

ROBERTO A. OSEGUEDA

Vice President for Research
Professor of Civil Engineering
The University of Texas at El Paso
El Paso, Texas 79968,
Phone: (915) 747-5680, FAX: (915) 747-6474
email: osegueda@utep.edu.

PERSONAL: U.S. Citizen, Married, Three children

EDUCATION

Ph.D. May 1987, Texas A&M University, Civil Engineering.
M.S. Dec. 1983, Texas A&M University, Civil Engineering.
B.S. Aug. 1981, Texas A&M University, Civil Engineering, Cum Laude.

EXPERIENCE

September 2007 to Present, Vice President for Research
September 2006 to August 2007, Vice Provost for Research, The University of Texas at El Paso
September 2003 to August 2005, Associate Dean of Engineering, University of Texas at El Paso
Jan. 2003 to August 2003, Interim Dean of Engineering, University of Texas at El Paso
Sept. 2001 to Jan. 2003, Assistant Dean of Engineering, University of Texas at El Paso
Sept. 97 to present, Professor, Civil Engineering Department, University of Texas at El Paso
June 97 to Aug. 97, A. D. Welliver Faculty Summer Fellow, Boeing Company, Seattle, Washington
Sept. 95 to Jan. 2003, Director, FAST Center for Structural Integrity of Aerospace Systems, UTEP
Sept. 94 to Oct. 2001, Graduate Advisor, Civil Eng. Department, University of Texas at El Paso
Sept. 93 to Aug. 97, Associate Professor, Civil Engineering Dept., University of Texas at El Paso
Sept. 87 to Aug. 93, Assistant Professor, Civil Engineering Department, University of Texas at El Paso
May 87 to Aug. 87, Research Associate, Civil Eng. Dept., Texas A&M University, College Station
Jan. 87 to May 87, Assistant Lecturer, Civil Eng. Department, Texas A&M University, College Station
Jan. 81 to May 87, Graduate Research Assistant, Texas Transportation Institute, Civil Engineering Department, Texas A&M University, College Station

SOCIETIES AND AWARDS

A. D. Welliver Faculty Fellowship, Boeing Co., Summer 1997
Professor of the Year, Civil Engineering Department, U. T. El Paso, 1993
Outstanding Professor of Civil Engineering, Chi Epsilon, U. T. El Paso, 1987-88
Chi Epsilon, Tau Beta Pi, Sigma Xi
Transportation Research Board
Society of Mexican American Engineers and Scientists
Society of Experimental Mechanics
American Society of Civil Engineers (ID# 342781)
America Society for Engineering Education

RESEARCH INTERETS

Research interests have focused on several multidisciplinary fields. Among these are nondestructive damage evaluation of structures, experimental and analytical modal analysis, semi-active control of structures, finite element applications, NDE for aging aircraft and civil structures,

effects of overweights on bridges, routing of overweight vehicles, Geographic Information Systems, laser methods for inspecting structures, artificial neural networks and data fusion methodologies to process NDE information.

PROFESSIONAL

Registered Professional Engineer in the State of Texas, Reg. No. 82737 (inactive)

FUNDED PROJECTS AND CONTRACTS

- R. Osegueda and R. Currey, "Paso de Norte Research and Business Development Complex – Phase III", The US Economic Development Agency, \$1.5 million, April 2011 – March 2014.
- C. Carrasco and R. Osegueda, "Solar Probe Dust Shielding Study," Johns Hopkins University Applied Physics Laboratory, August 1, 2004 through May 31, 2005, \$51,833.
- R. Osegueda, "Lockheed Martin Storefront," Lockheed Martin Space Operations, Oct. 2004 through September 2005, \$205,443.
- R. Gutierrez, E. Villa, R. Osegueda and H. Knaust, "Computer Science, Engineering and Math Scholarship Program," National Science Foundation, Jan. 2004 through December, 2008, \$400,000.
- B. Flores, T. Brady and R. Osegueda, "Model Institution of Excellence, Phase III," National Science Foundation, September 2003 through August 2006, \$2,500,000.
- E. Villa and R. Osegueda, "Administration of Summer faculty research program", Office on Naval Research, October 1, 2002, September 2007. \$250,000.
- C. Carrasco, R. Osegueda, "Modeling Hypervelocity Impact for kill Enhancement of Ballistic Missile Warhead," Missile Defense Agency, 1/01/01 through 12/31/03, \$260,000.
- R. A. Osegueda and T. Brady, "Computer Science, Engineering and Math Scholarships (CSEMS) Supplements," National Science Foundation, Aug. 1, 2000 through July 31, 2004, \$275,000.
- C.M. Ferregut and R. Osegueda, "Data Fusion Methodologies for Intelligent Nondestructive Evaluation, NASA Johnson Space Center, \$198,623 Dates: 10/99 to 5/03
- J. Eftis, C. Carrasco and R. Osegueda, "CONTOUR Dust Shield Design Verification," The Johns Hopkins University Applied Physics Laboratory, \$128,939, Dates: 2/00 to 9/02
- R. Osegueda, S. Nazarian and R. Hebner, "Performance Measurements to Support Electric Energy Storage", NIST \$86,500 Dates: 9/00 to 8/01
- R. Osegueda, S. Nazarian, C. Ferregut and V. Kreinovich, "LAMB Wave Scanning and Intelligent NDE for Wide Area Aircraft Inspections", \$300,000, Dates 9/00 to 8/03
- C. Ferregut, R. Osegueda, "Data Fusion Methodologies for Intelligent NDE Techniques," AFRL, (Wright Patterson AFB), Project #F33615-99-C-5211, \$198,623 from 10/99 to 4/02.
- J. Eftis, C. Carrasco, and R. Osegueda, "Constitutive-Microdamage Modeling of Target-Missile Damage Caused by Hypervelocity impact", Ballistic Missile Defense Organization, DoD, October 97- August 2000, \$289,000,
- R. Osegueda, C. Ferregut, S. Nazarian, J. Pierluissi, L. Murr, "FAST Center for Structural Integrity of Aerospace Systems" AFOSR, October 1995-September 2001, \$3,325,000,
- R. Osegueda and S. Nazarian, "Model Calibration with Local APT data and implementation for focus solutions to NAFTA Problems", TxDOT, \$90,000, March 2000, through February 2003.
- C. Ferregut and R. Osegueda, "Data Fusion Methodologies for Damage Monitoring of Aerospace Structures," NASA Johnson Space Center, Sept. 1999-Aug. 2002, Amount: \$162,000.
- R.A. Osegueda and O. Melchor-Lucero, "Automated Routing of Overweight Vehicles - Phase II" Texas Department of Transportation, Sept. 98 through Aug. 99, Amount \$30,000.
- R.A. Osegueda, C.M. Ferregut, S. Nazarian, and R. Arrowood, "Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft," Air Force Office of Scientific Research, June through Dec. 1997, Amount \$29,000.
- R.A. Osegueda and A. Garcia-Diaz, "Automated Routing of Overweight Vehicles - Phase II" Texas Department of Transportation, Sept. 97 through Aug. 98, Amount \$92,000, joint proposal with Texas Transportation Institute.
- R.A. Osegueda, "Transportation Information and Technology Exchange", New Mexico State Highways and Transportation

Department. November 96 through Aug. 97. Amount: \$30,000.

C.M. Ferregut and R.A. Osegueda, "Development of Analytical Tools to Process Modal Analysis Data for Damage Monitoring of Structures," NASA Johnson Space Center, Sept. 96 through Aug. 99, Amount for Year 1: \$53,848.

R.A. Osegueda, "Slope Stability and Slide Restoration Course," New Mexico State Highways and Transportation Department, June 1996 through Aug. 1996 amount: \$4,998.

R.A. Osegueda, A. Garcia, and S. Ashur "Automated Routing of Overweight Vehicles" Texas Department of Transportation, Sept. 95 through Aug. 97, Amount \$230,695, joint proposal with Texas Transportation Institute.

R.A. Osegueda, "US/Mexico East Border Transportation Technology Exchange Program", New Mexico State Highway and Transportation Department, Jan. 95 through Dec. 95, Amount: \$20,000.

R.A. Osegueda and C.M. Ferregut, "UTEP LTAP Subcenter", Texas Engineering Extension Service, Sept. 94, Aug. 95, Amount \$17,165.

C.M. Ferregut and R.A. Osegueda, "Development Monitoring of Structures using Vibrational Characteristics-based Neural Networks" NASA Johnson Space Center, Sept. 94 through Aug. 97, Amount \$204,249.

S. Nazarian, M. Picornell, H.S. Oey, C.M. Ferregut and R.A. Osegueda, "Student Training and Education Program", U.S. Department of Transportation, Aug. 94 through March 96, Amount: \$100,000.

R.A. Osegueda, "Local Low Volume Roads Manual," Texas Engineering Extension Service, Sept. 93 through Aug. 94, Amount \$20,910.

R.A. Osegueda and C.M. Ferregut, "UTEP Transportation Technology Transfer Subcenter", Texas Engineering Extension Service, Sept. 93 through Aug. 94, Amount: \$23,354.

J.H. Pierluissi and R.A. Osegueda, "Research on Dielectric Resonators", Jet Propulsion Laboratories, Sept. 93 through Aug. 94, Amount \$55,234.

C.M. Ferregut and R.A. Osegueda, "Reliability of Damaged Space Structures using vibration Measurements", NASA Johnson Space Center, Sept. 93 through Aug. 94, Amount: \$61,999.

J. Pierluissi and R.A. Osegueda, "Resonant frequencies of whispering gallery modes - continuation", NASA Jet Propulsion Laboratory. Period: Sept. 1992 -Aug. 1993. Amount: 66,000.

C.M. Ferregut and R.A. Osegueda, "Reliability of Space Structures Using Vibration Measurements - Further Studies," NASA - Johnson Space Center, period: Sept. 1992-Dec. 1993, Amount: \$51,000.

R.A. Osegueda, C.M. Ferregut and R. Pezo, "Spanish Language Transportation Training Program and U.T. El Paso Transportation Technology Transfer Subcenter Continuation Agreement". Texas Engineering Extension Service, The Texas A&M University System, period: Sept. 1992- Aug. 1993, Amount: \$53,400.

J.H. Pierluissi and R.A. Osegueda, "Determination of Resonant Frequencies of Whispering Gallery Resonators", Jet Propulsion Laboratory", Sept. 92 through Aug. 93, Amount: \$39,136.

R.A. Osegueda and C.M. Ferregut, "U.T. El Paso Transportation Technology Transfer Subcenter - Continuation Agreement." Texas Engineering Extension Service, The Texas A&M University System. Period: Sept. 1991- Aug. 1992. Amount: \$12,500.

J. Pierluissi and R.A. Osegueda, "Resonant frequencies of whispering gallery modes," NASA Jet Propulsion Laboratory, period: Sept. 1991 - Aug. 1992, Amount: 32,000.

R.A. Osegueda, and C.M. Ferregut, "Overweight Permit Rules Based on Bridge Stresses," Texas Department of Transportation, Sept. 1991 - Aug. 1992. Amount: \$18,800, funded.

C.D. Turner, R.A. Osegueda, W. Fisher and M. Pacillas, "Computer Center for Introduction to Engineering Course with a Design Component," National Science Foundation, Instrumentation and Laboratory Improvement Program. Period: May 1991 through Aug. 1993. Amount \$50,000.

R.A. Osegueda and C.M. Ferregut, "Overweight Permit Rules," Texas State Department of Highways and Public Transportation, September 1990 - August 1991. Amount: \$11,200.

C.M. Ferregut and R.A. Osegueda, "Reliability of Space Structures Using Vibration Measurements," NASA - Johnson Space Center, September 1990-December 1991. Amount: \$65,000.

R.A. Osegueda, "U.T. El Paso Transportation Technology Transfer Subcenter," Texas Engineering Extension Service, The Texas A&M University System. Sept. 1990- Aug. 1991. Amount \$8,800.

R.A. Osegueda, "ATP Supplemental Grant," Texas Higher Education Coordinating Board, Sept. 1990- Dec. 1991. Amount: \$20,500.

- R.A. Osegueda, "HP Computer System to drive Vibration Pattern Imager" Institute of Manufacturing and Materials Management, UTEP, (equipment grant), Sept. 1990-Aug. 1991. Amount: \$15,000.
- R.A. Osegueda and W.C. Johnson, "FE Simulation of Solid State Sensor Mechanical Stress Problem", Optoelectronics Division, Honeywell, Inc., (through the Manufacturing Consortium), Jan. 90 - May 91, Amount: \$21,500.
- R.A. Osegueda, W. L. Craver, "Probabilistic Damage Evaluation of Offshore Structures", Advanced Technology Program, Texas Higher Education Coordinating Board, Jan. 90 - Aug. 92. Amount: \$65,000.
- R.A. Osegueda, "Damage Evaluation of Structures from Changes of Complex Eigenvalues and Mode Shapes Using Interferometer Data," U.S. Army Research Office, set-aside program. Sep. 89 - Aug 92. Amount \$172,000.
- R.A. Osegueda, "Development of a Laboratory Facility for Damage Detection in Structures," The University Research Institute, UTEP, Jan. 1989 - Aug. 1989. Amount: \$2,475.
- "Measurement of resonant frequencies and mode shapes for damage detection in structures," the University Research Institute, the University of Texas at El Paso. Amount: \$5,000. Period: Jan. 1988 through Aug. 1988.
- "An evaluation of Bridge Sufficiency Ratings for the Greater El Paso Area," MacIntosh-Murchison Faculty Fellowship, College of Engineering, The University of Texas at El Paso. Amount: \$11,000. Period: May 1988 through Aug. 1989.

JOURNAL AND CONFERENCE PROCEEDINGS PUBLICATIONS

- J.R. Mares, R. A. Osegueda, N. Kaukuri, and V. Kreinovich, "Geometric approach to detecting and locating cracks in thin plates by Lamb wave reflection: case of moving transducer," in *Testing, Reliability, and Application of Micro- and Nano-Material Systems II*, Edited by N. Meyendorf, G.Y. Baaklini, B. Michel, Proc. of SPIE, Vol. 5394, pp. 385-398, 2004.
- B. Mulupuru, V. Kreinovich, and R. Osegueda, "Interval Approach to Phase Measurements Can Lead to Arbitrarily Complex Sets – A theorem and Ways Around It," *Numerical Algorithms*, Vol. 37, pp. 285-299, 2004.
- R. A. Osegueda, E. Roldan, V. Kreinovich and S. Nazarian, "Detection of cracks at rivet holes in thin plates using Lamb-wave scanning," in *Smart Nondestructive Evaluation and Health Monitoring of Structural and Biological Systems II*. Ed. by T. Kundu,, Proc. of SPIE, Vol. 5047, pp. 55-66 (2003).
- R. A. Osegueda, S. R. Seelam, B. Mulupuru, and V. Kreinovich, "Statistical and Dempster-Shafer Techniques in Testing Structural Integrity of Aerospace Structures", Proceedings of the SPIE/International Society for Optical Engineering, Vol. 5047, San Diego, CA, March 2-6, 2003.
- J. Eftis, C. Carrasco and R.A. Osegueda, "A Constitutive-Microdamage Model to Simulate Hypervelocity Projectile-Target Impact, Material Damage and Fracture," in-press *Int. Journal of Plasticity*, 2002.
- Keith Worden, Roberto Osegueda, Carlos Ferregut, Soheil Nazarian, Debra L. George, Mary J. George, Vladik Kreinovich, Olga Kosheleva and Sergio Cabrera, "Interval Methods in Non-Destructive Testing of Material Structures", *Reliable Computing*, 2001, Vol. 7, No. 4, pp. 341-352..
- J. Eftis, C. Carrasco and R.A. Osegueda, "Simulations of hypervelocity impact damage and fracture of aluminum targets using a constitutive-microdamage material model," *International Journal of Impact Engineering*, Volume 26, Issues 1-10, December 2001, Pages 157-168.
- R.A. Osegueda, C. J. Carrasco, M. Orozco, J. Eftis, E. Reynolds and T.G. Sholar, "CONTOUR Dust Shield Performance," *ASCE J. Aerospace Engineering*, Vol. 14/4, pp. 147-157, 2001.
- Eftis, C. Carrasco and R.A. Osegueda, "Modeling Shock Compression, Material Damage and Fracture Caused by Hypervelocity Impact," in Proc. of the 10th *International Congress of Fracture*, Honolulu, Hawaii, Dec. 2001.
- Francisco DeVilla, E. Roldan, C. Tirado, R. Mares, S. Nazarian and R. Osegueda, "Defect Detection in thin plates using So Lamb wave scanning," in *Proc. of NDE for Health Monitoring and Diagnostics*, SPIE Vol 4335, Paper 21, March 2001
- R. Osegueda, C. Ferregut, V. Kreinovich, S. Seetharami and H. Schulte, "Fuzz (Granular) Level of Quality, with Applications to Data Mining and to Structural Integrity of Aerospace Structures," *PeachFuzz 2000*, pp. 348-352, Atlanta, GA, July 2000.
- C. Ferregut, R.A. Osegueda, Y. Mendoza, V. Kreinovich and T.J. Ross, "Aircraft Integrity and Reliability," to appear in J. Booker, J. Paskinson, T.J. Ross Eds., *Combined Fuzzy Logic and Probability Applications*, SIAM, Philadelphia 2000.
- C. Carrasco, J. Eftis and R. Osegueda, "Constitutive modeling of spall fracture on 1100 Aluminum plates after hypervelocity impact," *Explomet 2000, Int. Conf. On Fundamental Issues and Applications of Shock Waves and High Strain-Rate Phenomena*, Albuquerque, NM, June 2000.
- Arturo Revilla, J.H. Pierluissi and R.A. Osegueda, "Predicting Probe Impedance Change in EC-NDI Using a 3D Finite Element Model," *QNDE Conference*, June, 2000.

- J. Eftis, C. Carrasco and R. Osegueda, "Modeling dynamic fracture following high shock compression," *Damage & Fracture Mechanics VI*, A. Selvadurai et al. Eds., pp 267-279, Wessex Institute of Technology Press, Southampton, UK, May 2000.
- J. Eftis, C. Carrasco and R. Osegueda, "Constitutive Model Simulation of High Shock Compression, Microdamage Evolution and Fracture Associated with Hypervelocity Impact," *Mesomechanics 2000*, Vol. 1, G.C. Sih, Ed., pp. 279-290, Tsinghua Univ. Press, China, June 2000.
- R. A. Osegueda, M. Macias, G. Andre, C. M. Ferregut and C. Carrasco, "Fusion of Modal Strain Energy for Health Monitoring of Aircraft Structures," in *Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III*, Ed. A. K., Mal, Proceedings of SPIE, Vol. 3994, Paper 3994-16, March 2000. **(Awarded best paper of Conference on NDE for Health Monitoring and Diagnostics Conference after peer review)**
- R.A. Osegueda, H. Lopez, L. Pereyra and C. M. Ferregut, "Localization of Damage using Fusion of Modal Strain Energy Differences," *Proc. of International Modal Analysis Conference XVIII*, SEM, Vol. I, San Antonio, TX, Feb. 7-10, 2000, pp. 695-701.
- L. R. Pereyra, R. A. Osegueda, C. Carrasco and C. Ferregut, "Detection of Damage in a Stiffened Plate from Fusion of Modal Strain Energy Differences," *Proc. of International Modal Analysis Conference XVIII*, SEM, Vol. II, San Antonio, TX, Feb. 7-10, 2000, pp. 1556-1562.
- G. V. Garcia and R. A. Osegueda, "Combining Damage Index Method and ARMA Method to Improve Damage Detection," *Proc. of International Modal Analysis Conference XVIII*, SEM, Vol. I, San Antonio, TX, Feb. 7-10, 2000, pp. 668-673.
- R. A. Osegueda, G. Andre, C. Carrasco, C. M. Ferregut and L. Pereyra, "Effects of Mode Pairing in Strain Energy-Based Damage Detection Methods Applied to an Aerospace Structure," *Proc. of International Modal Analysis Conference XVIII*, SEM, Vol. II, San Antonio, TX, Feb. 7-10, 2000, pp. 1218-1224.
- Eftis J., Carrasco C. and Osegueda R., "Constitutive Model Simulation of High Shock Compression, Micro-Damage Evolution and Fracture with Hypervelocity Impact", to be published in the proceedings of *Mechanics 2000 International Conference*, June 13-16, 2000, Xi'an, China.
- Eftis J., Carrasco C. and Osegueda R., "Elastic-Viscoplastic-Microdamage Modeling to Simulate Hypervelocity Projectile-Target Impact and Damage", in *Proc. of IMPLAST 2000*, The 7th International Symposium on Structural Failure and Plasticity, October 4-6, 2000, Melbourne, Australia
- Osegueda, R., Mendoza, Y., Kosheleva, O., and Kreinovich, V., "Multi-Resolution Methods in Non-Destructive Testing of Aerospace Structures and in Medicine", in *Proc. of 14th IEEE International Symposium on Intelligent Control/Intelligent Systems and Semiotics ISIC/ISAS'99*, Cambridge, MA, September 15-17, 1999, pp. 207-212.
- R.A. Osegueda, A. Garcia-Diaz, S. Ashur, O. Melchor, S.-H. Chang, C. Carrasco, A. Kuyumcu, "GIS-Based Network Routing Procedures for Overweight Oversized Vehicles," *Journal of Transportation Engineering*, Vol. 125, No. 4, July/August 1999, pp. 324-331.
- G. Andre, R.A. Osegueda, C.M. Ferregut, C. Carrasco, L. Pereyra UTEP, G. James and M. Grygier, "Comparison of Strain Energy-Based Vibrational NDE Methods Applied to a Complex Aerospace Structure", in *Nondestructive Characterization IX*, Ed. R. Green, American Institute of Physics, AIP Conf. Proceedings 497, Sydney, Australia, June/July 1999, pp 561-568.
- Pereyra, L.R., Osegueda, R.A., Carrasco, C. and Ferregut, C., "Damage Detection in a Stiffened-Plate Using Modal Strain Energy Differences", in *Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III*, Ed. A. K., Mal, Proceedings of SPIE, Vol. 3586, Paper 3586-29, pp 211-222, March 1999.
- Osegueda, R.A., Revilla, A., Pereyra, L., and Moguel, O., "Fusion of Modal Strain Energy Differences for Localization of Damage," in *Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III*, Ed. A. K., Mal, Proceedings of SPIE, Vol. 3586, Paper 3586-28, pp. 189-199, March 1999.
- Garcia, G.V., Osegueda, R. and Meza, D., "Damage Detection using ARMA Model Coefficients," *In Smart Systems for Bridges, Structures, and Highways*, Ed. S.C. Liu, SPIE, Vol. 3671, Paper 3671-30, March 1999.
- Garcia, G.V., Osegueda, R. and Meza, D., "Damage Detection Comparison between Damage Index Method and ARMA Method", in *Proc. of 17th International Modal Analysis Conference*, IMAC XVII, SEM, Orlando, FL. February 8-11, 1999.
- Pereyra, L.R., Osegueda, R.A., Carrasco, C., Ferregut, C. M., "Structural Defects Detection Using Low Frequency Modal Testing with a Laser Vibrometer", *In Proc. ASNT Fall 1998 Conference*, The American Society of Nondestructive Testing, Columbus, OH, Oct. 1998, pp 63-66.

- Alvarez, W., Ferregut, C. and Osegueda, R., "Deteccion y Clasificacion de Danos en Estructuras Sujetas a Cargas Estaticas Usando Redes Neuronales Artificiales," *Memorias del IV Congreso Annual de la Sociedad Mexicana de Ingenieros Mecanicos*, October 21-23, Cd. Juarez, Chihuahua, Mexico, 1998, pp. 259-266.
- Ashur, S., Melchor-Lucero, O., Osegueda, R., Carrasco, C., Garcia-Diaz, A., and Chang, S-H., "A GIS Approach to Manage Routing of Oversize and Overweight Vehicles in Texas," in *Proc. of First Int. Conf. on New Information Technologies for Decision Making in Civil Engineering*, Montreal, Canada, Oct. 11-13, 1998, pp. 613-624.
- Andre, G.C., Carrasco C.J., Osegueda, R.A., Ferregut, C. M., James III, G.H. and Grygier, M., "Comparison of Accelerometer and Laser Modal Tests of a Vertical Stabilizer Assembly," *SPACE 98*, ASCE, April 1998, pp.132-139.
- Worden, K., Osegueda, R., Ferregut, C., Nazarian, S., George, D.L., George, M.J., Kreinovich, V., Kosheleva, O., and Cabrera, S., "Interval Methods in Non-Destructive Testing of Aerospace Structures and in Mammography", *International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98)*, April 20-23, Nanjing, China, Abstracts, 1998, pp. 152-154.
- Bar-Cohen, Y., Marzell, N., Osegueda, R and Ferregut, C. "Smart Sensor System for NDE Corrosion in Aging Aircraft," In *Proc. ASNT'98 Spring Conference*, Joint with 9th Asia-Pacific Conference on NDT, and 7th Annual Research Symposium, Anaheim, CA, March 24-26, 1998.
- Garcia, G.V., Osegueda, R. and Meza, D., "Comparison of the Damage Detection Results Utilizing an ARMA Model and an FRF Model to Extract the Modal Parameters." *In Smart Structures and Materials 1998: Smart Systems for Bridges*, Ed. S.C. Liu, SPIE Proceedings, Vol. 3325, ISBN: 0-8194-2769-1, San Diego, CA, March 1-5, 1998, Paper 3325-30.
- Kosheleva, O., Cabrera, S., Osegueda, R., Nazarian, S., George, D.L., George, M.J., Kreinovich, V., and Worden, K., "Case Study of Non-Linear Inverse Problems: Mammography and Non-destructive Evaluation", in *Bayesian Inference for Inverse Problems*, Ed. Ali Mohamad-Djafari, Proc. of SPIE, Vol. 3459, Paper #: 3459-14, San Diego, CA, March 1998, pp.128-135.
- Ferregut, C.M., Osegueda, R.A., and Nuñez, A., (Editors), *Intelligent NDE Sciences for Aging and Futuristic Aircraft*, FAST Center for Structural Integrity of Aerospace Systems, The University of Texas at El Paso, ISBN: 97404-279-8, El Paso, Texas, January 1998.
- Osegueda, R.A., Ferregut, C. M., George, M.J., Gutierrez, J.M., and Kreinovich, V., "Computational Geometry and Artificial Neural Networks: A Hybrid Approach to Optimal Sensor Placement for Aerospace NDE", in *Intelligent NDE Sciences for Aging and Futuristic Aircraft*, Eds. Ferregut, Osegueda and Nuñez, FAST Center for Structural Integrity of Aerospace Systems, The University of Texas at El Paso, ISBN: 97404-279-8, El Paso, Texas, January 1998, pp. 59-71.
- Carrasco, C., Osegueda, R., and Ferregut, C. "Localizacion y Cuantificacion de Danos en una Estructura Tridimensional Usando la Energia de Deformacion Modal," *Memoria del XI Congreso Nacional de Ingenieria Sismica*, Volume II, Veracruz, Mexico, November 26-29, 1997, pp. 851-860. (In Spanish)
- Claus, R.O., Osegueda, R.A., Bar-Cohen, Y. and Castro, M., "Laser Induced Plate Waves Using Waveform Shaping Optics and Strain Sensing by Fiber Optics Cross-sensitivity Effect", *Proceedings of the ASNT Fall Conference*, ISBN: 1-57117-068-5, Pitt., PA, Oct. 20-23, 1997, pp. 241-243.
- Osegueda, R., Ferregut, C., George, M.J., Gutierrez, J.M. and Kreinovich, V., "Non-Equilibrium Thermodynamics Explains Semiotic Shapes: Applications to Astronomy and to Non-Destructive Testing of Aerospace Systems," *Proceedings of the 1997 International Conference on Intelligent Systems and Semiotics*, Gaithersburg, Maryland, September 22-25, (A.M. Meystel, Ed.), NIST Special Publication 918, 1997, pp. 378-382.
- Osegueda, R., Ferregut, C., George, M.J., Gutierrez, J.M. and Kreinovich, V., "Maximum Entropy Approach to Optimal Sensor Placement for Aerospace Non-Destructive Testing," in *Maximum Entropy and Bayesian Methods*, Eds. G. Erikson and J. T. Rychert, Kluwer Academic Publishers, Dordrecht, 1997, pp. 277-289.
- Keith Worden, Roberto Osegueda, Carlos Ferregut, Soheil Nazarian, Eulalio Rodriguez, Debra L. George, Mary J. George, Vladik Kreinovich, Olga Kosheleva, and Sergio Cabrera, "Interval Approach to Non-Destructive Testing of Aerospace Structures and to Mammography", in: Goetz Alefeld and Raul A. Trejo (eds.), *Interval Computations and its Applications to Reasoning Under Uncertainty, Knowledge Representation, and Control Theory*. Proceedings of MEXICON'98, Workshop on Interval Computations, 4th World Congress on Expert Systems, Mexico City, Mexico, 1998.
- Osegueda, R.A., Carrasco, C. J. and Meza, Jr., R., "A Modal Strain Energy Distribution Method to Localize and Quantify Damage," *15th International Modal Analysis Conference, IMAC XV*, Society of Experimental Mechanics, Orlando, Florida, pp. 1298-1304, Feb. 3-6, 1997.

- Carrasco, C.J., Osegueda, R.A., Ferregut, C. M. and Grygier, M., "Damage Localization in a Space Truss Model Using Modal Strain Energy Distribution," *15th International Modal Analysis Conference*, IMAC XV, Society of Experimental Mechanics, Orlando, Florida, Vol. II, pp. 1786-1792, Feb. 3-6, 1997.
- Meza, Jr. R., Carrasco, C.J., Osegueda, R.A., James, G., and Robinson, N., "Damage Detection in a DC-9 Fuselage Using Laser Doppler Velocimetry," *15th International Modal Analysis Conference*, IMAC XV, Soc. of Experimental Mechanics, Orlando, FL, Vol. II, pp. 1779, 1785, Feb. 3-6, 1997.
- Carrasco, C. J., Osegueda, R.A., Ferregut, C.M. and Grygier, M., "Localization and Quantification of Damage in a Space Truss Model Using Modal Strain Energy," *Smart Structures and Materials 1997: Smart Systems for Bridges Structures, and Highways*, San Diego, March 3-6, 1997, pp. 181-192.
- Meza, Jr. R., Carrasco, C.J., Osegueda, R.A., James, G. and Robinson, N., "Damage Evaluation in a DC-9 Fuselage Using Laser Doppler Velocimetry Measurements," *Smart Structures and Materials 1997: Smart Systems for Bridges Structures, and Highways*, San Diego, CA, March 3-6, 1997.
- Perez, L., Ferregut, C.M., Osegueda, R.A., Paez, T., Barney, P., and Hunter, N., "Statistical Validation of a Plate Finite Element Model for Damage Detection," accepted for the *SPIE's 1997 Smart Structures and Materials Symposium*, San Diego, CA, March 3-6, 1997.
- Ortiz, J., Ferregut, C. and Osegueda, R., "Damage Detection from Vibrational Measurements Using NN Technology," Chapter IV, *Artificial Neural Networks for Civil Engineers: Fundamentals and Applications*, (N.Kartam, I.Flood & J.Garret, Eds.), ASCE, 1997, pp. 65-91.
- Gutierrez, J.M., Ferregut, C., and Osegueda, R.A., "A Comparative Study on Two Types of Mode Sensitive Neural Networks for Damage Assessment," *Nondestructive Evaluation of Utilities and Pipelines*, M. Prager and R.M. Tilley (Eds.), Proc. SPIE 2947, 1996, pp. 224-235.
- Ferregut, C., Osegueda, R., Gutierrez, J. and Ortiz, J. "Deteccion y Clasificacion de Danos Estructurales Usando Redes Neuronales," *Memorias del X Congreso de Ingenieria Estructural*, Merida, Yucatan, November 16-19, 1996, pp. 268-276 (in Spanish).
- Carrasco, C., Osegueda, R.A., Ferregut, C.M., Harms, B., Meza, D., and Grygier, M., "Comprehensive Modal Tests of a Space Truss Model for Damage Assessment," in *Proc. Fifth International Conference on Space '96*, June 1-6, 1996, Albuquerque, NM, pp. 1141-1147.
- Osegueda, R.A. and Noel, J.S., "Routing Overweight Vehicles Minimizing Bridge Stresses", in *Proc. CoHemis - NSF Conference, Transportation Research in the Americas*, July 17-19, 1995, Fajardo, Puerto Rico, pp 80-88.
- Ferregut, C.M., Osegueda, R.A. and Stephenson, T., "Probabilistic Detectibility of Structural Damage Using Frequency Sensitivity Methods," in *Smart Structures and Materials: Smart Systems for Bridges, Structures and Highways*; L.K. Matthews, Editor, SPIE Vol. 2446, 1995, pp. 95-105.
- Ferregut, C.M., Osegueda, R.A., and Ortiz, J., "Artificial Neural Networks for Structural Damage Detection and Classification," in *Smart Structures and Materials: Smart Systems for Bridges, Structures and Highways*: L.K. Matthews, Editor, SPIE Vol. 2446, 1995, pp. 68-80.
- Lin, Y.C., Nemir, D.C., and Osegueda, R.A., "Structural Modal Content Control using Dynamic Stiffness -- Experimental Work," in *Smart Structures and Integrated Systems*, SPIE Vol. 2443, San Diego, CA, Feb 1995, pp. 217-229.
- Santiago, D.G.; Wang, R.T.; Dick, G.J.; Osegueda, R.A.; Pierluissi, J.H.; Gil, L.M.; Revilla, A.; Villalva, G.J.; "Experimental test and application of a 2-D finite element calculation for whispering gallery sapphire resonators," in *Frequency Control Symposium*, 1994. 48th., Proceedings of the 1994 IEEE International, 482 - 485, 1-3 June 1994
- Revilla, A., Osegueda, R.A., Pierluissi, J.H., Villalva, G.J., and Dick, G.J., "2D Finite Element Program to Compute Resonant Frequencies and 3D Visualization of Electromagnetic Modes in Cylindrical Resonators," in *Proc. of 1994 IEEE Int. Freq. Control Symp.*, June 1-3, 1994, Boston, MA, pp. 493-499.
- Osegueda, R.A., et al. "Azimuthally Dependent Finite Element Solution to the Cylindrical Resonator," in *Proc. of 1994 Applied Computational Electromagnetic Society Meeting*, ACES, March 21-16, 1994, Monterrey, CA, pp. 159-170.
- Nemir, D.C., Lin, Y.C., and Osegueda, R.A., "Semi-Active Motion Control Using Variable Stiffness," *Journal of Structural Engineering*. Vol. 120, No. 4, April 1994, pp 1291-1306.
- Lin, Y.C., Nemir, D.C., and Osegueda, R.A., "Dynamic Adaptive Stiffness Control -- Response to Random Excitations," In *Proc. 3rd Int. Conf. on Adaptive Structures*, Ed. B.K. Wada, M. Natori and E. Breitbach, Technomic Pub. Co., 1993, pp. 277-289.
- Osegueda, R.A., DSouza, P.D., and Qiang, Y.J., "Damage Evaluation of Offshore Structures Using Frequency Shifts," In *Proc. of the 1992 ASME PVP Conference*, ASME, New Orleans, June 22-25, 1992, pp. 31-37.

- Osegueda, R.A., and DSouza, P.D., "Damage Evaluation of an Offshore Structure Model Using Vibration Measurements," *In Proc. of 2nd International Symposium of Offshore and Polar Engineering*, International Society of Offshore and Polar Engineering, San Francisco, California, June 14-19, 1992, pp. 550-557.
- Osegueda, R.A., and Nemir, D.C., "Structural Motion Control Using Modal Energy Transference," *in Proc. of the 30th IEEE Conference on Decision and Control*, IEEE Control Systems Society, Vol. 1, Brighton, England, Dec. 1991, pp. 512-514.
- Osegueda, R.A., Nemir, D.C. and Lin, Y.J., "On-line Adaptive Stiffness Control to Tailor Modal Energy Content in Structures", *in Active Materials and Adaptive Structures, Proc. of the ADPA/AIAA/ASME/SPIE Conf. on Active Materials and Adaptive Structures*, Ed. G.J. Knowles, Alexandria, VA., Nov. 5-8, 1991, pp. 347-354.
- Osegueda, R.A., Erasala, S. and Qiang, Y., "Damage Evaluation of Offshore Structures Using Vibration Measurements - Overview and Experimentation", *in Proc. of the 1991 MAES National Engineering Symposium*, Houston, Pub. by NASA Johnson Space Center, Texas, April 1991, pp. 134-146.
- Stephenson, T.W., Candelaria, A.M., Ferregut, C.M. and Osegueda R.A., "Towards the Reliability Assessment of Damaged Structures From Vibration Measurements: Uncertainty Analysis Models," *in Proc. of the 1991 MAES National Engineering Symposium*, Houston, Pub. by NASA Johnson Space Center, Texas, April 1991, pp. 234-248.
- Osegueda, R.A., Vila, M., and Mahajan, S.K., "A Modal Analysis Method for Locating Stiffness and Mass Changes in Structures," *Developments in Theoretical and Applied Mechanics*, Eds. S.V. Hanagud, M.P. Kamat and C.E. Ueng, Vol. XV, Georgia Institute of Technology, 1990, pp. 333-340.
- Stubbs, N.S. and Osegueda, R.A., "Global Damage Detection in Solids - Experimental Verification," *International Journal of Analytical and Experimental Modal Analysis*, Vol. 5, No. 2, April 1990, pp. 81-97.
- Stubbs, N.S., and Osegueda, R.A., "Global Non-destructive Damage Evaluation in Solids," *International Journal of Analytical and Experimental Modal Analysis*, Vol. 5, No. 2, April 1990, pp. 67-80.
- Osegueda, R.A., and Noel, J.S., "Repetitive Load Test of a Composite Precast Decked Bridge Model," *Transportation Research Record No. 1268*, Transportation Research Board, Washington, D.C., 1990, pp. 138-147.
- Stubbs, N.S., Broome, T.H., and Osegueda, R.A., "Nondestructive Construction Error Detection in Large Space Structures," *AIAA Journal*, American Institute of Aeronautics and Astronautics, Vol. 28, No. 1, Jan. 1990, pp. 146-152.
- Osegueda, R.A., and Rao, N., "Modal Vibration Animation of Three-Dimensional Framed Structures Using Microcomputers", *in Proc. of 7th National Conference of Micro Computers in Civil Engineering*, University of Central Florida and American Society of Civil Engineers, Orlando, Florida, October 12-14, 1989, pp. 33-37.
- Osegueda, R.A., Guerrero, G.E., and Picornell, M., "Load Capacity Predictions of Anchors in Cohesionless Soils by Parameter Identification from Finite Element Models," *in Proc. of 7th National Conference of Microcomputers in Civil Engineering*, University of Central Florida and American Society of Civil Engineers, Orlando, Florida, October 12-14, 1989, pp. 47-51.
- Osegueda, R.A., Noel, J.S., and Panak, J.J., "Verification of Composite Behavior of a Precast Decked Simple Span," *Transportation Research Record 1211 - Concrete Bridge Design and Maintenance: Steel Corrosion in Concrete*, Transportation Research Board, Washington, D.C., 1989, pp. 72-83.
- Stubbs, N.S., Broome, T.H., and Osegueda, R.A., "Nondestructive Construction Error Detection in Large Space Structures," *in AIAA SDM Issues of The International Space Station*, American Institute of Aeronautics and Astronautics, Williamsburg, Virginia, April 1988, pp. 47-55.
- Stubbs, N. S., and Osegueda, R. A., "Global Nondestructive Damage Evaluation of Offshore Platforms Using Modal Analysis," *in Proc. of the Sixth International Offshore Mechanics and Arctic Engineering Symposium*, Vol. II, Ed. Chung, J. S., et al, ASME, New York, New York, 1987, pp. 517-524.
- Stubbs, N.S., and Osegueda, R.A., "Damage Detection in Periodic Structures," *Damage Mechanics and Continuum Modeling*, American Society of Civil Engineers, October 1985, pp. 113-128.
- Biswas, M., Osegueda, R. A., and Noel, J. S., "Scale Model Tests for Full-Depth Precast Concrete Panel-Decked Composite Bridge Span," *Transportation Research Record 950*, Vol. 1, Transportation Research Board, Washington, D.C., 1984, pp. 163-173.

PATENT

D.C. Nemir and R.A. Osegueda, "Method and Apparatus for Damping Vibrations," U.S. Patent, Serial No. 07/643,926

ABSTRACTS

- Osegueda, R.A., Nemir, D.C. and Lin, Y.J., "On-line Adaptive Stiffness Control to Tailor Modal Energy Content in Structures", Abstracts of the ADPA/AIAA/ ASME/SPIE Conf. on Active Materials and Adaptive Structures, Ed. G.J. Knowles, Alexandria, VA. Nov. 5-8, 1991, pp. 347-354.
- Osegueda, R.A., Erasala, S. and Qiang, Y., "Experimentation Towards Damage Evaluation of Offshore Structures Using Vibration Measurements," Texas Civil Engineer, Texas Section ASCE, Aug/Sept 1991, pp. 34. (Abstract)
- Osegueda, R.A., Carrasco, C., Sanchez, A. and Siddappa, N. "Effects of Structural Damage on the Vibrational Mode Shapes Measured with Laser Interferometry", Texas Civil Engineer, Texas Section ASCE, Aug/Sept 1991, pp. 35. (Abstract)
- Osegueda, R.A., Hernandez, G., and Picornell, M., "Three-Dimensional Finite Element Analysis of Horizontal Plate Anchors", Texas Civil Engineer, Texas Section ASCE, Aug/Sept 1990.
- Rodriguez, R.M., Osegueda, R.A., Guerrero, G.E., and Picornell, M., "Effects of Boundary Conditions of the Pull-out Capacity of Helical Anchors", Texas Civil Engineer, Texas Section ASCE, Aug/Sept. 1990

RESEARCH REPORTS

- Roberto Osegueda, "Lamb Wave Scanning for Wide Area Inspections," Final Report, Grant No. F49620-00-1-0365, FAST Center for Structural Integrity of Aerospace Systems, The University of Texas at El Paso, El Paso, Texas 79968. Submitted to AFOSR, November 2004.
- Manuel Celaya, Roberto A. Osegueda, Soheil Nazarian and Robert E. Hebner, "Nondestructive Examination of Composite Rings and Cylinders for Kinetic Energy Storage Flywheels," FAST Center for Structural Integrity of Aerospace Systems, The University of Texas at El Paso, El Paso, Texas 79968. Submitted to NIST, September 2002.
- R. A. Osegueda and C. M. Ferregut, "Research and Educational Activities at the FAST Center for Structural Integrity of Aerospace Systems," Final Report, Grant No. F49620-95-1-0518, FAST Center for Structural Integrity of Aerospace Systems, the University of Texas at El Paso, Sept. 2002.
- R. A. Osegueda and C. M. Ferregut, "Large Area Inspection of Aircraft Structures Using Vibrational Nondestructive Evaluation Methods," Final Report, Project 3, Grant No. F49620-95-1-0518, FAST Center for Structural Integrity of Aerospace Systems, the University of Texas at El Paso, Sept. 2002.
- Cesar Carrasco, Miguel Orozco, John Eftis, & Roberto Osegueda, "CONTOUR Dust Shield Performance Verification," Report Submitted to the Johns Hopkins University Applied Physics Laboratory, December 2000.
- Osegueda, R.A., Melchor-Lucero, Carrasco, C.J., Garcia-Diaz, A. Chang, S.-H., "Improvements on Automated Routing of Overweight/Oversize Vehicles", Research Report 1823-1, TX 98 1823-1, The University of Texas at El Paso, El Paso, TX, November, 1998.
- Osegueda, R.A., Melchor-Lucero, O., Carrasco, C.J., Ashur, S., and Garcia-Diaz, A., "Automated Route Evaluation of Overweight/Oversize Vehicles", Research Report 1482-2F, TX 97 1482-2F, The University of Texas at El Paso, El Paso, TX, October, 1998.
- Osegueda, R.A., Ashur, S., Melchor-Lucero, O., Carrasco, C.J., and Garcia-Diaz, A. "Development of Automated Routing of Overweight/Oversize Vehicles System for Houston District", Research Report 1482-1, TX 96 1482-1, The University of Texas at El Paso, El Paso, TX, October, 1996.
- Meza, Jr., R., Osegueda, R.A., Carrasco, C.J. and James, G. , "Modal Tests of Composite Honeycomb Panels Using Laser Doppler Velocimetry for Damage Assessment," Report FAST 96-02, FAST Center for Structural Integrity of Aerospace Systems, The University of Texas at El Paso, El Paso, Texas, September, 1996.
- Carrasco, C., Osegueda, R.A., and Ferregut, C.M., "Modal Tests of a Space Truss Model and Damage Localization Using Modal Strain Energy", Report FAST 96-01, The University of Texas at El Paso, July 1996.
- Osegueda, R.A., Ferregut, C.M., Nazarian, S., Murr, L.E., Arrowood, R., Fisher, W.W., Pierluissi, J.H., and Nemir, D.C., "Report of Initial Activities FAST Center for Structural Integrity of Aerospace Systems", Report FAST-95-01, The University of Texas at El Paso, December 1995.
- Osegueda, R.A. and Noel, J.S., "Heavy Load Vehicle Routing using Highway Network Models and Bridge Load Formula", Research Report 1266-3, FHWA-TX-1266-3, The University of Texas at El Paso, July 1993.
- Osegueda, R.A., Gourabathina, S., and Noel, J.S., "Toward the Implementation of an Overload Permit Formula Using Network Models and BRINSAP," Research Report 1266-2, Study No. 2/10/5-91-1266, Civil Engineering Department,

- The University of Texas at El Paso, Aug. 1992.
- Osegueda, R.A., Talluri, S.R., and Johnson, W.C., "Stresses of a Silicon Chip Mounted on a Copper Lead Frame with Offsets," research report submitted to Honeywell Optoelectronics, Manufacturing Engineering Consortium, The University of Texas at El Paso, July, 1991.
- Osegueda, R.A., Talluri, S.R., and Johnson, W.C., "Stresses of a Perfectly Mounted Chip on a Copper Lead Frame," research report submitted to Honeywell Optoelectronics, Manufacturing Engineering Consortium, The University of Texas at El Paso, Feb. 1991.
- Osegueda, R.A., and Johnson, W.C., "Unmounted Chip Stresses of Hall Elements" research report submitted to Honeywell Optoelectronics, manufacturing Engineering Consortium, The University of Texas at El Paso, July. 1990.
- Osegueda, R.A., Pena, D., and Johnson, W.C., "Global Processing and Test Induced Stresses of Hall Elements Using Rectangular Meshes", research report submitted to Honeywell Optoelectronics, Civil Engineering Department, The University of Texas at El Paso, July 1990.
- Osegueda, R.A., Pena, D., and Johnson, W.C., "Global Processing and Test Induced Stresses of Hall Elements", research report submitted to Honeywell Optoelectronics, Civil Engineering Department, The University of Texas at El Paso, May 1990.
- Osegueda, R.A., "Measurement of Resonant Frequencies and Mode Shapes for Damage Detection in Structures," URI Report, The University of Texas at El Paso, October 1988.
- Osegueda, R.A., and Noel, J.S., "Rapid Bridge Deck Replacement: A Field Demonstration and Load Test," Report No. 324-5F, Texas Transportation Institute, Texas A&M University, College Station, Texas, May 1988.
- Stubbs, N.S., Broome, T.H., and Osegueda, R.A., "Nondestructive Construction Error Detection in Large Space Structures," Technical No. TR-87-104, Mechanics of Materials Center, Texas A&M University, College Station Texas, Nov. 1987.
- Stubbs, N.S. and Osegueda, R.A., "Damage Evaluation in Solids-Experimental Verification," Technical Report No. TR-87-103, Mechanics of Materials Center, Texas A&M University, College Station, Texas, Nov. 1987.
- Osegueda, R. A., and Noel, J. S., "Positive Moment Tests for Precast Concrete Panel-Decked Composite Bridges," Research Report 324-1, Study No. 2-5-82-324, Texas Transportation Institute, Texas A&M University, College Station, Texas, Sept. 1987.
- Bonilla, F. E., James, R. W., Osegueda, R. A., and Noel, J. S., "Composite Action of Precast Panel Bridge Decks in Negative Moment Regions", Research Report 324-2, Study No. 2-5-82-324, Texas Transportation Institute, Texas A & M University, College Station, Texas, Sept. 1987.
- Stubbs, N.S., Osegueda, R.A., Harper, W.W., and Claycamp, C., "Automatic Monitoring of Evolving Structures", Technical Report No. TR-87-102, Mechanics of Materials Center, Texas A&M University, College Station, Texas, Sept. 1987.
- Stubbs, N.S., and Osegueda, R.A., "Global Nondestructive Damage Evaluation in Solids", Technical Report No. TR-87-101, Mechanics of Materials Center, Texas A & M University, College Station, Texas, July 1987.
- Stubbs, N.S., and Osegueda, R.A., "Nondestructive Damage Detection in Jacket Platforms using Modal Parameters", Technical Report No. TR-87-100, Mechanics of Materials Center, Texas A & M University, College Station, Texas, May 1987.
- Osegueda, R. A., and Noel, J. S., "Repetitive Loading Tests of Precast Panel Bridge Decks," Research Report 324-3, Study No. 2-5-82-324, Texas Transportation Institute, Texas A&M University, College Station, Texas, May 1986.

PRESENTATIONS

- FAST Center Review presentation, US Air Force Office of Scientific Research, Arlington, VA, July 2001.
- "Defect Detection in thin plates using So Lamb wave scanning," in Proc. of NDE for Health Monitoring and Diagnostics, SPIE Vol 4335, Paper 21, March 2001 (With Francisco DeVilla, E. Roldan, C. Tirado, R. Mares, S. Nazarian).
- "CONTOUR Dust Shield Critical Design Review," presented in the Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, to defend design of CONTOUR's dust shield, Dec. 14, 2000
- "Fusion of Ultrasonic Waveform Scan Data and Multiple-Sensor Fusion for Composite Materials," AeroMat 2000, Bellevue, Washington, June 27, 2000 (with C. Ferregut)
- "Predicting Probe Impedance Change in EC-NDI Using a 3D Finite Element Model," QNDE Conference, June, 2000. (With A. Revilla and J.H. Pierluissi).

- C. Carrasco, J. Eftis, and R. Osegueda, "Constitutive Modeling Of Spall-Fracture On 1100 Aluminum After Hypervelocity Impact," EXPLOMET 2000 International Conference on Fundamental Issues and Applications of Shock-Wave and High-Strain-Rate Phenomena, Albuquerque, NM, June 19-22, 2000.
- "Oversize/Overweight Vehicle Routing GIS," ASCE Texas Section Fall 2000 Meeting, October 4-7, 2000 El Paso, TX (With Octavio Melchor-Lucero)
- R.A. Osegueda, G.C. Andre, C.M. Ferregut, C.J. Carrasco, L.R. Pereyra and H. Lopez, "Fusion of Modal Strain Energy for Health Monitoring of Aircraft Structures" SPIE Smart Structures and Materials, Newport Beach, CA, March 5-9, 2000.
- R.A. Osegueda, H. Lopez, L. Pereyra and C. M. Ferregut, "Localization of Damage using Fusion of Modal Strain Energy Differences," presented in IMAC 2000, Feb. 2000.
- L. R. Pereyra, R. A. Osegueda, C. Carrasco and C. Ferregut, " Detection of Damage in a Stiffened Plate from Fusion of Modal Strain Energy Differences," presented IMAC 2000, Feb. 2000.
- R. A. Osegueda, G. Andre, C. Carrasco, C. M. Ferregut and L. Pereyra , "Effects of Mode Pairing in Strain Energy-Based Damage Detection Methods Applied to an Aerospace Structure," presented in IMAC 2000, Feb. 2000.
- H. Pardo, C. Ferregut and R.A. Osegueda, "Reliability-Based Corrosion Assessment Methodology" 1999 International Mechanical Engineering and Exposition, Nashville, TN, November 17, 1999.
- C. Tirado, S. Nazarian and R.A. Osegueda, "Material Characterization and Damage Detection Using Spectral Analysis of Plate Waves", 1999 International Mechanical Engineering and Exposition, Nashville, TN, November 17, 1999.
- "Structural Integrity research activities at UTEP", presented in the Applied Physics Laboratory, Laurel, Baltimore, July 27, 1999.
- Spring 1999 meeting of the New Mexico Chapter of ASCE, April 16, 1999.
- "Comparison of Strain Energy-Based Vibrational NDE Methods Applied to a Complex Aerospace Structure", The Ninth International Symposium on Nondestructive Characterization of Materials, Sydney, Australia, June 28-July 2, 1999
- "Structural Integrity activities at the FAST Center", presented in the Spring 1999 meeting of the New Mexico Chapter of ASCE, April 16, 1999.
- "Damage Detection in a Stiffened-Plate Using Modal Strain Energy Differences", SPIE 1999 Conf. on Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III, March 3-5, 1999, Newport Beach, California (with Pereyra, L.R., Carrasco, C. and Ferregut, C.).
- "Fusion of Modal Strain Energy Differences for Localization of Damage," SPIE 1999 Conf. on Nondestructive Evaluation of Aging Aircraft, Airports and Aerospace Hardware III, March 3-5, 1999, Newport Beach, California, (with Revilla, A., Pereyra, L., and Moguel, O.)
- "Damage Detection using ARMA Model Coefficients," SPIE 1999 Conf. on Smart Systems for Bridges, Structures, and Highways, March 3-5, 1999, Newport Beach, California, (with Garcia, G.)
- "Damage Detection Comparison between Damage Index Method and ARMA Method", 17th International Modal Analysis Conference, Orlando, FL. February 8-11, 1999 (with Garcia, G.V. and Meza, D.).
- "Structural Defects Detection Using Low Frequency Modal Testing with a Laser Vibrometer", ASNT Fall 1998 Conference, Nashville, Tennessee, Oct. 1998, (with Pereyra, L.R., Carrasco, C., and Ferregut, C.M.)
- "A GIS Approach to Manage Routing of Oversize and Overweight Vehicles in Texas," First Int. Conf. on New Information Technologies for Decision Making in Civil Engineering, Montreal, Canada, Oct. 11-13, 1998, (with Ashur, S., Melchor-Lucero, O., Carrasco, C., Garcia-Diaz, A., and Chang, S-H.)
- "Comparison of Accelerometer and Laser Modal Tests of a Vertical Stabilizer Assembly," ASCE SPACE 98 Conference, April 1998, Albuquerque, NM, (with Andre, G.C., Carrasco C.J., Ferregut, C.M., James III, G.H. and Grygier, M.)
- "Interval Methods in Non-Destructive Testing of Aerospace Structures and in Mammography", International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98), April 20-23, Nanjing, China, (with Worden, K., Ferregut, C., Nazarian, S., George, D.L., George, M.J., Kreinovich, V., Kosheleva, O., and Cabrera, S.)
- "Smart Sensor System for NDE Corrosion in Aging Aircraft," ASNT'98 Spring Conference, Joint with 9th Asia-Pacific Conference on NDT, and 7th Annual Research Symposium, Anaheim, CA, March 24-26, 1998. (with Bar-Cohen, Y., Marzell, N., and Ferregut, C.)
- "Comparison of the Damage Detection Results Utilizing an ARMA Model and an FRF Model to Extract the Modal Parameters." Smart Structures and Materials 1998: Smart Systems for Bridges, SPIE, San Diego, CA, March 1-5, 1998, (with Garcia, G.V., and Meza, D.)

- "Localizacion y Cuantificacion de Danos en una Estructura Tridimensional Usando la Energia de Deformacion Modal," XI Congreso Nacional de Ingenieria Sismica, Veracruz, Mexico, November 26-29, 1997 (Carrasco, C., Osegueda, R., and Ferregut, C.)
- "Computational Geometry and Artificial Neural Networks: A Hybrid Approach to Optimal Sensor Placement for Aerospace NDE", Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft, The University of Texas at El Paso, October 1-2, 1997, El Paso, Texas.
- "FAST Center for Structural Integrity of Aerospace Systems," presented at 1997 meeting of FAST Centers, Florida International University, September 30, 1997.
- "Laser Induced Plate Waves Using Waveform Shaping Optics and Strain Sensing by Fiberoptics Cross-sensitivity Effect", ASNT Fall 1997 Conference, Pittsburgh, PA, Oct. 20-23, (1997).
- "Non-Equilibrium Thermodynamics Explains Semiotic Shapes: Applications to Astronomy and to Non-Destructive Testing of Aerospace Systems," 1997 International Conference on Intelligent Systems and Semiotics, Gaithersburg, Maryland, September 22-25, 1997, (Osegueda, R., Ferregut, C., George, M.J., Gutierrez, J.M., and Kreinovich, V.)
- "Localization and Quantification of Damage in a Space Truss Model Using Modal Strain Energy," SPIE 1997 Conf. On Smart Structures and Materials 1997, San Diego, CA, March 3-6, (1997), pp. 181-192, (Carrasco, C. J., Osegueda, R.A., Ferregut, C.M. and Grygier, M.,)
- "Damage Evaluation in a DC-9 Fuselage Using Laser Doppler Velocimetry Measurements," SPIE 1997 Conf. On Smart Structures and Materials 1997, San Diego, CA, March 3-6, 1997, (Meza, Jr. R., Carrasco, C.J., Osegueda, R.A., James, G. and Robinson, N.).
- "A Modal Strain Energy Distribution Method to Localize and Quantify Damage," 15th International Modal Analysis Conference, Society of Experimental Mechanics, Orlando, Florida, Feb. 3-6, 1997.
- "Damage Localization in a Space Truss Model Using Modal Strain Energy Distribution," 15th International Modal Analysis Conference, Society of Experimental Mechanics, Orlando, Florida, Feb. 3-6, 1997.
- "Damage Detection in a DC-9 Fuselage Using Laser Doppler Velocimetry," 15th International Modal Analysis Conference, Society of Experimental Mechanics, Orlando, Florida, Feb. 3-6, 1997.
- "Damage Detection in an Aircraft Fuselage and Composite Panels Using Laser Vibrometer Tests," SPIE's Conference on Nondestructive Evaluation Techniques for Aging Infrastructure and Manufacturing, Scottsdale, AZ, December 3-5, 1996.
- "A Comparative Study of Two Types of Mode Sensitive Neural Networks for Damage Assessment," SPIE's Conference on Nondestructive Evaluation Techniques for Aging Infrastructure and Manufacturing, Scottsdale, AZ, December 3-5, 1996.
- "Deteccion y Clasificacion de Danos Estructurales Usando Redes Neuronales," X Congreso de Ingenieria Estructural, Merida, Yucatan, November 16-19, 1996.
- "Modal Tests of a Space Truss Model and Damage Localization Using Modal Strain Energy", presented at the Space 96 Conference, Albuquerque, NM, June 2-6, 1996.
- "Activities of the FAST Center for Structural Integrity of Aerospace Systems," presented at the AF NDE meeting, Warner Robbins ALC, Warner Robbins, Georgia, April 2, 1996.
- "Global Damage Evaluation research at UTEP," presented at the Modal Analysis NDE Workshop, Los Alamos National Laboratories, Los Alamos, NM, September 15, 1995.
- "Routing Overweight Vehicles Minimizing Bridge Stresses", presented at the NASTO 95 Conference, Puerto Rico, July 16-20, 1995.
- "Traffic Engineering Basics", 2-day short course offered in Mexicali, Mexico, organized by California Department of Transportation (CALTRANS) and the State of Baja California, May 24-25, 1995.
- "Traffic Engineering Basics", 3-day short course offered in Monterrey, Mexico, organized by Texas Department of Transportation and the State of Nuevo Leon, Mexico. Sponsored by Texas and New Mexico LTAP programs, May 17-19, 1995.
- "Probabilistic Detectibility of Structural Damage Using Frequency Sensitivity Methods," 1995 SPIE Smart Structures Conf., San Diego, CA, Feb 1995.
- "Artificial Neural Networks for Structural Damage Detection and Classification," 1995 SPIE Smart Structures Conf., San Diego, CA, Feb 1995.
- "Structural Modal Content Control using Dynamic Stiffness -- Experimental Work ", In Proc. 1995 SPIE Smart Structures Conf., San Diego, CA, Feb. 1995.

- "Damage Evaluation of Space Structures", presented at the NASA Johnson Space Center, February 22, 1995.
- "Report on 3rd Annual Meeting of the PIH", presented at the 1995 Meeting of the National Association of Transportation Technology Transfer Centers, Washington, D.C., January 25, 1995
- "Local Technical Assistance Program," presented at the 3rd Annual meeting of the Pan American Institute of Highways, Sao Paulo, Brazil, November 6-10, 1994.
- "2D Finite Element Program to Compute Resonant Frequencies and 3D Visualization of Electromagnetic Modes in Cylindrical Resonators," 1994 IEEE Int. Freq. Control Symp., June 1-3, 1994, Boston, MA.
- "2D Finite Element Program to Compute Resonant Frequencies and 3D Visualization of Electromagnetic Modes in Cylindrical Resonators," presented at the Jet Propulsion Laboratory, May 30, 1994, Pasadena, CA.
- "Azimuthally Dependent Finite Element Solution to the Cylindrical Resonator," 1994 Applied Computational Electromagnetic Society Meeting, ACES, March 21-26, 1994, Monterrey, CA.
- "Azimuthally Dependent Finite Element Solution to the Cylindrical Resonator," presented at the Jet Propulsion Laboratory, March 20, 1994, Pasadena, CA.
- "Azimuthally Dependent Finite Element Solution to the Cylindrical Resonator," presented at Hewlett Packard, March 25, 1994, Palo Alto, CA.
- "Traffic Engineering Basics", 3-day Short Course offered in Santiago, Chile, October 8,9,10, 1993, Texas Engineering Extension Service and Pan American Institute of Highways.
- "Spanish Language Transportation Training Materials from the U.S.," presented at the 2nd Annual Meeting of the Pan American Institute of Highways", Santiago, Chile, Sept. 4 - 6, 1993.
- "Traffic Engineering Basics", 3-day Short Course offered in Tegucigalpa, Honduras June 1993, Texas Engineering Extension Service and Pan American Institute of Highways.
- "Barriers for the Technology Transfer to Latin America," 2nd Congress of the Pan American Institute of Highways, Queretaro, Mexico, June 29- July 2, 1992.
- "Damage Evaluation of Offshore Structure Using Frequency Shifts," 1992 ASME PVP Conference, New Orleans, Louisiana, June 22, 1992.
- "Damage Evaluation of an Offshore Structure Models Using Vibration Measurements", Second International Symposium of Offshore and Polar Engineering, San Francisco, California, June 17, 1992.
- "Structural Motion Control Using Modal Energy Transference," 30th IEEE Conference on Decision and Control, Brighton, England, December 11-13, 1991. (Presented by D.C. Nemir)
- "On-line Adaptive Stiffness Control to Tailor Modal Energy Content in Structures", ADPA/AIAA/ASME/SPIE Conf. on Active Materials and Adaptive Structures, Alexandria, VA, Nov. 5-8, 1991.
- "Experimentation Towards Damage Evaluation of Offshore Structures Using Vibration Measurements", 1991 Fall Meeting of the Texas Section ASCE, South Padre Island, Texas, Oct. 2-6, 1991.
- "Effects of Structural Damage on the Vibrational Mode Shapes Measured with Laser Interferometry", 1991 Fall Meeting of the Texas Section ASCE, South Padre Island, Texas, Oct. 2-6, 1991.
- "Damage Evaluation of Offshore Structures Using Vibration Measurements - Overview and Experimentation", 1991 MAES National Engineering Symposium, Houston, Texas, April 14-16, 1991.
- "Towards the Reliability Assessment of Damaged Structures From Vibration Measurements: Uncertainty Analysis Models", 1991 MAES National Engineering Symposium, Houston, Texas, April 14-16, 1991, pp. 234 - 248.
- "Three-Dimensional Finite Element Analysis of Horizontal Plate Anchors", ASCE Texas Section Fall 90 Meeting, El Paso, Texas, October 12, 1990. (Co-authors: G. Hernandez and M. Picornell, Presented by M. Picornell)
- "Effects of Boundary Conditions of the Pull-out Capacity of Helical Anchors", ASCE Texas Section Fall 90 Meeting, El Paso, Texas, October 12, 1990. (Co-authors: R. M. Rodriguez, G. Guerrero, and M. Picornell)
- "A Modal Analysis Method for Locating Stiffness and Mass Changes in Structures", SECTAM XV, 1990 Southeastern Conference on Theoretical and Applied Mechanics, Atlanta, Georgia, March 22-23, 1990.
- "Vibrational Methods for Damage Detection in Aircraft Structures", MRCE Seminar Series on Nondestructive Testing of Aircraft Structures, Minority Research Center of Excellence in Materials Science, The University of Texas at El Paso, El Paso, Texas, February 5, 1990.
- "Repetitive Load Test on a Precast-Decked Bridge Model", presented at the 69th Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C., January 7-12, 1990.
- "Modal Vibration Animation of Three-Dimensional Framed Structures Using Microcomputers", Presented at the 7th

National Conference on Microcomputers in Civil Engineering, ASCE and University of Central Florida, Nov. 8 1989, Orlando, Florida.

"Load Capacity Predictions of Soil Anchors by Parameter Identification from Finite Element Models", Presented at the 7th National Conference on Microcomputers in Civil Engineering, ASCE and University of Central Florida, Nov. 8, 1989, Orlando, Florida.

"Verification of Composite Behavior of a Precast Decked Simple Span," presented at the 68th Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C., January 21-25, 1989.

"Nondestructive Construction Error Detection in Large Space Structures," presented at the AIAA Conference on SDM Issues of the International Space Station, American Institute of Aeronautics and Astronautics, Williamsburg, Virginia, April 21-22, 1988. (Co-authored with N.S. Stubbs and T.H. Broome)

"Global Nondestructive Damage Evaluation of Offshore Platforms Using Modal Analysis," Sixth International Offshore Mechanics and Arctic Engineering Symposium, American Society of Mechanical Engineers, Session on Nondestructive Evaluation, Houston, Texas, March 4, 1987. (Co-authored with N.S. Stubbs).

"Damage Detection in Periodic Structures," presented at the 1985 ASCE Detroit Convention, Session on Damage Mechanics and Continuum modeling, Detroit, Michigan, October 22-25, 1985. (Co-authored with N.S. Stubbs)

"Scale Model Tests for Full-Depth Precast Concrete Panel-Decked Composite Bridge Span," presented at the Second Bridge Engineering Conference, Transportation research Board, Minneapolis, Minnesota, Sept. 23-25, 1984.

GRADUATE THESES AND DISSERTATIONS SUPERVISED (All at UTEP)

Nagaswaroopu Kaukuri, "Geometric Approach for Detecting and Locating Multiple Rivet Notches in Thin Aluminum Plates Using Ultrasonic Lamb Wave Scanning," Master of Science in Civil Engineering, December 2004.

Jose Rodrigo Mares, "Geometric Approach for Detecting and Locating Cracks in Thin Plates by Lamb Wave Reflection," Master of Science in Civil Engineering, May 2004.

Nageshwarreddy V. Karnati,, "Corrosion Quantification Using NDE Techniques, Lamb Wave and Fractal Approach, Master of Science in Civil Engineering, December 2003

Enrique Roldan, "Damage detection using S_0 Lamb wave scanning in thin plates with rivet holes," Master of Science in Civil Engineering, May 2003.

Rama Garigipati, "Flaw detection by Artificial Neural networks using Lamb Waves," Master of Science in Civil Engineering, December 2002.

Manuel Celaya, "Nondestructive Examination of Composite Cylinders by Using Lamb-Wave Scanning," Master of Science in Civil Engineering, July 2002.

Ulas Toros, "Damage Detectability from Modal Strain Energy Changes Under Uncertainties," Master of Science in Civil Engineering, May 2002.

Gustavo Villalba, "Three-dimensional FE Modeling of Dielectric Resonators," Ph.D. Dissertation, Electrical and Computer Engineering, May 2001. (Co-Chair with Dr. Pierluissi)

Victor Noriega, "On-Line Data Fusion of Pulse-Echo Ultrasound for Testing Composite Materials," Master of Science in Electrical Engineering, December 2001. (Co-Chair with Dr. J. Pierluissi).

Francisco De Villa, "Defect Detection in Thin Plates Using S_0 Lamb Wave Scanning," Master of Science in Civil Engineering, July 2001.

Sergio Castillo, "Vibration-Based Damage Detection on a Curved, Aluminum- Stiffened Plate Resembling an Aircraft Fuselage," Master of Science in Civil Engineering, July 2001. (Co-Chair with Dr. C. Carrasco).

Miguel Orozco, "Performance Verifications of the CONTOUR Dust Shield," Master of Science in Civil Engineering, May 2001.

Arturo Revilla, "Predicting Probe Impedance Change in Eddy Current Nondestructive Testing Using Finite Elements," Ph.D. Dissertation, Electrical and Computing Engineering, December 2000. (co-Chair with Dr. J. Pierluissi).

Mario Perez, "Performance of Vibrational Damage Detection Methods," Master of Science in Civil Engineering, December 2000.

Helder Lopez, "Fusion of Strain Energy Differences for Damage Localization," Master of Science in Civil Engineering, December 2000.

Moises Macias, "Health Monitoring of Aircraft Structures by Fusion of Modal Strain Energy Density," Master of Science in Civil Engineering, December 2000.

Cesar Carrasco, "Development of a Constitutive Microdamage Model for Simulation of Damage and Fracture of Metallic Plates Caused by Hypervelocity Impact," Ph.D. Dissertation, Material Science and Engineering, July 2000. (Co-Chair with Dr. J. Eftis)

Ravi Venugopalan, "Structural Damage Localization in a Stiffened-Plate Using Laser Holography, Image Processing Techniques and a High-Order Curve Fitting Method," Master of Science in Electrical and Computer Engineering, May 2000. (Co-chair with Dr. J. Pierluissi)

Sudhir Prabhu, "Damage Detection in a Stiffened Structure using Modal Strain Energy Differences and Finite Element Methods," Master of Science in Mechanical Engineering, December 1999. (Co-Chair with Dr. J. Herrera)

Gabriela Andre, "Comparison of Vibrational Damage Detection Methods in an Aerospace Vertical Stabilizer Assembly", Master of Science in Civil Engineering, May 1999.

Leopoldo Pereyra, "Structural Damage Localization in a Stiffened-Plate using Modal Analysis, Laser Velocimetry and a High-order Curve Fit Method", Master of Science in Civil Engineering, December 1998.

Enayat Kalantarian, "Modal Analysis Testing of a Double-Second Steel Caribbean Steel Drum," Master of Science in Civil Engineering, August 1998.

Miguel Castro-Colin, "Identification of Laser-Induced Lamb Waves in Aluminum Plates," Master of Science in Physics, July 1998.

Mario Avalos, "Deflection Analysis of Two-Way Concrete Slabs", Master of Science in Civil Engineering, December 1996.

Ehmad Abdallah, "Acceleration Behavior of Semi-active structural Control by Transfer of Modal Energy," Master of Science in Civil Engineering, December 1996.

Raul Meza, "Modal Tests of Composite Honeycomb Panels Using Laser Doppler Velocimetry for Damage Assessment," Master of Science in Civil Engineering, July 1996.

Jaime Ortiz, "Neural Networks in Damage Assessment using Vibrational Measurements," Master of Science in Civil Engineering, May 1996.

Susann Jutta Rosas, "Reliability-based Calibration of Safety Factors for Fitness-for-Service Assessment of Pipeline Girth Welds," Master of Science in Civil Engineering, Dec. 1995.

Robert Fong, "Verification of a Vibrational Damage Detection Theory in Structures", Master of Science in Mechanical Engineering, Aug. 1995.

Arturo Revilla, "Enhanced Quality Factor in Dielectric Cylindrical Resonators," Master of Science in Electrical Engineering, May 1995.

Yingjie Lin, "Semi-Active Structural Motion Control by Transfer of Modal Energy," Ph.D. Dissertation, Electrical Engineering Department, July 1994. (Co-Chair with Dr. D. Nemir)

Gustavo Jose Villalva, "Electromagnetic Analysis of an Asymmetric Induction Heater Using Finite Elements", Master of Science in Electrical Engineering, May 1994.

Thomas Stephenson, "Probabilistic Evaluation of a Vibrational NDE Damage Detection and Reliability Assessment Method," Master of Science in Civil Engineering, July 1993.

Murali Adikeshaya, "Analytical and Experimental Comparison of a Plate Vibration Characteristics", Master of Science in Civil Engineering, July 1993.

Paul D. Dsouza, "Damage Evaluation of an Offshore Structure Model Using Modal Energy." Master of Science in Mechanical Engineering, December 1992.

Rosa M. Rodriguez, "Modal Energy of Plates Using Laser Interferometry for Damage Evaluation." Master of Science in Civil Engineering, December 1992.

Yijie Qiang. "Modal Analysis of an Offshore Structure Model for Damage Evaluation." Master of Science in Civil Engineering, August 1992.

Cesar J. Carrasco, "Damage Detection in Beams Using Modal Energy Estimates." Master of Science in Civil Engineering, August 1992.

Shekar Erasala, "Modal Analysis System for Damage Detection in Offshore Structure." Master of Science in Mechanical Engineering, May 1992.

Nataraja Siddappa, "An Improved Damage Evaluation of Structures Using Vibration Data Measured with Laser Interferometer." Master of Science in Civil Engineering, May 1992.

Dawei Wang, "A Systematic Grouping/Network Modelling Approach for Finding Less Risky Highway Traffic Routes." Master of Science in Civil Engineering, December 1991.

Srinivasa R. Talluri, "Effects of Offsets on Stresses of Silicon Chip Mounted on a Copper Lead Frame." Master of Science in Manufacturing Engineering, December 1991.

Gustavo Hernandez, "Three-Dimensional Modeling of Confined Horizontal Plate Anchors." Master of Science in Civil Engineering, September 1990.

Nasaruddin Bin Mohamad, "Determination of the Load Capacity of Structures From Dynamic Impact Testing". Master of Science in Civil Engineering, August 1990.

Syed M. Hussaini, "Experimental Verification of Damage Detection in Three-Dimensional Trusses," Master of Science in Civil Engineering, May 1990.

Martin Vila, "Evaluation of Vibrational Damage Detection Theories for Structures." Master of Science in Civil Engineering, May 1990.

Nagaraj V. Rao, "Modal Animation of Three Dimensional Frame Structure on Microcomputers," Master of Science in Manufacturing Engineering, December 1989.

Sanjay K. Mahajan, "Adaptive Vibrational Method for Identification of Structures and Damage Detection," Master of Science in Mechanical Engineering, December 1989.

Guillermo E. Guerrero, "Finite Element Analysis of the Behavior and Load Capacity of Soil Anchors," Master of Science in Civil Engineering, May 1989.

Seethal Doddannawar, "Interactive Computer Graphics System for Finite Element Analysis," Master of Science in Manufacturing Engineering, December 1988.

Tao-Chung Chen, "Detection of Stiffness Losses in Two-Dimensional Trusses," Master of Science in Civil Engineering, August 1988.

ENGINEERING EDUCATION

Teaching duties have typically consisted of offering graduate and undergraduate level courses. Evaluations from students on the course and the instructors have always been very positive about the teaching methods. Below is a list of courses taught.

CE 205 Mechanics of Materials (at Texas A&M University).
 CE 3103 Introduction to Civil Engineering
 ENGR 1401 Introduction to Engineering
 CE 3215 Engineering Mechanics I
 BE 2434 Mechanics I
 CE 3343 Structural Analysis I
 CE 4460 Structural Analysis II
 CE 4470 Mechanics of Materials II
 CE 4371 Design of Steel Connections
 CE 4371 Design of Aircraft Structures (with Boeing Co. using Long Distance Learning)
 CE 4371 Prestressed Concrete Design
 CE 1595 Graduate Seminar
 CE 5305 Advanced Structural Analysis
 CE 5307 Theory of Finite Element Analysis
 CE 5333 Plates and Shells
 CE 3590 Applied Finite Element Analysis
 CE 5390 Theory and Applications of Finite Element Analysis
 CE 5390 Advanced Structural Dynamics
 CE 5490 Structural Dynamics by Finite Elements
 CE 5390 Structural Stability (CE 5311)

UNIVERSITY COMMITTEE ASSIGNMENTS

Faculty Senate Scholarship Committee, Sept. 2002 – Sept. 2003
BE 2434 Mechanics I Committee, Chair, Sept. 2000 – Jan. 2003
College of Engineering Scholarship Committee, Sept. 1999 to Sept. 2001
Member, College of Engineering Undergraduate Curriculum Committee, Sept. 98 to Sept. 2001.
Chairman, Civil Engineering Dept. Graduate Studies Committee, Sept. 94 to Sept. 2001.
Civil Engineering Faculty Evaluation Committee Member, 1998 -2000
Member of College of Engineering Computer Committee, Sept. 1993 to September 1997
Dean of Engineering Search Committee, Sept. 1995 through March 1996
Chair of Faculty Senate Teaching Effectiveness Committee, Sept. 1994 to Aug. 1995
Member of Faculty Senate Teaching Effectiveness Committee, Sept. 1992 to Aug. 95
Member of Faculty Senate, Sept. 1991 to Aug. 1993
Member of College of Engineering Computer Committee, Sept. 1990 to Aug. 1992.
Member of Chairman of Civil Engineering Search Committee, Sept. 89 through Aug. 90
Member of Search Committee in the CE Department for various vacant positions

NON-UNIVERSITY COMMITTEES AND BOARDS

Board Member, Camino Real Angels Investors, serve as a liaison between the University and the Angels, Dec. 2003 – present.
Member, Executive Committee of Hispanic National Achievement Awards Corporation (HENAAC), July 2003 – present.
Advisory Committee on Research Programs, Texas Higher Education Coordinating Board, Dec. 2001 – present
Engineering Research Council Member, American Society for Engineering Education, (Oct. 2001 - present)
ASCE -ASD Committee on Dynamics and Controls, American Society of Civil Engineers, Sept. 1998 to Sept. 2001, Vice-Chair
SPIE Program Committee Member, 1999 SPIE Conference on Smart Structures and Materials, Newport Beach, California, March 3-5, 1999
SPIE Program Committee Member, 1999 SPIE Conference on Nondestructive Evaluation Techniques for Aging Infrastructure and Manufacturing, Newport Beach, California, March 3-5, 1999
SPACE 98 , chair of session on Dynamics and Controls, ASCE, April 1998.
Organizer, Workshop on Intelligent NDE Sciences for Aging and Futuristic Aircraft, Sept. 30 - Oct.2, UTEP, El Paso, Texas. Sponsored by AFOSR
SPIE Program Committee Member of 1998 SPIE Conference on Smart Structures, San Diego, California, Feb. 27 through March 3, 1998
SPIE Program Committee Member of 1997 SPIE Conference on Smart Structures, San Diego, California, March 1997
ASCE -ASD Committee on Dynamics and Controls, American Society of Civil Engineers, Sept. 1996 to present
SPIE Program Committee Member of 1995 SPIE Conference on Smart Structures, San Diego, California, Feb. 27 through March 3, 1995
Member, Texas Section ASCE Education Committee, Sept. 1990 through Aug. 1992.

PROPOSAL AND PAPER REVIEWS

Proposal reviewer U.S. Civilian Research and Development Foundation, 2005
Proposal reviewer for the National Science Foundation, Eng. Directorate, REU, Jan. 1999
Reviewer for Journal of Aerospace Engineering, ASCE
Proposal reviewer for the National Science Foundation, Eng. Directorate, Struc. Control, Jan. 1995
Proposal reviewer for the U.S. Army research Office
Reviewer for IRWIN Publishers (2 books)
Reviewer for Harper and Row (1 book and 1 software package for structural analysis)
Reviewer for the National Defense Science and Engineering Graduate Fellowship Program (5 years)
Reviewer for Journal of Structural Engineering ASCE
Reviewer for Articles submitted to the Transportation Research Board

CONSULTING ACTIVITIES

FBI, Harper Row Publishers, National Science Foundation, Pan American Institute of Highways,
IRWIN Publishers, Battelle Group, Inc., Federal Highway Administration, Texas Engineering
Extension Service, Texas Transportation Institute