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Founding Principal

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PROFESSIONAL PROFILE

Dr. Barzegar is a registered professional engineer providing a broad range of services in civil/structural engineering to insurance companies, law firms, utilities, construction, high technology and mining industries, governmental and educational institutions, engineering and architectural firms, as well as individuals. With over 23 years of experience in consulting, design, construction project management, university teaching and research, Dr. Barzegar has provided clients with structural analysis and design, engineering forensic investigations, failure analysis, simulation & reconstruction using finite element stress & thermal analysis, expert testimony, and research and development support.

Dr. Barzegar's experience includes analysis of buildings, bridges, power plant cooling towers and offshore platforms subjected to earthquakes and extreme winds, damage investigations in single and multi-family residential, commercial and historic buildings, storage tanks and underground water conduits, grain silos, retaining walls, slabs and foundations, blast in underground coal mines, explosion in a chemical plant, effect of demolition, pile driving & construction on adjacent buildings, excessive floor vibrations, cracking, settlement, wind, fire and flooding damage, distress in pavements, evaluation of defective concrete, construction defects, accidents and disputes, failures during construction, damage and injuries caused by demolition, slip, trip & fall.

AREAS OF EXPERTISE

- Expert Consulting/Witness; Insurance Claims (Analysis, Preparation); Legal-Support Services; Peer Reviews
- Civil & Structural Engineering; Residential, Commercial & Institutional Building Design, Construction, Repair & Retrofit; Concrete, Steel, Wood, Brick Masonry & Adobe Construction; Historic Structures
- Condition Assessment of Bridges, Foundations, Containment Vessels, Retaining Walls, Conduits & Pipelines, Roads, Slabs, Pavements; Seismic Resistant Design; Defective Concrete
- Construction Defects & Accidents; Contract Disputes; OSHA Standards
- Code Compliance; Errors & Omissions; Standards of Care
- Diagnostic & Failure Investigation, Analysis & Report
- Vibration, Explosion, Impact, Earthquake, Wind, Fire, Hurricane & Flood Damage Investigations
- Effect of Demolition and Pile Driving on Existing Facilities; Cracking & Settlement Damage
- Due Diligence & Forensic Investigations
- Slip, Trip & Fall Injuries
- Engineering Mechanics; Finite Element Dynamic, Stress & Thermal Analysis (Linear & Nonlinear); Product Design; Failure Simulation & Reconstruction
- Intellectual Property & Patent Infringement

CREDENTIALS AND PROFESSIONAL HONORS

- Ph.D. (Civil/Structural Engineering), University of Illinois at Urbana-Champaign, 1987

- M.S. (Civil/Structural Engineering), University of Illinois at Urbana-Champaign, 1983
- B.S. (Civil Engineering, High Honors), University of Illinois at Urbana-Champaign, 1981
- Registered Professional Engineer (Civil), State of California (Registration # C61998)
- Licensed California General Building Contractor (License: B, 846888)
- Charter Member, Structural Engineering Institute of the American Society of Civil Engineers
- Chartered Professional Engineer, The Institution of Engineers, Australia (Registration #1044611)
- Interviewed by NPR (National Public Radio), Pacifica Radio, Bloomberg & CNN News for expertise on failure investigations and San Francisco Bay Bridge retrofit
- Expert reviewer for California Board for Professional Engineers and Land Surveyors, on complaints filed against licensed engineers
- Member: American Society of Civil Engineers (ASCE), Structural Engineers Association of Northern California, Earthquake Engineering Research Institute, The American Concrete Institute (ACI), American Institute of Steel Construction (AISC), International Code Council, Forensic Expert Witness Association, California Preservation Foundation, California Governor's Office of Emergency Services (Safety Assessment Program Volunteer), The Institution of Engineers-Australia, Tau Beta Pi National Engineering Honor Society
- Member: Joint ACI-ASCE Committee 447 on Finite Element Analysis of Reinforced Concrete Structures
- Associate Member: Joint ACI-ASCE Committee 352 on Joints and Connections in Monolithic Concrete Structures
- Alfred Noble Prize of the American Society of Civil Engineers (ASCE) for a meritorious technical paper published in the Journal of Structural Engineering (1990)
- Associate Editor: Journal of Structural Engineering, ASCE (Committee on Concrete and Masonry Structures), October 1991- May 1992
- Reviewer: technical articles for the Journal of Structural Engineering (ASCE), the Structural Journal of the American Concrete Institute, and International Journal of Structural Engineering and Mechanics
- Reviewed the manuscripts of two texts on Finite Element Structural Analysis, and Fundamentals of the Finite Element Method, for West Educational Publishing
- Chair: Technical session on “Structural Shapes”, Third International Conference on Composites in Infrastructure, San Francisco, California (2002)
- Cited in Who’s Who in Science and Engineering, 3rd Edition (1996-97)
- Principal Investigator on several research grants from U.S. National Science Foundation (1988-90), Louisiana State University Council on Research (1988), Louisiana Transportation Research Center/Federal Highway Administration (1989-92), Australian Research Council (1994-95), and the College of Engineering at the University of New South Wales (1993-96)
- Supervised five doctoral dissertations and eight masters’ theses/reports (Louisiana State Univ. and the Univ. of New South Wales)
- Coordinator of Post-Graduate Research Studies, School of Civil Engineering, and a member of the Higher Degree Committee, College of Engineering, University of New South Wales (1994-95)
- Halliburton Education Foundation Faculty Development Grant, College of Engineering, Louisiana State University, 1987
- Scholarship for graduate studies, Department of Civil Engineering, University of Illinois at Urbana-Champaign (1981-86)
- Dean’s List for academic excellence (1979-81)
- Completed “Construction Management” course, Cal State East Bay SBDC, Oakland, CA, 2006
- Completed “Systems Analysis and Design” computer course, Ohlone College, Fremont, CA, 2001
- Completed “Spread-Sheets and Data Bases” computer course, TAEF College, Sydney, Australia, 1996

EXPERIENCE

Habitat Engineering & Forensics, Oakland, CA (Founding Principal, 2004- present).

Practice areas: Investigation of damage from man-made and natural causes including engineering errors & omissions, and construction defects & accidents; Slip, trip and fall injury cases; Diagnostic and failure analysis, non-destructive testing, failure reconstruction using finite element analysis method; Structural engineering analysis & design of new buildings, additions, tenant improvements, equipment installations, remediation, repair, and seismic retrofit; Peer reviews; Expert consulting/witness services.

The following is a partial list of projects/cases for which Dr. Barzegar has assisted the client and/or their legal counsel as an expert consultant/witness. Expert witness experience ranges from small to multi-million dollar claims, including plaintiff and defendant cases:

Partial Case/Project List	Partial Client List
The Regents of the University of California at Berkeley v. Stern-Williams, et al.	McMillan & Shureen LLP
Devolder v. DPR Construction and Johnson Western Gunite	Law Offices of John N. Frye
Lei v. AAC Funding	Clinton & Clinton
Nelson v. Sequoyah Country Club	Downing Law Firm
Nationwide Mutual Insurance v. Pneumatic Conveying & Manufacturing, et al.	McCarthy & Rubright, LLP
Pacific Bell Telephone Company v. Beliveau Engineering Contractors, et al.	Zurich American Insurance Company, and Vogl & Meredith LLP
Shah v. Chabra, et al.	Farmers Insurance Company & Law Offices of Valerian, Patterson & Stratman
Caesars Palace (Octavius Tower- Las Vegas) v. Southwest Post-Tension Systems, Inc.	Interstate Fire and Casualty/Fireman's Fund Insurance Companies
Creekside Gardens Apartments	JCM Partners, LLC
Cutrufelli v. Macerich Company, Inc., et al.	Wood, Smith, Henning & Berman LLP
Dept. of the Army v. Bar Cal Steel Company	Interstate Fire and Casualty/Fireman's Fund Insurance Companies
Hetrick v. Nibbi Construction, et al.	Carlson, Calladine & Peterson LLP
Armstrong v. United States	United States Attorney's Office- Northern District of California
Wittsack Residence	Law Offices of James G. Schwartz
Zavala Mini-Storage Facility	Chubb Insurance
Clemente v. Campos	Law Offices of Ewing & Associates

Gizzarelli v. Hakimi	Stoddard, Berquist, Wood & Anderson, LLP
Kingsway Cathedral v. City of Des Moines (Iowa), et al.	Kingsway Cathedral, Inc.
Fregoso v. Pacific Gas & Electric, et al.	Law Offices of Van Blois & Associates
Berger v. Mirov Construction & Telesis Engineers, et al.	The Schinner Law Group
Sollars Construction et al. v. Clayton Johnson, Inc., et al.	Law Offices of James G. Schwartz
Panoramic Hill Association v. The Regents of the University of California at Berkeley	Law Office of Michael Lozeau
Granite Construction v. Carter & Burgess and M. Arthur Gensler & Associates, Inc.	Wood & Bender, LLP
Fong v. Mesa Development, et al.	ACE Westchester Specialty Claims & Lewis Brisbois Bisgaard & Smith, LLP
Shayesteh v. Norwalk Home Owners Assoc.	The Law Offices of Friedland, Rivas & Associates
Bustamante v. Vu, et al.	Allstate Insurance Company & Calendo, Puckett, Sheedy & DiCorrado, LLP
Charleston Place v. Bron Concrete	Warda & Yonano, LLP
Andrews v. The City of Livermore	Law Office of Victor M. Castro
Sheldon United Terminals v. Industrial Specialists, Inc.	Cox, Wootton, Griffin, Hansen & Poulos, LLP
Judith Ireland v. San Francisco Municipal Railway	Sheppard-Rosen Law Firm, LLC
Ewrudje v. City of Berkeley, et al.	Law Offices of George Holland
Gresham v. City of San Jose	O'Brien & Kelleher, LLP
Coakley v. Kreger, et al.; Albert v. Frontline Inspection Services; Crane v. Brenlar Investments; Yen v. De Wolf Inspection Services, et al.	Wilson, Elser, Moskowitz, Edelman & Dicker, LLP
Dwivedi v. Corrie Development	Veres Reed & Veres
Town of Woodside v. Bridgman	McCracken, Byers & Haesloop, LLP
Mohsanian v. Mahalati	Sweeney, Mason, Wilson & Bosomworth
ACACIA Bank v. Chan	Law Offices of Cary L. Dictor
Great American Insurance Company v. Diablo Valley Masonry, Inc.	Ellison, Nielsen, Knibbs, Zehe & Antas, P.C.
Besharati v. Marin County Public Works Department	Kesten, Colton, Bogaards & Brandt

Analysis and Design of Structural Support System for Semiconductor Manufacturing Equipment Installed in Buildings subjected to Earthquakes	Aviza Technology, Inc.
Analysis of Explosion-Proof Ventilation Seals in Underground Coal Mines	Minova International

Zolman Construction & Development, San Carlos, CA (2004). Professional experience includes the following:

Construction Project Manager, School Modernization, Hillsborough City School District: North Elementary School, Crocker Middle School and South Elementary School

Struct-Tech Group, Inc., Berkeley, CA- Design/Build Firm (2000-2003). Professional experience includes the following projects:

- Inspection/report of damage in several buildings
- Retrofit design of damaged buildings, foundations, retaining walls & pavements.
- Walker Avenue Condominiums, Oakland, CA – Analysis and design of a 5-story building using wood, concrete and masonry materials.
- The Key Route Lofts, Emeryville, CA – Analysis and design of a 5-story work+live building using wood, concrete and steel materials.
- Emerybay Lofts, Emeryville, CA – Analysis and design of an 8-story work+live steel moment resisting framed building (with RBS connections) including 3-D seismic and pushover analyses of various design options.
- Goldin Design Office Buildings A & B, Berkeley, CA – Analysis and design of two irregular 3-story concrete buildings including 3-D dynamic spectral analyses of various design options.
- American Industrial Center, San Francisco, CA – 3-D seismic analyses of a 5-story steel moment framed building which was constructed by Struct-Tech Group.
- Seismic retrofit of an existing church, Berkeley, CA – Wood & masonry building leased by UC-Berkeley Art Museum.
- Design of several custom residential buildings in San Francisco Bay Area including Portola Valley, Palo Alto, Fremont, Hayward, Oakland, Orinda, Berkeley, Napa and Laguna Beach, CA.
- Analysis & Design of a custom adobe building in Riverside, CA.

Rutherford & Chekene, San Francisco, CA (1999-2000). Professional experience includes the following major projects:

- New de Young Museum, San Francisco, CA - Sensitivity analyses of various design options for wind and seismic forces.
- Public Works Headquarters Building, Los Angeles, CA - Performance-based seismic evaluation and assessment of retrofit options for a steel moment resisting framed building damaged during the 1994 Northridge earthquake.
- Lakewood Apartment Complex, San Francisco, CA - Evaluation of seismic performance of concrete framed buildings with masonry shear walls; development of retrofit and strengthening schemes based on performance objectives.
- Fox Theatre, San Jose, CA - Analysis of retrofit options for the existing roof structure.

Exponent Failure Analysis Associates, Menlo Park, CA (1998-99). Professional experience includes the following major projects/cases:

- Cabrini Villas, Burbank, CA: Inspection of damage to residential buildings caused by the 1994 Northridge earthquake.
- Grain Silos, Modesto, CA: Analyses of cracking in shotcrete hoppers over grade; soil-structure interaction and water intrusion issues.
- Westminster Tank, Westminster, CA: Failure investigation of a large concrete water tank, identification of causes using computer analyses and recommendations for design modifications in a new tank with similar structural attributes planned for the City of Beverly Hills, CA.
- Denver Water, Denver, CO: Inspection of burst prestressed concrete water pipes and underground conduits, material sampling and root cause analyses.
- Condea Vista Explosion, Baltimore, MD: Analyses of damage to structures and installations in the plant caused by explosion of a pressure vessel; correlation of pressure attenuation with damage indicators.

Associate Professor (tenured), School of Civil Engineering, The University of New South Wales, Sydney, Australia (1992-98). Professional experience includes the following projects:

- Protective Seals in Underground Mining: R&D project sponsored by BHP-Coal (Australia) and Tecrete Industries involving design, testing and modeling of shotcrete seals and bulkheads to protect against accidental blast, fire and water intrusion.
- Structural Evaluation of Highway Bridges, Cincinnati, Ohio: Project supported by the Ohio Department of Transportation and Infrastructure Research Institute at the University of Cincinnati to instrument and analyze three highway composite steel-concrete bridges to predict behavior under overloads; correlation of simulated and observed performance during passage of a 350-ton trailer truck.
- Seismic Response of Offshore Steel Jacket Platforms: R&D project to investigate the dynamic behavior of medium-rise platforms under simulated ground motions.
- Three-Dimensional Nonlinear Finite Element Analysis of Concrete Structures: R&D project sponsored by the Australian Research Council to study the serviceability and ultimate behavior of reinforced and prestressed concrete connections in framed buildings.
- Strength and Ductility of High-Strength Concrete Columns: Development of analytical/numerical procedures to simulate behavior under axial loads and biaxial bending for various cross-sectional geometries and reinforcement arrangements.
- Vulnerability Assessment of a Hyperbolic Cooling Tower: Nonlinear finite element analysis to determine the effect of extreme winds and seasonal/operational temperature gradients on the ultimate response of a reinforced concrete cooling tower in Mississippi.

Assistant Professor, Department of Civil Engineering, Louisiana State University, Baton Rouge, LA (1986-91). Professional experience includes the following projects:

- Three Dimensional Finite Element Simulation of Response of Reinforced Concrete Beam-Column-Slab Connections: R&D project sponsored by the National Science Foundation involving constitutive modeling of concrete under triaxial stresses, bond between concrete and reinforcement and determination of response mechanisms and ultimate capacities.
- Engineering properties of Brittle Repair Materials: Sponsored by Federal Highway Administration and Louisiana Transportation Research Center to test and model the behavior of various concrete materials to repair rigid concrete pavements.

- Finite Element Analysis of Jointed Concrete Pavements: Sponsored by Federal Highway Administration and Louisiana Transportation Research Center to investigate the modes of failure under mechanical and thermal loading.

Selected Publications and Presentations

a. Journal/Magazine Articles

"Three Dimensional Modeling of Concrete Structures. I: Plain Concrete," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 123(10), pp. 1339-1346, October 1997 (with S. Maddipudi).

"Three Dimensional Modeling of Concrete Structures. II: Reinforced Concrete," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 123(10), pp. 1347-1356, October 1997 (with S. Maddipudi).

"Influence of Local Inertia on Seismic Response of Offshore Jackets," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 123(1), pp. 52-61, January 1997 (with K. Kayvani).

"Hysteretic Modeling of Tubular Members and Offshore Platforms," *Engineering Structures*, Vol. 18(2), pp. 93-101, February 1996 (with K. Kayvani).

"A Study of Layering Procedures in Finite Element Analysis of RC Flexural and Torsional Elements," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 121(12), pp. 1773-1783, December 1995 (with A. Ramaswamy and G.Z. Voyiadjis)

"Concrete Sections Under Biaxial Bending: Interactive Analysis with Spreadsheets," *Concrete International*, American Concrete Institute, Vol. 17(12), pp. 28-33, December 1995 (with T. Erasito).

"A Post-Cracking Formulation for Nonlinear Finite Element Analysis of RC Based on Secant Stiffness," *Journal of Engineering Mechanics*, American Society of Civil Engineers, Vol. 120(12), pp. 2621-2640, December 1994 (with A. Ramaswamy and G.Z. Voyiadjis).

"Generating Reinforcement in FE Modeling of Concrete Structures," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 120(5), pp. 1656-1662, May 1994 (with S. Maddipudi).

"Analytical Formulation of the Biaxial Behavior of Concrete Repair Material," Discussion, *Materials Journal*, American Concrete Institute, Vol. 90(6), pp. 627-629, November-December 1993 (with K. Behfarnia).

"Biaxial Testing of Repaired Concrete," Discussion, *Materials Journal*, American Concrete Institute, Vol. 90(5), pp. 524-528, September-October 1993 (with K. Behfarnia).

"Nonlinear Finite Element Analysis of Plain Concrete Pavements with Doweled Joints," *Journal of Transportation Engineering*, American Society of Civil Engineers, Vol. 199(5), pp. 763-781, September-October 1993 (with C. Channakeshava and G.Z. Voyiadjis).

"Moment Transfer and Slab Effective Widths in Laterally Loaded Edge Connections," *Structural Journal*, American Concrete Institute, Vol. 88(5), pp. 615-623, September-October 1991 (with R. Echle and M. Foroozesh).

"Layering of RC Membrane and Plate Elements in Nonlinear Analysis," Closure, *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 117(1), pp. 299-300, January 1991.

"Elasto-Plastic Cracking Analysis of Reinforced Concrete," Discussion, *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 117(1), pp. 292-294, January 1991.

"Post-Cracking Analysis of RC Panels Including Tension-Stiffening," *Canadian Journal of Civil Engineering*, Vol. 17, pp. 311-320, June 1990 (with W.C. Schnobrich).

"Analytical Investigation of RC Membrane Elements with Anisotropic Reinforcement," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 115(3), pp. 647-665, March 1989.
"Layering of RC Membrane and Plate Elements in Nonlinear Analysis," *Journal of Structural Engineering*, American Society of Civil Engineers, Vol. 114(11), pp. 2474-2492, November 1988.

b. Chapter in Book

"Finite Element Analysis of Reinforced Concrete Structures II," Chapter 8, *Generic Problems*, J. Isenberg, ed., New York, New York, American Society of Civil Engineers, 1993, pp. 490-569 (with J. Isenberg, et al.).

c. Society/Conference Meeting Papers

"Strength of Reinforced Concrete Sections under Eccentric Compression," Proceedings, FIP Symposium, Johannesburg, South Africa, March 1997, Vol. 1, pp. 203-211 (with W.T. Wo).
"A Modeling Approach for 3-D Dynamic Analysis of Offshore Jackets," Proceedings, 14th Australasian Conference on the Mechanics of Structures and Materials, Hobart, Australia, December 1995, Vol. 1, pp. 88-93 (with K. Kayvani).
"Three Dimensional Finite Element Model for Reinforced and Prestressed Concrete Structures," Proceedings, 14th Australasian Conference on the Mechanics of Structures and Materials, Hobart, Australia, December 1995, Vol. 1, pp. 278-283 (with K. Behfarnia and R.I. Gilbert).
"Local Inertia Effects on Seismic Response of Offshore Platforms," Proceedings, International Conference on Computational Methods in Structural and Geotechnical Engineering, Hong Kong, December 1994, Vol. IV, pp. 1313-1318 (with K. Kayvani).
"Seismic Response of Offshore Platforms: Nonlinear Finite Element Analysis," Proceedings, Australasian Structural Engineering Conference, Sydney, Australia, September 1994, The Institution of Engineers, Australia, Publication NCP No. 94/8, Vol. 1, pp. 439-444 (with K. Kayvani).
"Finite Element Analysis of a Reinforced Concrete Cooling Tower Subjected to Wind and Thermal Loadings," Proceedings, Australasian Structural Engineering Conference, Sydney, Australia, September 1994, The Institution of Engineers, Australia, Publication NCP No. 94/8, Vol. 2, pp. 937- 942 (with R. Veysi).
"Generic Problems in Finite Element Analysis of Reinforced Concrete Structures," Proceedings, Structures Congress, American Society of Civil Engineers, San Antonio, Texas, April 1992, pp. 951-953 (with J. Isenberg et al.).
"3-D Finite Element Modeling of RC Columns," Proceedings, Structures Congress, American Society of Civil Engineers, San Antonio, Texas, April 1992, pp. 177-180 (with S. Maddipudi).
"A Secant Post-Cracking Model for Reinforced Concrete with Particular Emphasis on Tension Stiffening," Proceedings, Second International Conference on Computer Aided Analysis and Design of Concrete Structures, Austria, April 1990, Pineridge Press, Vol. II, , pp. 1001-1016 (with A. Ramaswamy).
"Modeling Tension Stiffening in Finite Element Analysis of RC Panels," Proceedings, Annual Conference of Canadian Society for Civil Engineering, Calgary, Canada, May 1988, Volume III, pp. 277-303 (with W.C. Schnobrich).
"Skew Anisotropic Reinforcement in 2-D Reinforced Concrete Elements," Proceedings, International Conference on Constitutive Laws for Engineering Materials: Theory and Applications, Tucson, Arizona, January 1987, Elsevier Publishing Company, Vol. II, pp. 813-820 (with W.C. Schnobrich).

d. Technical Reports

"Constitutive Models for Nonlinear Finite Element Analysis of Reinforced Concrete Structures," UNICIV Report No. R-346, School of Civil Engineering, The University of New South Wales, ISBN No. 858413132, 74 pages, July 1995.

"A Study on the Effect of Local Inertia on Seismic Response of Steel Offshore Platforms" UNICIV Report No. R-340, School of Civil Engineering, The University of New South Wales, ISBN No. 858413078, 67 pages, December 1994 (with K. Kayvani).

"Modeling of Tubular Members in Offshore Steel Jackets under Severe Cyclic Loading," UNICIV Report No. R-324, School of Civil Engineering, The University of New South Wales, ISBN No. 858412918, 51 pages, December 1993 (with K. Kayvani).

"Engineering Properties of Brittle Repair Materials," Final Report, Louisiana Transportation Research Center, Baton Rouge, Louisiana, two parts, 712 pages, April 1992 (with G.Z. Voyiadjis et al.).

"Final Report: Experimental Studies on Engineering Properties of Brittle Repair Materials," Louisiana Transportation Research Center, Baton Rouge, Louisiana, 124 pages, February 1991 (with G.Z. Voyiadjis and T.M. Abu-Lebdeh).

"3-D Response of Reinforced Concrete Beam-Column- Slab Connections," 2nd Annual Report on a Research Project Sponsored by the National Science Foundation, Dept. of Civil Engineering, Louisiana State University, Baton Rouge, Louisiana, 75 pages, August 1990.

"Report No. 2B: Engineering Properties of Brittle Repair Materials - Analytical Studies," Louisiana Transportation Research Center, Baton Rouge, Louisiana, 51 pages, June 1990 (with C. Channakeshava and G.Z. Voyiadjis).

"Report No. 2A: Engineering Properties of Brittle Repair Materials - Experimental Studies," Louisiana Transportation Research Center, Baton Rouge, Louisiana, 25 pages, June 1990 (with G.Z. Voyiadjis and T.M. Abu-Lebdeh).

"A Study on Edge Connections of Flat Plate Structures Subjected to Lateral Loading," Dept. of Civil Engineering, Louisiana State University, Baton Rouge, Louisiana, 157 pages, April 1990 (with R. Echle).

"Report No. 1: Engineering Properties of Brittle Repair Materials," Louisiana Transportation Research Center, Baton Rouge, Louisiana, 21 pages, December 1989 (with G.Z. Voyiadjis and T.M. Abu-Lebdeh)

"3-D Response of Reinforced Concrete Beam-Column- Slab Connections," 1st Annual Report on a Research Project Sponsored by the National Science Foundation, Dept. of Civil Engineering, Louisiana State University, Baton Rouge, Louisiana, 90 pages, June 1989.

"Nonlinear Finite Element Analysis of Reinforced Concrete under Short Term Monotonic Loading," Civil Engineering Studies, SRS 530, University of Illinois, Urbana, Illinois, 137 pages (also available through University Microfilms International, Ann Arbor, Michigan, Microfilm #NF 087-11773), November 1986 (with W.C. Schnobrich).

"User's Manual for Program ROOF," Prepared for Union Carbide Company, Department of Civil Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, 88 pages, August 1984 (with R.B. Haber).

"Evaluation of Selected Grouts for Installation of Load Transfer Devices," Prepared for Dayton Superior Company, Department of Civil Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, 22 pages, January 1983 (with E.J. Barenberg).

Presentations

Invited Speaker, "Generic Problems in Finite Element Analysis of Reinforced Concrete Structures," International Workshop on Finite Element Analysis of Reinforced Concrete, Columbia University, New York, June 1991.

Presented a short course on "Bridge Dynamics," training course for bridge engineers from Vietnam, School of Civil Engineering (UNSW), 1996.

Presented a short course on "Finite Element Method for Engineers and Scientists," Infrastructure Research Institute, Department of Civil Engineering, University of Cincinnati, 1997.