolitan Water District (2008) "Design of Instant Hot Water System to increase Water Conservation"

INVITED LECTURES

1. University of Southern California, Applied Mechanics Seminar, June 1975, "Application of Finite Elements in Fluid Mechanics"

2. University of California, Berkeley, May 1976 "Finite Element Approximations in Aerodynamics"
3. Mass. Institute of Technology, August 1976", "On Technical Basis of Finite Methods for Geometrically Nonlinear Problems"
4. University of Illinois at Chicago Circle, March, 1977, "Use of Explicit Wavefronts and Amplitude Equations in Numerical Calculation of Wave Propagation"
5. California Institute of Technology, January, 1978", "Variational Approximation for Nonlinear Eigenvalue Problems"
6. NASA Langley Research Center, August 1981", "Finite Elements for Singular Perturbation Problems"

PUBLICATIONS

Theses

1. The Finite Element Method in Viscous Fluid Flow, M.S. Thesis, The University of Alabama, Huntsville, 1973.
2. Finite-Element Galerkin Methods for the Analysis of Wave and Shock Propagation in Nonlinear Hyperelastic Solids, Ph.D. Dissertation, University of Alabama in Huntsville, 1975.

Conference Proceedings Edited

1. Proceedings of the Symposium on Applications of Computer Methods in Engineering (Editor), Vol. 1, University of Southern California, 1977.

Journal Articles

1. "Analysis of Flow of Viscous Fluids by the Finite Element Method", with J.T. Oden, AIAA Journal, December 1972, pp. 1590–1599.
2. "A Finite Element Analysis of Shocks and Finite-Amplitude Waves in One-Dimensional Hyperelastic Bodies at Finite Strain", with R.B. Fost and J.T. Oden, International Journal of Solids and Structures, 11, 1975, pp. 377–401.
3. "A Note on the Accuracy and Convergence of Finite Element Approximations of the Convection Equation", with J.T. Oden, Computer Methods in Applied Mechanics and Engineering, 5, 1975, pp. 83–96.
4. "The Finite Element Analysis of Shocks and Acceleration Waves in Nonlinearly Elastic Solids", with J.T. Oden, Shock and Vibration Digest, 20, 1975, pp. 343–353.
5. "Discontinuous Finite Element Approximations for the Analysis of Shock Waves in Nonlinearly Elastic Materials", with J.T. Oden. The Journal of Computational Physics, 19, 1975, pp. 169–210.

6. "Finite Element Methods for Nonlinear Eigenvalue Problems and the Postbuckling Behavior of Elastic Plates", with G. Dib, Computers and Structures, 6, 1976, pp.413–418.
7. "A Theory of Discontinuous Finite-Element Galerkin Approximations of Shock Waves in Nonlinear Elastic Solids: Part I: Variational Theory", with J.T. Oden, Computer Methods in Applied Mechanics and Engineering, 8, 1976, pp.1–16.
8. "A Theory of Discontinuous Finite-Element Galerkin Approximations of Shock Waves in Nonlinear Elastic Solids, Part 2: Accuracy and Convergence, with J.T. Oden, Computer Methods in Applied Mechanics and Engineering, 8, 1976, pp. 17–36.
9. "A Finite-Element Free Boundary Formulation for the Problem of Multiphase Heat Conduction", with B. Ayer, International Journal of Numerical Methods in Engineering, 11, 1977, pp. 933–943.
10. "An Analysis of an Implicit Algorithm for Geometrically Nonlinear Problems of Structural Dynamics: Stability", with S.M. Hamdan, Computer Methods in Applied Mechanics and Engineering, 14, 1978, pp. 377–390.
11. "An Analysis of an Implicit Algorithm for Geometrically Nonlinear Problems of Structural Dynamics: Accuracy, " with S.M. Hamdan, Computer Methods in Applied Mechanics and Engineering, 14, 1978, pp. 391–399.
12. "Free and Steady State Vibration of Nonlinear Structures Using a Finite Element-Nonlinear Eigenvalue Technique", with G.W. Dib and W. Mindle, Earthquake Engineering and Structural Dynamics, 8, 1989, pp. 97–115.
13. "A Finite Element First-Order Equation Formulation for the Small-Disturbance Transonic Flow Problem", with M. Hafez, Computer Methods in Applied Mechanics and Engineering, 22, 1980, pp. 161–186.
14. "Postbuckling Behavior of Structures Using a Finite Element-Nonlinear Eigenvalue Technique", with G. Dib, International Journal for Numerical Methods in Engineering, 15, 1980, pp. 955–980.
15. "A Block Iteration Scheme for the Solution of Systems of Equations Resulting from Linear and Nonlinear Finite Element Models", with B. Vahdani, Computer Methods in Applied Mechanics and Engineering, 26, 1981, pp. 33–52.
16. "A Selective Relaxation Iterative Solution Technique for Nonlinear Structural Analysis Problems", with H. Sen, International Journal for Numerical Methods in Engineering, 17, 1981, pp. 773–795.
17. "A Finite Element Method with a Hybrid Lagrange Line for Fluid Mechanics Problems Involving Large Free Surface Motion" International Journal for Numerical Methods in Engineering, 17, 1981, pp. 1201–1231.
18. "A Finite Element Singular Perturbation Procedure for Convection Diffusion Problems; Part I with R. Fernandez, Journal of Applied Mechanics, 48, 1981, pp. 265–271.

19. "A Finite Element-Singular Perturbation Procedure for Convection Diffusion Problems; Part II" with R. Fernandez, *Journal of Applied Mechanics*, 48, 1981, pp. 272–275.
20. "An Averaged Lagrangian Finite Element Algorithm for Nonlinear Vibration Problems", with M. Ghabriel, *Computers and Structures*, 13, 1983, pp. 213–223.
21. "A Finite Element Equivalent Energy Linearization Procedure for Nonlinear Vibration Problems ", with R.K. Miller and M. Ghabriel, *International Journal for Numerical Methods on Engineering*, 21, pp. 1499–1520, 1985.
22. "A Singular Perturbation-Finite Element Procedure for the Analysis of Structures with a Small Bending Rigidity", with Behruz Vahdani, *Computer Methods in Applied Mechanics and Engineering*, 66, pp. 221–240, 1988.
23. "A Finite Element Transitional Mesh Generation Procedure Using Sweeping Functions", with M.R. Gorman, *International Journal for Numerical Methods in Engineer*, Vol. 26, pp. 2623–2643, 1988.
24. "A Singular Perturbation-Finite Element Procedure for the Analysis of Edge Effects in Shell Structures", with Behruz Vahdani, *Computers and Structures*, 28, No. 4, pp. 443–451, 1988.
25. "Interaction of Periodic Wave with Inclined Portable Barrier", with J.J. Lee and S. Sobhani, *ASCE. Journal of Waterways, Port, Coastal, and Ocean Engineering*, 114, No. 6, pp. 745–761, 1988.
26. "Multi-Level Finite Element Solution Algorithms Based on Multiplicative and Additive Correction Procedures", with C.N. Chen, *International Journal of Numerical Methods in Engineering*, 28, pp. 27–41, 1989.
27. "Predictions of Confined Shear Flows Over a Wall Obstacle", with T. Kerh, J.J. Lee, *International Journal Modelling and Simulation*, 15, pp. 23–29, 1995.
28. "Transient Fluid-Structure Interaction in a Control Valve", with T. Kerh and J.J. Lee, *ASME Journal of Fluids Engineering*, 119, 1997.
29. "Computation of Thermo-Mechanical Constitutive Properties including Finite Temperature and Anharmonic Effects", K. Chockalingham, L.C. Wellford, and S.M. Masri, *Journal of Computational and Theoretical Nanoscience*, 6, PP. 2334-2343, 2009.
30. "Multi-scale Homogenization Procedure for Continuum-atomistic, Thermo-mechanical Problems", with Karthik Chockaligam, *Computer Methods in Applied Mechanics and Engineering*, 200, pp. 356–371, 2011.

Conference Proceedings

1. "Accuracy and Convergence of Finite Element/Galerkin Approximations of Time Dependent Problems with Emphasis on Diffusion", with J.T. Oden. *Finite Element*

- Methods for Flow Problems, Vol. 2, John Wiley and Sons, Ltd., London, 1975, PP. 31–54.
2. "Continuous and Discontinuous Finite Element Approximations of Shock Waves in Nonlinear Elastic Solids", with J.T. Oden, Computational Mechanics, Springer Verlag, 1975, pp. 149–168.
 3. "Some New Finite Element Methods for the Analysis of Shock and Acceleration Waves in Nonlinear Materials", with J.T. Oden, Finite Element Analysis of Transient Nonlinear Structural Behavior, American Society of Mechanical Engineering, 1975, pp. 25–34.
 4. "Discontinuous Finite Element Approximations for the Analysis of Acceleration Waves in Elastic Solids", with J.T. Oden, The Mathematics of Finite Elements with Applications, Academic Press, London, 1976, pp. 269–285.
 5. "On the Theoretical Basis of Finite Element Methods for Geometrically Nonlinear Problems of Structural Analysis", Formulations and Computational Algorithm in Finite Element Analysis, MIT Press, 1976, pp. 813–838.
 6. "Mixed Finite Element Models and Dual Iterative Methods for Transonic Flow", with M. Hafez, 2nd International Conference on Finite Element Methods for Flow Problems, Rapallo, Italy, June 1976, pp. 416–426.
 7. "Locally Hyperbolic Finite Element Models & the Calculation of Transonic Flows", with M. Hafez, E. Murman, 2nd International Conference on Finite Element Methods for Flow Problems, Rapallo, Italy, June 1976, pp. 623–633.
 8. "Nonlinearity Projection Finite Element Methods in Structural Analysis", with S.M. Hamdan, Symposium on Applications of Computer Methods in Engineering, USC, August 1977, pp. 1039–1050.
 9. "An Implicit Velocity Formulation for Transonic Flow Using a Finite Element Method", with S.M. Hamdan, Symposium on Applications of Computer Methods in Engineering, USC, August 1977, pp. 811–820.
 10. "Use of Explicit Wavefronts and Amplitude Equations in the Numerical Calculation of Wave Propagation by the Finite Element Methods", Workshop on Nonlinear Waves in Solids, University of Illinois at Chicago Circle, 1977, pp. 59–60.
 11. "Modal Expansion and Power Series Methods for the Approximation of Nonlinear Structural Dynamics Problems using the Finite Element Method", Third SAP Users Conference, USC, 1978, pp. 80–122.
 12. "Finite Elements and Finite Differences for Transonic Flow Calculations", with M.M. Hafez and E.M. Murman, Finite Element for Flow Problems, Vol. 3, John Wiley and Sons, Ltd., London, 1978.
 13. "Calculation of Free Surface Hydrodynamics Problems Using a Finite Element Method with a Hybrid Lagrange Line", International Conference on Numerical Methods in Laminar and Turbulent Flow, Swansea, Wales, 1978, pp. 995–1006.

14. "Finite Element Procedure for Fluid Mechanics Problems involving Large Free Surface Motion", with T. Ganaba, Third International Conference on Finite Elements in Flow Problems, Banff Canada, June, 1980, pp. 13–23.
15. "A Singular Perturbation Finite Element Technique for Convection-Diffusion Problems", with R. Fernandez, A.S.M.E. Winter Annual Meeting. Special Publication on Convection Dominated Flows, December, 1979, New York, pp. 690–720.
16. "An Analysis of the Stability and Convergence Properties of a Crank-Nicholson Algorithm for Nonlinear Elastic-Dynamic Problems", with S.M. Hamdan, Nonlinear Finite Element Analysis in Structural Mechanics, Springer Verlag, 1981, pp. 502–518.
17. "Finite Element Methods for Boundary Layer Modeling with Application to Dissipative Harbor Resonance Problems", with J.J. Lee and M. Ganaba, Finite Elements in Flow Problems, Vol. 5, John Wiley, 1984, pp. 325–346.
18. "A Mapped Multi-Grid Procedure for Contact-Impact Problems Involving Waves and Structures", with J.J. Lee and K. Iradjpanah, 4th International Conference on Finite Elements for Flow Problems, Austin, Texas, Jan., 1984, pp. 1061–1066.
19. "Multiplicative and Additive Correction Procedures and Their Use in Multi-Level Finite Element Solution Algorithms", with C. N. Chen, 6th International Symposium on Finite Element Methods in Flow Problems, Antibes, France, June, 1986, pp. 295–300.
20. "A Finite Element Transitional Mesh Generation Technique", NUMETA '87, Numerical Techniques for Engineering Analysis and Design, Volume 1, Swansea, Wales, July, 1987, pp. 450–458.
21. "Finite Element Methods for Cavitation Problems", Proceedings of the International Conference on Computational Methods in Flow Analysis, Okayama, Japan, Sept. 1988, pp. 1300–1306.
22. "Adaptive Multilevel Finite Element Analysis using Multiplicative and Additive Corrections", Proceedings of the Third World Congress on Computational Mechanics, Chiba, Japan, Aug. 1994, pp. 890–891.
23. "Modeling the Behavior of HSC Beam to Column Connections Under Cyclic Loads", Proceedings of ASCE Structures Congress, April, 1997.
24. "Nonstructural Mitigation in Hospitals: the FEMA-USC Hospital Project", with S. F. Masri, J. P. Caffrey, R. Myrtle, R. Nigbor, M. Agbabian, E. Johnson, W. Petak, M. Shinozuka and R. Tranquada, Proceedings of the Seventh US National Conference on Earthquake Engineering, Boston, July, 2002.
25. "The FEMA-USC Hospital Project: Nonstructural Mitigation in Hospitals", with S. F. Masri, J. P. Caffrey, R. Myrtle, R. Nigbor, M. Agbabian, E. Johnson, W. Petak, M. Shinozuka, M. Tasbihgoo, and R. Tranquada, Proceedings of the 13th World Conference on Earthquake Engineering, Vancouver, B. C., Canada, August, 2004.
26. Wellford, L.C., Rhee, R., "Finite Element Methods for Functionally Graded Materials", 9th U.S. National Congress on Computational Mechanics, San Francisco, CA July, 2007.

27. Chockalinam, K., Wellford, L.C., "Multi-scale Thermo-Mechanical Simulation including Finite Temperature and Anharmonic Effects", 10th U.S. National Congress on Computational Mechanics, Columbus, Ohio, July, 2009.
28. Chockalinam, K., Wellford, L.C., "Multi-scale Thermo-Mechanical Simulation using Homogenization Techniques", Conference of ASCE Engineering Mechanics, Los Angeles California, August, 2010.

Reports

1. Development of Models of Fluid Shell Systems Using Dynamic Test Results, with A.R. Thoren, Teledyne Brown Engineering Company Report ASD–ASTN–706, August 1969.
2. Space Shuttle Landing Dynamics Analysis, Teledyne Brown Engineering Company Report ASD–AST3F–1231, October 1970.
3. Engine Startup Sequence Optimization, Teledyne Brown Engineering Company Report ASD–ASTN–1320, April 1971.
4. Study of Methods for Loads Analysis at Water Impact and Parachute Deployment on the Pressure-Fed Booster, Teledyne Brown Engineering Company Report ASD–ASTN–14722, December 1971.
5. Accuracy and Convergence of Finite Element/Galerkin Approximation of Time-Dependent Problems with Emphasis on Diffusion and Convection, with J.T. Oden, TICOM Report 73–8, Texas Institute for Computation.
6. Finite Approximations of a Class of Nonlinear Two-Point Boundary Value Problems in Finite Elasticity, with J.T. Oden, TICOM Report 74–5, Texas Institute for Computational Mechanics, Texas University of Texas at Austin.
7. A Theory of Discontinuous Finite-Element Galerkin Approximations of Shock Waves in Nonlinear Elastic Solids, with J.T. Oden, TICOM Report 74–6, Texas Institute for Computational Mechanics, The University of Texas at Austin.
8. On Some Finite Element Methods for Nonlinear Hyperbolic Equations, with J.T. Oden, TICOM Report 74–7, Texas Institute for Computational Mechanics, The University of Texas at Austin.
9. Numerical Computation Transonic Flows by Finite Element and Finite Difference Methods, with M.M. Hafez, C.L. Merkle, and E. M. Murman, Report No. 70, Flow Research Corp., Kent, Washington, 1977.
10. An Implicit Velocity Formulation for the Small Disturbance Transonic Flow Problem Using Finite Elements, with M.M. Hafez, Report No. 31, Flow Research Corp. 1977.
11. Finite Elements for Nonlinear Eigenvalue Problems with Applications in the Fields of Post-Buckling of Structures and Structural Dynamics, with G.M. Dib and W. Mindle, CE 78–06, Department of Civil Engineering, University of Southern California, 1978.

12. Finite Element Methods for Nonlinear Structural Dynamics and Wave Propagation, with S.M. Hamdan, CE 78-02, Department of Civil Engineering, University of Southern California, 1978.
13. Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—First-Year Report, with M. Abdel-Ghaffar, M. Agbabian, J. Anderson and S. Masri, Department of Civil Engineering, University of Southern California, 1990.
14. Integrated Analytical and Experimental Studies for the Evaluation of Reinforced Concrete Structures—Second-Year Report, with M. Abdel-Ghaffar, M. Agbabian, J. Anderson and S. Masri, Department of Civil Engineering, University of Southern California, 1992.