

Professor Steven M. Tipton

Degrees Earned (include dates and names of institution)

B.S.M.E., Oklahoma State University, May 1978

M.S.M.E., Stanford University, August 1979

Ph.D.M.E., Stanford University, January 1985

Dissertation Title: *Fatigue Behavior under Multiaxial Loading in the Presence of a Notch: Methodologies for the Prediction of Life to Crack Initiation and Life Spent in Crack Propagation*, Ph.D. Dissertation, Stanford, University, Stanford, California, January, 1985.

Areas of Specialization

Fatigue design analysis, multiaxial fatigue, fracture analysis, mechanical design, stress, strain and plasticity analysis, materials science, coiled tubing mechanics

Professional Experience

Professor, The University of Tulsa, 1997 to present

Associate Professor, The University of Tulsa, 1990 to 1997.

Assistant Professor, The University of Tulsa, 1984 to 1990.

Consulting Engineer, Tulsa, OK and Palo Alto, CA, 1981 to present.

Graduate Research Assistant, Stanford University, Stanford, CA, 1981 to 1984.

Design Engineer, Bell Telephone Laboratories, Indianapolis, IN, May, 1978 to 1981.

Oil Field Engineer, Cities Service Co., Summers, 1976 and 1977.

Professional Memberships

American Society of Mechanical Engineers, 1978-present.

Society of Automotive Engineers, 1984-present.

American Society for Testing and Materials, 1987-present.

American Society for Metals, 1984-present.

Society of Professional Engineers, 1989-1990.

Registered Professional Engineer, 1989 (Oklahoma PE 15561)

International Coiled Tubing Association, 1999-present.

Honors/Awards

Tau Beta Pi, Honorary Engineering Society (top 10% in engineering)

Pi Tau Sigma, Honorary Mechanical Engineering Society

Phi Kappa Phi, Honorary Academic Society, (top 10% graduating seniors, OSU 1978)

Henry L. Doherty Educational Foundation Scholarship, Cities Service Company, Oklahoma State University, 1974-1978.

MTS Fellowship, MTS Systems Corporation, Minneapolis, MN, Stanford University, 1983-1984.

The University of Tulsa Summer Fellowship Program, \$3,000 award for fatigue research, summer, 1986.

Award from the Tulsa Chapter of the American Society for Metals, \$1,000 for fatigue research, 1987.

Award from the Tulsa Chapter of the American Society for Metals, \$1,000 for fatigue research, 1988.

Nomination for Presidential Young Investigator Award, National Science Foundation, 1985 and 1987.

Mortar Board Teacher of the Year, College of Engineering and Applied Sciences, 1988-89.

Advised Award Winning Senior Projects: Oklahoma Society of Professional Engineers, Outstanding Student Project, Statewide Awards:

“Earthquake Simulator for Tulsa Zoological Park,” 1986

"Computer Simulation of Sign Language," 1987

"Pedaled Four-Wheel Vehicle for Disabled Child," 1988

"Truck Seat Simulator for Rehabilitative Analysis," 1989

"Rickshaw Rehabilitative Training Device," 1990

“Indexing Mule Shoe (Down-Hole Oil Well Servicing Tool),” 1991

“Vertical Jump Test Device,” 1996

“Powder Sugar Sifting Machine,” 1999

“Automated Can Crusher for the Disabled,” 2001

“Amphibious Personal Electric Watercraft,” 2002

“Remote Control Track-Driven Tug Vehicle,” 2003

“Hybrid Electric Vehicle,” 2004

ASME Old Guard Oral Presentation, Second Place in Region X, "Pedaled Four-Wheel Vehicle for Disabled Child," 1988

ASME Old Guard Oral Presentation, Third Place in Region X, "Vertical Jump Measuring Device: The Verticane," 1996

Scholarship from American Society for Engineering Education, \$1850 to attend short course, "Integration of Creativity in the Mechanical Engineering Curriculum", June, 1989.

Who's Who in America, South and Southwest, since 1991.

Who's Who Among Young American Professionals, since 1991.

Tau Beta Pi Professor of the Month, September, 1991.

Men of Achievement, since 1991, International Biographical Centre, Cambridge, England.

Ralph Teeters Engineering Educator Award, Society of Automotive Engineers, 1993.

2002 Outstanding Engineer Award, Tulsa Chapter, Oklahoma Society of Professional Engineers, 2002.

2002 Outstanding Engineer Award, Statewide Oklahoma Society of Professional Engineers, 2002.

Tau Beta Pi Professor of the Month, January, 2003.

A. Refereed Publications

Published:

Tipton, S.M. and Nelson, D.V., "Fatigue Life Predictions for a Notched Shaft in Combined Bending and Torsion," *Multiaxial Fatigue, ASTM STP 853*, K.J. Miller and M.W. Brown, eds., American Society for Testing and Materials, Philadelphia, 1985, pp. 514-550.

Tipton, S.M. and Nelson, D.V., "Methods for Estimating Cyclic Notch Strains in the SAE Specimen," *Multiaxial Fatigue: Analysis and Experiments, Society of Automotive Engineers, Advances in Engineering Publication AE 14*, 1989, pp. 101-106.

Tipton, S.M. and Nelson, D.V., "Multiaxial Fatigue Life Predictions for the SAE Specimen using Stress Based Approaches," *Multiaxial Fatigue: Analysis and Experiments, Society of Automotive Engineers, Advances in Engineering Publication AE 14*, 1989, pp. 61-66.

Tipton, S.M. and Fash, J.W., "Multiaxial Fatigue Life Predictions for the SAE Specimen using Strain Based Approaches," *Multiaxial Fatigue: Analysis and Experiments, Society of Automotive Engineers, Advances in Engineering Publication AE 14*, 1989, pp. 67-80.

Sorem, J.R., Jr., Shadley, J.R., and Tipton, S.M., "Design Curves for Maximum Stresses in Blocks Containing Pressurized Bore Intersections," *ASME Journal of Mechanical Design*, Vol. 113, No. 4, Dec. 1991, pp 427-431.

Tipton, S.M. and Shoup, G.J., "The Effect of Proof Loading on the Fatigue Behavior of Open Link Chain," *ASME Journal of Engineering Materials and Technology*, Vol. 114, No. 1, American Society of Mechanical Engineers, New York, NY, Jan. 1992, pp. 27-33.

Tipton, S.M., "An Overview of the Development and use of Neuber's Rule for Fatigue Analysis," *SAE Transactions, Journal of Materials and Manufacturing*, Vol. 100, Sec. 5, Society of Automotive Engineers, 1991, pp. 143-148.

Tipton, S.M. and Newburn, D.A., "Plasticity and Fatigue Damage Modeling of Severely Loaded Tubing," *Advances in Fatigue Lifetime Predictive Techniques, STP 1122*, American Society for Testing and Materials, 1992, pp. 369-382.

Sorem, J.R., Jr. and Tipton, S.M., "An Analysis of a Thick Walled 60 Degree Lateral Pipe," PVP-Vol. 238, *American Society of Mechanical Engineers, Codes and Standards and Applications for High Pressure Equipment*, 1992, pp. 209-217.

Shoup, G.J., Tipton, S.M. and Sorem, J.R., "The Effect of Proof Loading on the Fatigue Behavior of Studded Chain," *International Journal of Fatigue*, Vol. 14, No. 1, Jan. 1992, pp 35-40.

Dill, C., Tipton, S.M., Glaessgen, E.H. and Branscum, K.D., "Fatigue Strength Reduction Imposed in a Fiberglass Composite," *Damage Detection and Quality Assurance in Composite Materials, STP 1128*, American Society for Testing and Materials, 1992, pp. 152-162.

Tipton, S.M. and Bannantine, J.A., "Inelastic Stress-Strain Predictions for Multiaxial Fatigue Damage Evaluation," *Advances in Multiaxial Fatigue, ASTM STP 1191*, D.L. McDowell and R. Ellis, Eds., American Society for Testing and Materials, Philadelphia, 1993, pp. 273-297.

Tipton, S.M. and Sorem, J.R., "A Reversed Plasticity Criterion for Specifying Optimal Proof Load Levels," *Advances in Fatigue Lifetime Predictive Techniques: Second Volume, ASTM STP 1211*, M.R. Mitchell and R.W. Landgraf, Eds., American Society for Testing and Materials STP, Philadelphia, 1993, pp. 186-202.

Yang, S., Badr, E.A., Sorem, J.R., Jr. and Tipton, S.M., "Advantages of Sequential Crossbore Autofrettage of Triplex Pump Fluid End Crossbores," *Pressure Vessel and Piping: High Pressure - Codes, Analysis and Applications*, Vol. 263, American Society of Mechanical Engineers, 1993, pp. 81-89.

Klann, D.A., Tipton, S.M. and Cordes, T.S., "Notch Stress and Strain Estimation Considering Multiaxial Constraint," *SAE Transactions, Journal of Materials and Manufacturing*, Vol. 102, Sec. 5, Society of Automotive Engineers, 1993, pp. 321-331.

Sorem, J.R., Jr., and Tipton, S.M., "The Use of Finite Element Codes for Cyclic Stress-Strain Analysis," *Fatigue Design*, European Structural Integrity Society, Vol. 16, Mechanical Engineering Publications, London, 1993, pp. 187-200.

Sorem, J.R., Glaessgen, E.H. and Tipton, S.M., "Experimental Determination of the Effect of Hole Interaction on Stress Concentrations in Angle Ply Graphite/Epoxy Composite Panels," *11th Volume, Composite Materials: Testing and Design, ASTM STP 1206* Eugene T. Camponeschi, Jr., Ed., American Society for Testing and Materials, 1994, pp 238-248.

Badr, E., Yang, S., Sorem, J.R., Jr. and Tipton, S.M., "Development of a Cyclic High Pressure Fatigue Test System," *PVP-Vol. 281, High Pressure Technology*, American Society of Mechanical Engineers, 1994, pp. 63-71.

Tipton, S.M., Hickey, K., Rawson, M.S. and Sorem, J.R., Jr., "Multiaxial Stress Concentration in an Externally Pressurized Cylinder with an External Groove," *Transactions of the ASME, Journal of Pressure Vessel Technology*, Vol. 117, No. 4, 1995, pp. 404-409.

Tipton, S.M., "Multiaxial Plasticity and Fatigue Life Prediction in Coiled Tubing," *Fatigue Lifetime Predictive Techniques: 3rd Volume, ASTM STP 1292*, M.R. Mitchell and R.W. Landgraf, Eds., American Society for Testing and Materials, 1996, pp. 283-304.

Tipton, S.M., Sorem, J.R., Jr. and Rolović, R.D., "Updated Stress Concentration Factors for Filleted Shafts in Tension and Bending," *ASME Journal of Mechanical Design*, Vol. 118, No. 3, 1996, pp. 321-327.

Tipton, S.M. and Nelson, D.V., "Advances in Multiaxial Fatigue Life Prediction for Components with Stress Concentrations," *International Journal of Fatigue*, Vol. 19, No. 6, 1997, pp. 503-515.

Tipton, S.M., "Coiled Tubing Deformation Mechanics: Diametral Growth and Elongation," *SPE Journal of Production and Facilities*, August, 1998.

Tipton, S.M., "Low-Cycle Fatigue Testing of Tubular Material using Non-Standard Specimens," *Effects of Product Quality and Design Criteria on Structural Integrity*, ASTM STP 1337, R.C. Rice and D.E. Tritsch, Eds., American Society for Testing and Materials, 1998, pp. 102-119.

Tipton, S.M. and Sorem, J.R., Jr., "Fatigue Durability Enhancement by Controlled Overloading," *Fatigue and Fracture Mechanics, Twenty-Ninth Volume*, ASTM STP 1332, T.L. Panontin and S.D. Sheppard, Eds., American Society for Testing and Materials, West Conshohocken, PA, 1999, pp. 584-589.

Rolović, R. and Tipton, S.M., "An Energy Based Critical Plane Approach to Multiaxial Fatigue Analysis," *Fatigue and Fracture Mechanics, Twenty-Ninth Volume*, ASTM STP 1332, T.L. Panontin and S.D. Sheppard, Eds., American Society for Testing and Materials, West Conshohocken, PA, 1999, pp.599-613.

Badr, E.A., Sorem, J.R., Jr. and Tipton, S.M., "Residual Stress Estimation in Crossbores with Bauschinger Effect Inclusion using FEM and Strain Energy," *Journal of Pressure Vessel Technology*, American Society of Mechanical Engineers, Vol. 121, No. 4, Nov., 1999, pp. 358-363.

Rolović, R. and Tipton, S.M., "Multiaxial Cyclic Ratcheting in Coiled Tubing, Part I: Theoretical Modeling," *Journal of Engineering Materials and Technology*, American Society of Mechanical Engineers, Vol. 122, 2000, pp. 157-161.

Rolović, R. and Tipton, S.M., "Multiaxial Cyclic Ratcheting in Coiled Tubing, Part II: Experimental Program and Modeling Evaluation," *Journal of Engineering Materials and Technology*, American Society of Mechanical Engineers, Vol. 122, 2000, pp. 162-167.

Badr, E.A., Sorem, J.R., Jr., Tipton, S.M. and Yang, S., "An Analytical Procedure for Estimating Residual Stresses in Blocks Containing Crossbores," Elsevier Science, *International Journal of Pressure Vessels and Piping*, Vol. 77, No. 12, pp. 737-749, 2000.

Badr, E.A., Sorem, J.R., Jr., and Tipton, S.M., "Evaluation of the Autofrettage Effect on Fatigue Lives of Steel Blocks with Crossbores Using a Statistical and a Strain-Based Method," American Society of Mechanical Engineers, *Journal of Testing and Evaluation*, Vol. 28, Issue 3, pp. 181-189, 2000.

Rolović, R.D., Tipton, S.M. and Sorem, J.R. Jr., "Multiaxial Stress Concentration in Filleted Shafts," *Journal of Mechanical Design*, American Society of Mechanical Engineers, Vol. 123, June, 2001, pp. 300-303.

In Preparation:

Tipton, S.M., Jallipalli, S., and Sorem, J.R., Jr., "Stress Concentration Factors for Tapered Shafts in Tension, Bending and Torsion"

B. Patents

U.S. Patent 4,792,106, "A Magnetic Bail Trip for Spinning Reels," (Hlava, L. and Tipton, S.M.), December, 1988.

U.S. Patent 5,040,743, "Spinning Reels with Rear-Actuated Front Drag," (Zurcher, J.A., Chapman, J.W. Tipton, S.M. and Feehan, R.J.), August, 1991.

U.S. Patent 5,143,318, "Oscillation Structure for Fishing Reel," (Tipton, S.M. and D.E. Roberts), September, 1992.

U.S. Patent 5,199,665, "Electronic Bait Alert for Fishing Reel," (Tipton, S.M.), April, 1993.

U.S. Patent 5,838,638, "Portable Vertical Jump Measuring Device," (Tipton, S.M., Willson, K.L. and Hackworth, M.), November, 1998.

U.S. Patent 6,093,119, "Football Training Apparatus" (Tipton, S.M.), July, 2000.

U.S. Patent 6,181,647, "Vertical Jump Measuring Device," (Tipton, S.M., Willson, K.L. and Hackworth, M.), January, 2001.

U.S. Patent Application, "Vibrating Mouthpiece for Teething Infants" (Jacobs, K, and Tipton, S.M.) submitted 1999, denied.

U.S. Patent Application, "Finish Screw Threaded Fastener," (Higgenbotham, D. and Tipton, S.M.) submitted August, 2003.

U.S. Patent Application, "Storage Apparatus," (Lampe, H. and Tipton, S.M.) submitted September, 2003.

C. Professional Presentations

Tipton, S.M., "Fatigue Life Predictions for a Notched Shaft in Combined Bending and Torsion," International Symposium on Multiaxial Fatigue, American Society for Testing and Materials, San Francisco, California, December, 1982.

Tipton, S.M., "Fatigue Crack Propagation Properties of a 1045 Steel," Society of Automotive Engineers, Fatigue Design and Evaluation Committee Meeting, Champaign-Urbana, Illinois, April 12, 1983.

Tipton, S.M., "Fatigue Life Predictions for a Specimen with a Stress Concentration, Subjected to Combined Bending and Torsion," Solid Mechanics Seminar, Stanford University, Stanford, California, November 10, 1983.

Tipton, S.M., "Elastic-Plastic Bending Stress-Strain Analysis of a Round Bar with a Shoulder Fillet," Society of Automotive Engineers, Fatigue Design and Evaluation Committee Meeting, Columbus, Ohio, April 3, 1984.

Tipton, S.M., "Multiaxial Fatigue Life Predictions in the Presence of a Notch," MTS Systems Corporation Seminar, Minneapolis, Minnesota, September 25, 1984.

Tipton, S.M., "Fatigue Crack Propagation Predictions in a Round Bar with a Shoulder Fillet Subjected to Cantilevered Bending," Society of Automotive Engineers, Fatigue Design and Evaluation Committee Meeting, Minneapolis, Minnesota, September 25, 1984.

Tipton S.M., "Recent Research in Biaxial Fatigue Life Prediction Methods," NASA Seminar on High Temperature Multiaxial Research, NASA Lewis Research Center, Cleveland, Ohio, January 22, 1985.

Tipton, S.M., "The Effect of Multiaxial Stresses in the Shoulder Fillet of a Round Bar in Bending on the Stress Concentration Factor," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium VII, Norman, Oklahoma, February 1985.

Tipton, S.M., "The Application of Fracture Mechanics to Design and Failure Analysis," presented to the American Society for Metals, Tulsa Chapter, Tulsa, Oklahoma, November, 1985.

Tipton, S.M., "Crack Propagation Analysis of a Shoulder Filleted Shaft," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium VIII, Stillwater, Oklahoma, February 1986.

Tipton, S.M., "A Proposed Testing Program for Multiaxial Loading of Notched Components," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Moline, Illinois, October 7, 1986.

Tipton, S.M., "The Prediction of Cyclic Strains in Notched Mechanical Components," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium IX, Tulsa, Oklahoma, February 1987.

McGrann, R.T.R. and Tipton, S.M., "Multiaxial Fatigue Testing Facility," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium IX, Tulsa, Oklahoma, February 1987.

Carlson, G.H. and Tipton, S.M., "The Behavior of Multiple Kinematic Yield Surfaces Subjected to Neutral Loading," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium IX, Tulsa, Oklahoma, February 1987.

Tipton, S.M., "Cyclic Strain Estimation in a Notched, Induction Hardened Shaft in Bending," American Society for Testing and Materials, Subcommittee E9.01 on Fatigue Research, Sparks, Nevada, April 26, 1988.

Tipton, S.M., "Cyclic Elastic-Plastic Strain Estimation for Notched Shafts in Bending," Proceedings of the Third International Conference on Biaxial/Multiaxial Fatigue, April 3-6, 1989, Stuttgart, West Germany.

Crandall, L.M. and Tipton, S.M., "The Local Strain Approach for Evaluating Notch Fatigue in 8620 Cast Steel," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Iowa City, Iowa, October, 1989.

Tipton, S.M. and Vecseri, G. "Cyclic Notch Strain and Fatigue Research using Discriminating Specimens," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Warrendale, PA, April, 1990.

Branscum, K.D. and Tipton, S.M., "The Critical Compilation of Fatigue Crack Propagation Data," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Warrendale, PA, April, 1990.

Tipton, S.M., "Assessing Fatigue Life using Nonlinear Notch Stress and Strain," Workshop on Multiaxial Fatigue, American Society for Testing and Materials, April, 1990, San Francisco, California.

Tipton, S.M. and Newburn, D.A., "Plasticity and Fatigue Damage Modeling of Severely Loaded Tubing," American Society for Testing and Materials STP from the First Symposium on Advances in Fatigue Lifetime Predictive Techniques, April, 1990, San Francisco, California.

Newburn, D.A. and Tipton, S.M. "Strain Measurement and Damage Analysis in Low-Cycle Multiaxial Fatigue," FATIGUE 90, Fourth International Conference on Fatigue and Fatigue Threshold in the Pacific Basin, Honolulu, Hawaii, July, 1990.

Tipton, S.M. "Analysis of Elastic Stress Concentration in Shoulder Filleted Shafts in Bending," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Peoria, Illinois, October, 1990.

Tipton, S.M., Dill, C.W., Glaessgen, E.H. and Branscum, K.D., "Fatigue Strength Reduction Imposed in a Fiberglass Composite," presented at the American Society for Testing and Materials Symposium on Damage Detection and Quality Assurance in Composite Materials, November, 1990, San Antonio, Texas.

Tipton, S.M., "A Hand Powered Miniature Fatigue Testing Machine," presented to the American Society for Testing and Materials Committee E9.01.05 on Fatigue Education, November, 1990, San Antonio, Texas.

Tipton, S.M. "A Review of the Development and Use of Neuber's Rule for Fatigue Analysis," Society of Automotive Engineers International Congress, Detroit, February, 1991.

Tipton, S.M., "Group Problem Solving Techniques," presented at the Executive Conference on Innovation, Creativity and Employee Involvement in the 90's, March 28, 1991, Tulsa, Oklahoma.

Tipton, S.M., "Group Problem Solving Techniques," presented to the Fort Howard Paper Company, April, 1991, Muskogee, Oklahoma.

Tipton, S.M., "Numerical Analysis of Elastic-Plastic Stress-Strain in Discriminating Specimens," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Detroit, Michigan, April, 1991.

Tipton, S.M., "An Overview of Multiaxial Fatigue Design and Analysis," presented at the Deere and Company, Technical Center, May, 1991.

Tipton, S.M., "Fatigue of Anchor Chain," presented at the 1991 Wohler Symposium, University of Illinois, Urbana-Champaign, Illinois, August 1991.

Tipton, S.M., "Inelastic Stress-Strain Prediction for Multiaxial Fatigue Damage Evaluation," presented at the American Society for Testing and Materials Symposium on Multiaxial Fatigue, October, 1991, San Diego, California.

Tipton, S.M., "Notch Strain Analysis to Estimate the Effect of Proof Loading on the Fatigue Strength of Chain," presented at the American Society for Testing and Materials Workshop on Case Studies for Fatigue Education, October, 1991, San Diego, California.

Tipton, S.M., "A Reversed Plasticity Criterion for Specifying Optimal Proof Load Levels," presented at the AIAA/ASME Symposium XIV, Tulsa, February, 1992.

Tipton, S.M. and Rolović, R., "Multiaxial Fatigue Life Prediction Based on an Absorbed Energy Approach," presented at the AIAA/ASME Symposium XIV, Tulsa, February, 1992.

Tipton, S.M., "Notch Strain Estimation Considering Multiaxial Constraint," Society of Automotive Engineers, Fatigue Design and Evaluation Committee, Fatigue Lifetime Prediction Division, Dubuque, Iowa, April, 1992.

Sorem, J.R. and Tipton, S.M., "A Reversed Plasticity Criterion for Specifying Optimal Proof Load Levels," American Society for Testing and Materials, Second Symposium Advances in Fatigue Lifetime Predictive Techniques, May, 1991, Pittsburgh, PA.

Sorem, J.R., Glaessgen, E.H. and Tipton, S.M., "Experimental Determination of the Effect of Hole Interaction on Stress Concentrations in Angle Ply Graphite/Epoxy Composite Panels," American Society for Testing and Materials, 11th Symposium on Composite Materials: Testing and Design, May, 1991, Pittsburgh, PA.

Shoup, G.J., Tipton, S.M. and Sorem, J.R., Jr., "The Influence of Proof Loading on the Fatigue Strength of Anchor Chain," 1992 Offshore Technology Conference, May, 1992, Houston, Texas.

Tipton, S.M. and Sorem, J.R., Jr., "The Use of Finite Element Codes for Cyclic Stress-Strain Analysis," presented at the International Symposium - Fatigue Design 1992, Helsinki, Finland, May, 1992.

Sorem, J.R., Jr. and Tipton, S.M., "An Analysis of a Thick Walled 60 Degree Lateral Pipe," presented at the 1992 American Society of Mechanical Engineers Pressure Vessels and Piping Conference, New Orleans, LA, June, 1992.

Tipton, S.M., "A Miniature Fatigue Test Machine," National Educators' Workshop, NEW: Update 92, Department of Energy, Oak Ridge National Laboratory, Oak Ridge Tennessee, November, 1992.

Sorem, J.R., Jr., Shadley, J.R., and Tipton, S.M., "Design Curves for Maximum Stresses in Blocks Containing Pressurized Bore Intersections," ASME Winter Annual Meeting, November 1992, Anaheim, California.

Yang, S., Badr, E.A., Sorem, J.R., Jr. and Tipton, S.M., "Advantages of Sequential Crossbore Autofretting of Triplex Pump Fluid End Crossbores," Pressure Vessel and Piping: High Pressure - Codes, Analysis and Applications, Vol. 263, American Society of Mechanical Engineers, Denver, July 1993.

Tipton, S.M., "CoilLIFE Algorithm Development," DEA-44/67 International Technology Forum, Maurer Engineering, Inc., September, 1993, Houston, Texas.

Yang, S., Sorem, J.R., Jr. and Tipton, S.M., "Analysis of Fatigue and Residual Stresses in Autofretted Crossbore Intersections," Society of Automotive Engineers Fatigue Design and Evaluation Committee, H.O. Fuchs Travel Award Presentation, Toledo, Ohio, Oct. 1993.

Tipton, S.M., Placido, J.C. and Brown, P.A., "Two Unique Multiaxial Fatigue Testing Facilities for Full-Scale, Down-Hole Oil Filed Hardware," Workshop on Multiaxial Fatigue Testing Techniques, American Society for Testing and Materials, November 16, 1996.

Tipton, S.M., "Modeling the Fatigue Behavior of Coiled Tubing," 17th Annual Energy-sources Technology Conference and Exhibition, New Orleans, Louisiana, January 23-26, 1994.

Tipton, S.M., "Modeling Coiled Tubing Fatigue Life," Second International Conference on Coiled Tubing Operations, Gulf Publishing Company and World Oil, Houston Texas, March 28-31, 1994.

Tipton, S.M., "Multiaxial Plasticity and Fatigue Life Prediction in Coiled Tubing," Third ASTM Symposium on Fatigue Lifetime Predictive Techniques, Montreal, Quebec, Canada, May, 1994.

Badr, E., Yang, S., Sorem, J.R., Jr. and Tipton, S.M., "Development of a Cyclic High Pressure Fatigue Test System," American Society of Mechanical Engineers, Pressure Vessel and Piping High Pressure Technology, June, 1994.

Tipton, S.M. and Nelson, D.V., "Developments in Life Prediction of Notched Components Experiencing Multiaxial Fatigue," presentation at Chrysler Technology Center, Auburn Hills, Michigan, Oct. 5, 1994.

Shoup, G.J., Tipton, S.M. and Sorem, J.R., Jr., "The Effect of Proof Loading on the Fatigue Behavior of Open Link and Stud Link Chain," Society of Automotive Engineers Fatigue Design and Evaluation Committee, H.O. Fuchs Travel Award Presentation, Livonia, Michigan, Oct. 1994.

Tipton, S.M. and Nelson, D.V., "Developments in Life Prediction of Notched Components Experiencing Multiaxial Fatigue," in Material Durability/Life Prediction Modeling, ASME, Winter Annual Meeting, Chicago, November, 1994.

Tipton, S.M., "Coiled Tubing Mechanics Research Project, DEA-104," Drilling Engineering Association Meeting, August 17, 1995.

Tipton, S.M. and Rolović, Radovan, D., "Coiled Tubing Mechanics Research Project, Elongation and Diametral Growth, DEA-104," Joint Industry Project Launch/Informational Meeting, September 28, Houston, Texas, 1995.

Tipton, S.M. "Updated Elastic Stress Concentration Factors for Filleted Shafts under Axial, Bending and Torsional Loading," Society of Automotive Engineers Fatigue Design and Evaluation Committee, Toronto, Ontario, Canada, October 17, 1995.

Tipton, S.M. "Notch Strain Analysis for Shafts," Society of Automotive Engineers Fatigue Design and Evaluation Committee, Toronto, Ontario, Canada, October 17, 1995.

Tipton, S.M. "Examination of Welded Coiled Tubing Samples," DEA/GRI project, Dallas, Texas, October 26, 1995.

Tipton, S.M. "The Effects of Residual Stress on Fatigue," University of Oklahoma Applied Mechanics Seminar, Norman, Oklahoma, November 9, 1995.

Tipton S.M., "Taking Advantage of Residual Stresses for Fatigue Resistance," Invited Presentation, Bell Helicopter, Ft. Worth, Texas, November 21, 1995.

Tipton, S.M. and Sorem, J.R., "Elongation and Diametral Growth," Coiled Tubing Mechanics Research Project Launch Meeting, Houston, Texas, January, 1996.

Rolović, R., Grelecki, S.L., and Tipton, S.M., "Coiled Tubing Deformation Mechanics," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium XVI, Tulsa, Oklahoma, February, 1996.

Jallipalli, S., Rolović, R.D., Tipton, S.M. and Sorem, J.R., "Improved Stress Concentration Solutions for Shaft Geometries," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium XVI, Tulsa, Oklahoma, February 1996

Rolović, R.D. and Tipton S.M., "An Energy Based Critical Plane Approach to Multiaxial Fatigue," American Society of Mechanical Engineers/American Institute of Aeronautics and Astronautics Symposium XVI, Tulsa, Oklahoma, February 1996.

Tipton, S.M., "Coiled Tubing Deformation Mechanics: Diametral Growth and Elongation," ICoTA/SPE North American Coiled Tubing Roundtable, SPE 36336, Montgomery, Texas, February, 1996.

Rolović, R.D. and Tipton, S.M., "Elongation Mechanisms in Coiled Tubing," Fourth International Conference on Coiled Tubing Technology, Gulf Publishing Company and World Oil, Houston, Texas, March, 1996.

Tipton, S.M., Rolović, R.D. and Grelecki, S.L., "The Mechanics of Fatigue Crack Development in Coiled Tubing," Fourth International Conference on Coiled Tubing Technology, Gulf Publishing Company and World Oil, Houston, Texas, March, 1996.

Tipton, S.M., "Coiled Tubing Mechanics Research Project, Elongation and Diametral Growth, DEA-104," Idaho National Engineering Laboratories, Idaho Falls, Idaho, May 1996.

Jallipalli, S. and Tipton, S.M., "Stress Concentration Factors Solutions for Tapered Shafts," Society of Automotive Engineers Fatigue Design and Evaluation Committee, Columbus, Ohio, October, 1996.

Tipton, S.M., "Correlating Low-Cycle and Full-Scale Coiled Tubing Fatigue Data," 8th International Energy Week Conference, American Society of Mechanical Engineers, Houston, Texas, January 29, 1997.

Tipton, S.M., "Low-Cycle Fatigue Testing of Coiled Tubing Materials," World Oil Coiled Tubing and Well Intervention Technology Conference, Gulf Publishing Company and World Oil, Houston, Texas, February, 1997.

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Tipton, S.M. and Vo, T.T., "Experimental Structural Analysis of Magnesium Bakery Racks," Kaiser Aluminum Specialty Products, Tulsa, Oklahoma, August, 1989.

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"Low-Cycle Fatigue Testing of Coiled Tubing Materials," Quality Tubing, Houston, TX, 1996-97.

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"Analysis of 3.5" Coiled Tubing Fatigue Behavior Subjected to Large-Radius Curvature" CTES, Houston, Texas and PGS, Oslo, Norway, October 2000.

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Tipton, S.M. and Nelson, D.V., "Developments in Life Prediction of Notched Components Experiencing Multiaxial Fatigue," *Material Durability/Life Prediction Modeling*, PVP-Vol. 290, S.Y. Zamirk and G.R. Halford, eds., ASME, 1994, pp. 35-48.

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Behenna, R.R., Myrick, D.D., Stanley, R.K., Hammond, W.A., and Tipton, S.M., "Field Validation of Coiled Tubing Fatigue Models," *SPE/ICoTA Coiled Tubing Conference*, SPE 81726, The Woodlands, TX, April 2003.

Tipton, S.M., Behenna, R.R., Martin, J.R., "An Investigation of the Effects of the Physical Properties of Coiled Tubing on Fatigue Modeling," *SPE/ICoTA Coiled Tubing Conference*, SPE 89571, The Woodlands, TX, March 2004.

Tipton, S.M., Isaac, R., Breidenthal, W. and Rempel, J., "Repairing Surface Flaws in Coiled Tubing," *SPE/ICoTA 10th European Coiled Tubing and Well Intervention Round Table*, Aberdeen, Scotland, Nov. 2004.

G. Other Publications

"Senior Solutions," *Dialog*, The University of Tulsa, Summer, 1989.

Tipton, S.M., "Engineering Small Miracles," *The University of Tulsa Annual*, 1984-85.

"American Society for Testing and Materials Recommended Standard for Computerization of Fatigue Crack Propagation Data," E49.02.005R3, balloted July, 1991.

"American Society for Testing and Materials Recommended Standard for Computerization of Strain-Controlled Fatigue Testing per ASTM E606," E49.02.021R1, balloted October, 1991.

H. Research Proposals

Accepted:

National Science Foundation Supercomputer Grant, "Elastic-Plastic Stress-Strain Estimation for Fatigue Analysis," 35 hour CRAY allocation at the National Center of Supercomputer Applications, Urbana, Illinois, 1985.

Kirschner Foundation, "Engineering Projects in Human Services," \$14,299, 1986-1987.

National Science Foundation, "Multiaxial Cyclic Strain Estimation for Predicting Fatigue Crack Initiation in Notched Mechanical Components," \$93,865 for four years, 1986-1990.

National Science Foundation, Research Experiences for Undergraduates, \$13,040 to support two undergraduate laboratory assistants for two years, 1986-88.

Brunswick Foundation, "Computer Assisted Fatigue Design Research," \$9,820 for biaxial fatigue machine electromechanical components, September, 1987.

Kirschner Foundation, "Engineering Projects in Human Services," \$8,000 to fund projects for 1988-1989, March, 1988.

National Science Foundation, "Fracture Mechanics Characterization of Slit Edges in Thin Sheets and Membranes," \$50,000 for two years support, in conjunction with the Web Handling Research Center, Stillwater, Oklahoma, October, 1988.

Brunswick Foundation, "Fatigue Design Research," \$5,000 for axial fatigue testing machine components, 1989.

U.S. Department of Commerce, National Institute for Standards and Technology, "The Critical Compilation of Fatigue Crack Propagation Data," \$37,502 for one year, September, 1989.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$1,000,000, with numerous other P.I.'s from Oklahoma State and Oklahoma University, September, 1989, Associate Director for the University of Tulsa.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$35,000, "Fatigue and Fracture Design Guidelines for Finned Tubes," (with J.R.S. Sorem), 1989-1990.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$15,000, "Fracture Mechanics Analysis of Web Slitting," (with J.R.S. Sorem), 1989-1990.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$17,000, "Composites Structural Integrity Research Project," (with J.R.S. Sorem), 1990-1991.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$13,000, "Fracture Mechanics Analysis of Web Slitting," (with J.R.S. Sorem), 1990-1991.

National Science Foundation, Research Experiences for Undergraduates, \$8,000 to fund two undergraduate research assistants for one year, May, 1990.

Oklahoma Centers for Advanced Science and Technology, Applied Research Program, "Autofrettage of Thick-Walled Pressure Vessel Crossbores," \$413,697 June, 1990.

CWC Castings Division of Textron, Inc., "Low and High Cycle Fatigue Behavior of Vacuum Cast 8620 Steel," \$5,000, August, 1990.

Amoco Production Co., "Corrosion Fatigue Research Project, Phase I," \$6000, April 1 to May 31, 1990.

National Science Foundation, Research Experiences for Undergraduates, \$8,000 to fund two undergraduate research assistants for one year, May, 1991.

Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, \$30,000, "Composites Structural Integrity Research Project," (with J.R.S. Sorem and J.M. Henshaw), 1991-1992.

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Oklahoma Centers for Advanced Science and Technology, Center for Integrated Design and Manufacturing, "Composites Structural Integrity Research Project," \$30,000 (with J.R.S. Sorem and J.M. Henshaw), 1993-1994.

Norris / A Dover Resources Division, "Experimental/Analytical Investigation of High Strength Sucker Rod," \$33,585, May-December, 1995.

DOE EPSCoR Program Ph.D. Traineeship, "Petroleum Industry Applications of Low-Cycle Fatigue Technology," \$25,000/year for three years beginning June 1, 1995.

Consortium of Petroleum Related Companies, "Coiled Tubing Mechanics Research Project, Elongation and Diametral Growth, DEA-104," \$90,000/year January-December, 1996.

Ford Scientific Research Laboratory, "Stress Concentration Factors for Various Shaft Geometries," \$16,724 for one year, beginning January, 1996.

Consortium of Petroleum Related Companies, "Coiled Tubing Mechanics Research Project, Elongation and Diametral Growth, DEA-104," \$90,000/year January-December, 1997.

Consortium of Petroleum Related Companies, "Coiled Tubing Mechanics Research Project, Surface Defects and Fatigue Resistance," \$180,000/year, July 1997 – June 1998.

Consortium of Petroleum Related Companies, "Coiled Tubing Mechanics Research Project, Surface Defects and Fatigue Resistance," \$180,000/year, July 1998 – June 1999.

"Coiled Tubing Mechanics Research Consortium," \$150,000/year Sep. 2000 - Aug. 2001.

OCAST Student Faculty Internship, \$58,110 from OCAST and the Zebco Corporation, Feb. 2001- Feb. 2002.

"Coiled Tubing Mechanics Research Consortium," \$150,000/year Sep. 2001 - Aug. 2002.

"Carbon Composite Fatigue Performance under a Variety of Environments", \$200,000, Nordam Corporation, 2001-2003.

OCAST Student Faculty Internship Supplemental Grant, \$14,178 from OCAST and the Zebco Corporation, Apr. 2002 - June 2002.

"Coiled Tubing Mechanics Research Consortium," \$150,000/year Sep. 2002 - Aug. 2003.

OCAST Student Faculty Internship, \$60,000 from OCAST and the Zebco Corporation, May 2002- Apr. 2003.

"Coiled Tubing Mechanics Research Consortium," \$150,000/year Sep. 2003 - Aug. 2004.

OCAST Student Faculty Internship, \$60,000 from OCAST and the Zebco Corporation, May 2003- Apr. 2004.

"Coiled Tubing Mechanics Research Consortium," \$150,000/year Sep. 2004 - Aug. 2005.

OCAST Student Faculty Internship, \$40,000 from OCAST and the Zebco Corporation, May 2004- Apr. 2005.

In Review:

Not Accepted:

Engineering Foundation: Engineering Research Grant, "Simplified Design Approaches for Stress and Elastic-Plastic Strain Estimation in Components with Structural Discontinuities," \$17,000, Fall, 1984.

Engineering Foundation: Engineering Research Grant, "Crack Propagation Prediction through Notched Structures under Multiaxial Loading," \$17,000, Fall 1984.

Charles Stewart Mott Foundation, "Rehabilitation Engineering Projects," \$12,000, Spring, 1985.

C.W. Titus Foundation, "Engineering Projects in Human Services," \$13,812, Spring 1985.

Dresser Foundation, "Biaxial Fatigue Testing System," \$11,320 for biaxial fatigue machine components, Summer, 1987.

U.S. Department of Commerce, National Bureau of Standards, "The Compilation of Fatigue Crack Propagation Data," \$45,989 for one year, submitted February, 1988.

Oklahoma Centers for Advanced Science and Technology, MOST Research Equipment Program, "Fatigue and Fracture of Engineering Materials," \$35,470, Submitted May, 1989.

Oklahoma Centers for Advanced Science and Technology, MOST Research Equipment Program, "Fatigue and Strain Behavior of Induction Hardened Shafts," \$19,000, Submitted May, 1989.

Oklahoma Centers for Advanced Science and Technology, Applied Research Program, "Autofrettage of Thick-Walled Pressure Vessel Crossbores," \$400,000, submitted July, 1989.

Consortium of Petroleum Related Companies, "Corrosion Fatigue Research Project, Phase II," \$720,000 for three years, submitted August, 1991.

National Science Foundation, Research Infrastructure Program, "Corrosion Fatigue Research Project," \$360,000 for three year joint industry project, submitted January, 1992.

Oklahoma State Regents for Higher Education, "K-5 Science Enrichment: Engineering, Design and Manufacturing," \$69,667, February, 1993.

National Science Foundation, "Northeastern Oklahoma Teachers Education (NOTE)," \$5,451,865 for 5 years, (Dr. R. Howard, P.I.) 1995.

Ford Scientific Research Laboratory, "Stress Concentration Factors for Various Shaft Geometries," \$30,000, for continued work on existing project, September, 1996.

Caterpillar Inc., "Stress Concentration Factors for Various Shaft Geometries," \$16,724 match for Ford Project, September, 1997.

Deere and Co., Inc., "Stress Concentration Factors for Various Shaft Geometries," \$16,724 match for Ford Project, September, 1997.

Oklahoma Space Industry Development Authority, Space Education Program, "Multiple Rocket Launching Pad," \$35,710, submitted October, 2001.

OCAST High Performance R&D Centers, "Composite Trolling Reels with FSR Technology," \$232,538 from OCAST and the Zebco Corporation, and The University of Tulsa, April 1, 2003.

OCAST High Performance R&D Centers, "Finish Screw," \$77,889 from OCAST and The University of Tulsa, April 1, 2003.

OCAST Applied Research Program, "Carbon Clamp," \$120,000 from OCAST, Norris Sucker Rods and The University of Tulsa, 2004.

I. Masters and Doctoral Committees at The University of Tulsa

Sandhu, A., Stress Analysis and Fracture Modeling of Carbon-Carbon Composite Interlaminar Shear, Interlaminar Tension and Coated Tensile Specimens, M.S. Thesis, 1986.

Crandall, L.M., An Investigation of the Local Strain Approach for Evaluating Notch Fatigue in 8620 Cast Steel, M.S. Thesis, spring, 1989, chair (thesis advisor).

Smith, T.E., Fatigue Life and Strain Analysis of Notched Mechanical Components, M.S. Thesis, spring, 1989, chair (thesis advisor).

Newburn, D. Post Yield Cyclic Strain Response of Pressurized Tubes, M.S. Thesis, spring, 1990, chair (thesis advisor).

Vecseri, G. Nonlinear Notch Stress and Strain in Discriminating Fatigue Specimens, M.S. Thesis, spring, 1990, chair (thesis advisor).

Bax, A.J., Characterization of Razor Slitting in Thin Sheets and Membranes, M.S. Thesis, spring, 1991, chair (thesis advisor).

Branscum, K.D., The Critical Compilation of Fatigue Crack Propagation Data, M.S. Thesis, spring, 1991, chair (thesis advisor).

Luczycski, Thomas J., Sculpture, Master of Fine Art, fall, 1993 (co-advisor with Chuck Tomlins, Art Department).

Martens, R.I., Fatigue Strength Assessment of a Single Pass Submerged Arc Weld, M.S. Thesis, summer, 1994, chair (thesis advisor).

Elsinger, D., *An Analytical, LEFM Based Method for Predicting the Fatigue Life of Pump Liquid End Crossbores*, M.S. Thesis, summer, 1994 (co-advisor).

Badr, Elie, *Finite Element Modeling of Residual Stresses in Cyclically Loaded Fluid Ends, Including the Bauschinger Effect*, Ph.D. Dissertation, spring, 1994, (co-advisor).

Placido, Joao Carlos, *Development of a Predictive Drillpipe Fatigue Model and Experimental Verification*, Ph.D. Dissertation, summer, 1994 (co-advisor).

Shoup, G.J., *The Effect of Proof Loading on the Fatigue Behavior of Open Link and Stud Link Chain*, M.S. Thesis, fall 1994, chair (thesis advisor).

Yang, Shuilong, *Effect of Autofrettage on the Fatigue Life of Fluid End Crossbores for Positive Displacement Pumps*, Ph.D. Dissertation, spring, 1995, (major advisor).

McGrann, Roy T.R., *The Relation of Material Properties, Residual Stresses, and Thermal and Mechanical Loadings to Coating Degradation in Thermal Barrier Coatings and Tungsten Carbide Thermal Spray Coatings*, M.S. Thesis, spring 1997.

Lagrec, Alejandro J. V., *Mathematical Modeling of Insertion Forces for Running-in Casing Strings in 2-D Wellbores with Hole Curvatures (Dogleg Severity) and High Deviation Angles*, M.S. Thesis, fall 1997.

Qiu, Weiyong, *Theoretical and Experimental Study of Buckling Behavior of Coiled Tubing and Axial Force Transfer Modeling in Coiled Tubing Drilling*, Ph.D. Dissertation, fall 1997.

Lendi, Andreas O., *Fatigue Strength of Bolted Connections*, M.S. Thesis, 1997 (major advisor).

Rolović, Radovan, *Plasticity Modeling of Multiaxial Cyclic Ratcheting in Coiled Tubing*, Ph.D. Dissertation, fall 1997 (major advisor).

Jallipalli, Shreekanth, *Stress Concentration Factors for Tapered Shaft Geometries*, M.S. Thesis, fall 1997 (major advisor).

Grelecki, Sharon, *Development of a Coiled Test Facility*, M.S. Thesis, summer 1998 (major advisor).

Cliff, M. J., *Three Dimensional Nonlinear Structural Finite Element Analysis of Coiled Tubing Surface Defects*, M.S. Thesis, spring 1999 (major advisor).

Chan, Henky, *Mathematical Modeling of Transient Wellbore Trajectory for Simple BHA*, M.S. Thesis, spring 2001.

Chinsethagid, Chay, *A Comparison of Fatigue Behavior and Crack Development in Coiled Tubing Defects*, M.S. Thesis, spring 2002 (major advisor).

Moran, Daniel, W., *Development of a Coiled Tubing Inspection Facility utilizing Magnetic Flux Leakage Measurements*, M.S. Thesis, summer 2002 (major advisor).

Fujan, Steven J., *Prediction of Fatigue Damage in Structural Components of High Capacity Surface Mining Trucks using Suspension Force Measurements*, M.S. Thesis, spring 2002 (major advisor).

Roberts, Tyler C., *Finite Element Analysis of Magnetic Flux Leakage in Coiled Tubing*, M.S. Thesis, fall 2003 (major advisor).

Zdvizhkov, Andrey A., *Study of Induced Torsion and Axial Force Transfer in Helically Buckled Tubulars*, M.S. Thesis, spring 2004.

Akilla, Deepthi, *Analysis of Magnetic Flux Leakage Signals for Surface Defects in Coiled Tubing*, M.S. Thesis, fall 2004 (major advisor).

J. Continuing Education/Short Course Activities

Zebco/Quantum/Motorguide Technical Conferences, Tulsa, Oklahoma 1987, Danbury, Texas, 1988, Starkville Mississippi, 1989.

"Integration of Creativity in the Mechanical Engineering Curriculum," Sponsored by The American Society for Engineering Education, June 19-30, 1989, Stanford California.

"Seeing and Solving Problems: A Seminar to Enhance Creative Thinking for Engineering Design and Development," presented to Nelson Electric company, Tulsa, Oklahoma, April, 1990.

"Innovation, Creativity and Employee Involvement in the 90's: Developing the Quality Workforce and Beyond," Executive Conference held at The University of Tulsa, March 28, 1991.

"MTS 458 Controller Operation Course," MTS Systems Corporation, Minneapolis, MN, June 17-20, 1991.

"National Educators' Workshop," Department of Energy, Oak Ridge National Laboratory, Oak Ridge Tennessee, November, 1992.

Pro/Engineer Training, Advanced Applications, January and February, 2001.

K. Technical Consulting

"Failure Analysis of a Piezoelectric Crystal Used as a Signal Filter," Transitek Incorporated, Santa Clara, California and the Bay Area Rapid Transit District, Oakland, California, June, 1981.

"Strain Analysis for an Optical Fiber Formed into an Ellipse and Wrapped onto a Circular Mandril," Raychem Corporation, Mountain View, California, November, 1982.

"Fatigue Life Prediction in Elastomeric Materials," FMC Corporation, Santa Clara, California, January, 1983.

"Investigation of Residual Stresses in a Torsion Bar Resulting from Pre-Setting," FMC Corporation, Santa Clara, California, June, 1983.

"Wear Prediction for a Proposed Rack and Pinion Drive with a Preload," Microscience International Corporation, Mountain View, California, September, 1983.

"Failure Analysis of a Powdered Metal Part in a Power Take-Off Unit." Vicker Corporation, Tulsa, Oklahoma, January, 1985.

"Design Stress Analysis of a Roof Truss in the First Baptist Church of Inola Activity Center," Inola, Oklahoma, March 1985.

"Durability Analysis of Various Mechanical Components," Telex Computer Corporation, Tulsa, Oklahoma, April, 1985.

"Strain Gage Analysis of Casing Strains in a Water Jet Assisted Drill Bit," FlowDril, Inc., Kent Washington, May, 1988.

"Biaxial Strain Measurement and Fatigue Damage Modeling in Stainless Steel Fuel Filters," Purolator Products Inc., Tulsa, Oklahoma, October, 1989.

"Experimental Structural Analysis of Magnesium Bakery Racks," Kaiser Aluminum Specialty Products, Tulsa, Oklahoma, August, 1989.

"Stress and Fatigue Analysis of Down-Hole Oil Tool Components," Baker Oil Products, Broken Arrow, Oklahoma, 1989 - present.

"Fishing Reel Design," Zebco Division of Brunswick Corporation, Tulsa, Oklahoma, 1984-1989.

"Dynamic Strain Measurement on Flight Simulator Frame and Joint Components," Flight Safety International, Tulsa, Oklahoma, October 1989.

"Comparison of the Effect of Autofrettage Pressure on Fluid End Fatigue Damage Assessment", Dowell Schlumberger Inc., Tulsa, Oklahoma, April, 1990.

"Strain Gage and Fatigue Analysis of PT-4000 Frames, Standard and Modified Versions," Stairmaster Corporation, Tulsa, Oklahoma, June, 1990.

"Multiaxial Fatigue Cumulative Damage Model for Coiled Tubing," Dowell Schlumberger Inc., Tulsa, Oklahoma, 1990 - present.

"Fatigue Design Analysis of High Pressure Components," Dowell Schlumberger Inc., Tulsa, Oklahoma, December, 1990 - present.

"Effect of Proof Loading on Fatigue of Open and Studded Lifting Chain," Amoco Production Company, December, 1990.

"Examination and Failure Analysis of a Nitrided TSIO-520-R Crankshaft," Rick Romans, Inc., Jan. 1991.

"Evaluation of Multiaxial Fatigue Design Methodologies" Deere and Co. Technical Center, Moline, IL, November, 1990 to June, 1992.

"A Modified Notch Stress-Strain Relation Considering Constraint," Deere and Company, Technical Center, Moline Illinois, February, 1992.

"Fatigue Design Analysis of Aircraft Components and Materials," Nordam, Tulsa, Oklahoma, May, 1993 - present.

"Hold Time Effects on Fatigue Life of Polymeric Rupture Disks," OSECO Co., Broken Arrow, Oklahoma, July, 1993.

"Design of Pultruded Fan Blade / Aluminum Shank Assembly," Chittom International, Tulsa Oklahoma, August, 1994.

"Failure Analysis of Grade 70 Transport Chain," Thornton & Summers, Austin, Texas, January, 1995.

Technical Consultant to the Associated Wire Rope Fabricators, Testing Committee, 1994-present.

"Multiaxial Fatigue Cumulative Damage Model" Coiled Tubing Engineering Services, Conroe, Texas, January, 1995.

"Izod Impact Testing of Four Aluminum Alloys," Nordam, Tulsa, Oklahoma, March, 1995.

"Metallurgical Examinations of Welded Coiled Tubing Samples," DEA Project, Coiled Tubing Engineering Services, Conroe, Texas, October, 1995.

"Fatigue Durability of Driver Links on Jet Engine Thrust Reversers," Nordam, Tulsa, OK, 1996.

"Low-Cycle Fatigue Testing of Coiled Tubing Materials," Quality Tubing, Houston, TX, 1996-97.

"Low-Cycle Fatigue Testing of Coiled Tubing Materials," Precision Tube Technology, Houston, TX, 1997.

"Fatigue Testing of Dimpled Coiled Tubing Samples," Centrilift, Claremore, OK, 1997.

“Endurance Analysis of a Coiled Off-Shore Stainless Steel Umbilical,” Schlumberger, Dowell, Rosharon, Texas, 1998.

“Review of the Design Procedure for Die Handling Attachments,” General Motors NAO Mfg. Center, Warren, MI, co-authored with E.F. Rybicki, 1998.

“Fatigue Life Estimate of Rollers in a Fin Tube Manufacturing Cell,” Fintube Corp., Tulsa, Ok, 1999.

“Review of CSO Project: Qualification of Reeled Steel Cantenary Risers,” Coflexip Stena Offshore, Ltd., Aberdeen Scotland, 1999.

Strain-Controlled Low-Cycle Fatigue Testing QT-1200 Axial Coupons,” Deep Vision, LLC, Houston, Texas, July, 1999.

“Design and Construction of a Coiled Tubing Fatigue Testing System,” BJ Newsco, Calgary, Canada, January, 2000.

“Analysis of 3.5” Coiled Tubing Fatigue Behavior Subjected to Large-Radius Curvature” CTES, Houston, Texas and PGS, Oslo, Norway, October 2000.

“Improved Design Efficiency for Coiled Tubing Downhole Tool Design,” Schlumberger Corporation, January-December, 2001.

“AWRF Sling Analyzer,” lifting analysis software developed for the Associated Wire Rope Fabricators, October, 2001.

“Development of Improved Coiled Tubing Fatigue Life Prediction Model”, Halliburton Energy Services, Duncan, OK, and CTES, Conroe, Texas, 2002.

“Review of the Preston-Eastin Elevating Headstock Noise and Vibration Analysis”, for Preston-Eastin, Tulsa, OK, June 2003.

“Structural Integrity Limit Analysis for Coiled Tubing with Reduced Wall Sections,” written for CTES and ExxonMobil, Nov. 2004.

“Strain-Controlled Low-Cycle Fatigue Testing QT16CR800 Axial Coupons,” Quality Tubing, Inc., Jan. 2005.

L. Civic Activities

Forest Park Christian Church Member, Deacon.

Tulsa Zoo Friends (member and contributor of technical expertise to exhibits)

Union Public Schools Science Curriculum Review Committee Member, 1993.

Invited High School Science Speaker (Jenks High School), 1985.

Science Fair Judge, 1990-present.

Elementary School: Conducts Hands-On Science and Engineering Experiments, Darnaby Elementary, 1991-present.

Engineering Demonstrations and Hands-On Activities, High Schools and Jr. High Schools in Tulsa, 1997-present.

Soccer Coach, Union Soccer Club, 1991-2002.

Baseball Coach, Tulsa Thunderbirds, (former Tulsa Kids Baseball City Champions), 1992-2000.

M. The University of Tulsa Service Activities

Mechanical Engineering Undergraduate Advisor, 1989-present.

University Traffic Appeals Committee, 1994-1996

Associate Director of Research for The Oklahoma Center for Integrated Design and Manufacturing, 1989-present.

College of Engineering and Applied Sciences Committee on Research Incentive, 1987-1989.

American Society of Mechanical Engineers Student Section Faculty Advisor, 1985-1988, 1993-1994.

Tau Beta Pi Faculty Advisor, 1986-1988.

Tulsa University Rugby Club Faculty Advisor, 1985-1986.

University Senator, 1985-1986, 1991-1993, 2005.

Academic Affairs Council, 1985-1986.

College of Engineering and Applied Sciences Committee on Rights and Responsibilities, 1993-1995.

Member Graduate Council, 1995-1997.

Member, Promotion and Tenure Committee, College of Engineering and Natural Sciences 2000-2001.