VITA OF

POL D. SPANOS

Departments of Civil and Mechanical Engineering
Brown School of Engineering, Rice University
P.O. Box 1892, Houston, Texas 77251-1892, USA
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DEGREES RECEIVED AND DATES

Ph.D., Major - Applied Mechanics; Minor I: Applied Mathematics; Minor II: Business Economics, California Institute of Technology, 10/76.

M.S., Civil Engineering, California Institute of Technology, 6/74.

Diploma , Mechanical Engineering and Engineering Science, National Technical University, Athens, Greece, 6/73.

Diploma (6-yr. program), Varvakeios School for Advanced Students, 6/68.

EXPERIENCE

L.B. Ryon Chair in Engineering, Rice University, 7/1/88 -

Professor of Mechanical Engineering and of Civil Engineering (two departments), Rice University, 7/1/84-6/30/88.

The P.D. Henderson Associate Professor of Engineering, University of Texas at Austin, 9/1/83-8/31/84.

Associate Professor, Engineering Mechanics, (Tenured), University of Texas at Austin, 9/1/81-8/31/83.

Assistant Professor, Engineering Mechanics, University of Texas at Austin, 9/1/77-8/31/81.

Faculty Member (Research Fellow), Civil Engineering, California Institute of Technology, 1976-1977.

Research Assistant, Dynamical Systems, California Institute of Technology, 1973-1976.

Distinguished Undergraduate Student, N.V. Phillipps Company, Research Laboratory, Eindhoven, Holland, 7/1/72-8/31/72.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Engineer, Texas: 1979 -

Registered Civil Engineer, Greece: 1978 -

Registered Mechanical Engineer, Greece: 1973 -

Alexander von Humboldt Association of America, Lifetime Member (by invitation): 1999 -

American Academy of Mechanics, Member (by invitation): 1983-1994, Fellow: 1994 -

American Society for Engineering Education, Member: 1995 –

American Society of Civil Engineers,
Associate Member: 1978-1981, Member: 1981-1991, Fellow: 1991 –

American Society of Mechanical Engineers,
Associate Member: 1973-1981, Member: 1981-1989, Fellow: 1990 -

Earthquake Engineering Research Institute, Member (by invitation): 1985 -

International Association for Structural Safety and Reliability, Member (by invitation): 1988 -

PROFESSIONAL COURSES TAUGHT

Design of Offshore Platforms, University of Texas at Austin, lecturer, Fall 1977, Spring 1978, Fall 1978, Spring 1979.

Structural Dynamics, University of Texas at Austin, lecturer, Spring 1978.

Applications of Stochastic Differential Equations in Engineering, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland, lecturer, 10/2-8/83.

Fundamentals of Earthquake Engineering, University of Southampton, England, co-organizer and lecturer, 3/15-17/83, 7/10-12/84, 7/4-5/85.

Dynamics of Offshore Structures, University of Southampton, England, organizer and lecturer, 3/13-15/84.

Computational Structural Dynamics, University of Southampton, England, organizer and lecturer, 11/18-21/84.

Deterministic and Random Vibrations, NASA, Houston, organizer and lecturer, Fall 1984, Spring 1985, Fall 1985.

Applied Probabilistic Structural Dynamics, Swiss Federal Institute of Technology, Lausanne, Switzerland, co-organizer and lecturer, 3/9-12/87.

Analysis of Civil Engineering Structures Under Special Loads, University of Pavia, Italy, organizer and lecturer, 12/3-12/87.

Advanced Study Institute on Finite Element Analysis for Engineering Design, Indian Institute of Technology, Madras, lecturer, 8/1-10/88.

Vibration Analysis for Predictive Maintenance, Instituto Technologico y de Estudios Superiores de Monterey, Mexico City, Mexico, organizer and lecturer, 6/12-14/89.

Auto-Regressive-Moving Average (ARMA) Algorithms for Vibration Analysis, Centre Spatial de Toulouse, France, organizer and lecturer, 6/19-22/89.

Applied Random Vibrations, University of Palermo, Italy, 7/2-13/90.

Probabilistic Offshore Platform Dynamics, Exxon Production Research Company, Houston, Texas, organizer and lecturer, 10/29-11/7/90.

Stochastic Dynamics of Marine Structures, COMETT course, Instituto Superior Tecnico, Lisbon, Portugal, co-organizer and lecturer, 12/6-9/93.

Stochastic Differential Equations in Civil Engineering, Centro Studi, Perugia, Italy, lecturer, 9/12-16/94.

Stochastic Dynamics, Office National D'Etudes et De Rescherches Aerospatiale, Paris, France, organizer and lecturer, 12/15-20/96.

Structural Reliability, National Technical University, Athens, Greece, lecturer, Fall 1998.

Nonlinear Dynamics: Complexity and Chaos, Summer School, Livatheia, Greece, lecturer, 7/13-25/98.

Probabilistic Engineering Mechanics, Federico Santa Maria University, Vina der Mare, Chile, lecturer, 11/21-25/00.

Stochastic Dynamic Tools For Analysis of Offshore Systems (lecturer): CeSOS Workshop on "Research Challenges in Probabilistic Load and Response Modeling," Norwegian Institute of Technology, March 23-25, 2006.

Dynamics of Monument-Like Rigid Structures, Professional School for Structural Engineers, Palermo Italy, November 14, 2006.

M.S. STUDENTS SUPERVISED

L. C-C. Cheang
Thesis: "Behavior of a Circular Model Pile Group in Clay Under Static and Cyclic Axial Loading," 12/79.

J. E. Hansen
Thesis: "Linear Prediction Theory for Digital Simulation in Structural Dynamics Applications," 5/81.

T. A. Strouboulis
Report: "Monte Carlo Simulation for Structural Dynamics Problems," 12/81.

L. M. Vargas-Loli
Thesis: "A Statistical Approach to Spectrum Compatible Earthquake Records Simulation," 12/83.

Kenneth P. Schultz
Thesis: "Digital Simulation of Turbulent Velocity Spatial Realizations," 8/84.

J. R. Red-Horse
Program: Random Vibrations, 8/84.

S. Narasimhan
Thesis: "A Phenomenological Study of Friction Induced Torsional Vibrations of Drill Strings," 5/87.

W-Y. Tein
Thesis: "Approximate Harmonic Analysis of Marine Risers," 5/87.

F. M. Lavelle
Thesis: "Analysis of a Class of Secondary Systems by Generalized Modes," 4/88.

N. Tengler
Program: Dynamics of Aerospace Structures, 5/88.

J.L. Gonnaud
Thesis: "A Probabilistic Approach to the Critical Element Model for Fatigue in Composite Materials," 12/88.

S.H. Swerdon
Thesis: "A Harmonic Balance Solution of the Coupled, Nonlinear Equations of Motion of a Flexible Structure Subject to Vortex Shedding," 5/91.

T.L. Doyle
Program: Vehicle Vibrations, 5/92.

S.M. Miller
Thesis: "Determination of Linear System Random Response Spectral Moments by Hilbert Transforms," 5/92.

R.R. Eberle
Thesis: "Two-Stage Auto/Cross-Correlation Matching Representations of the Power Spectrum and Bispectrum," 5/93.

J.D. Rowatt
Thesis: "A Probabilistic Model For Fatigue Damage Accumulation in Composite Laminates," 5/93.

S.A. Scheer
Program: Structural Dynamics, 5/93.

A.K. Sengupta
Thesis: "Numerical Simulation of the Roller Cone Drill Bit Lift-Off Phenomenon," 9/93.

S. Kotsonis
Thesis: "Effects of Axial Forces on Drillstring Lateral Vibrations," 5/94.

V.R.S. Rao
Thesis: "Dynamics of Flexible Mechanical Systems with Parameter Stochasticity," 5/94.

G.F. Sievert
Thesis: "Effects of Stabilizer Bars on Road Vehicle Ride Quality," 5/94.

C. Rowatt
Program: Dynamics and Vibrations, 5/95.

A.L. Morris
Thesis: "A Study of Tibial Vibrations During the Tibial Resection Procedure of Total Knee Arthroplasty," 12/95.

J.M. Call
Program: Structural Dynamics, 5/97.

Y.R. Alsandor
Thesis: "Deterministic and Random Vibration of Systems with Frequency Dependent Parameters or Fractional Derivatives", 5/98.

A. Chevallier
Thesis: "A Probabilistic Approach to the Frequency Domain Analysis of Drill-String Lateral Vibrations", 5/98.

C.K. Secora
Thesis: "Residual Flexibility Methods for Decoupled Analysis of Integrated Structural Systems", 5/98.

E. Pavlou
Thesis: "Dynamic Analysis of Systems with Hysteretic Damping", 5/99.

P. Roussis
Thesis: "Dynamic Analysis of Stacked Rigid Blocks", 5/99.

R. Beer
Thesis: "Program: Probabilistic Structures Dynamics", 5/00.

J.F. Brusoe
Thesis: "Decoupled Space Station/Shuttle Analysis in the Presence of Non-Classical Damping and Geometric Non-Linearities", 5/00.

S. Tsavachidis
Thesis: "Deterministic and Stochastic Analysis of Nonlinear Systems with Biot Hysteretic Damping", 1/01.

E. McCants (co-advisee)
Thesis: "Optimal Open-Loop CMG Maneuvers", 7/01.

N. Kelm (co-advisee)
Thesis: "Hysteretic Response of Articular Cartilage to Cyclic Loading", 4/02.

N. Politis
Thesis: "An Approach for Efficient Stochastic Analysis of Drill-String Random Vibrations", 4/02.

E. Safiolea (co-advisee)
Thesis: "Assessment of Critical Factors in the Tropical Storm Allison Impact on the Braes Bayou Watershed", 4/02.

J. Wang
Thesis: "A Stochastic Approach for Estimating Fatigue Life of Equipment Located at Topside of FPSO Offshore Systems", 4/02.

D. Villa
Special Project: ”Intrinsic Modes in Stochastic Processes”, 8/02

A. Lee
Thesis: “Robust Momentum Manager Controller for Space Station Applications”, 5/03

A. Brown

Special Project: “Monte Carlo Methods in Space Station Dynamics”, 5/04

C. Malloy

Special Project: “Fatigue Analysis for Space Satellite Applications”, 5/04

P. Ghantiwala

Special Project: “Dynamic Modeling of Gaiting”, 8/04

A. Kontsos
Thesis: “Deterministic and Stochastic Analysis of Oscillators with Preisach hysteresis”, 7/04

V. Gkaras

Thesis: “Vibration Isolation by a Set of Distributed Non-Linear Attachments”, 2/05

B. Posta

Thesis: “Dynamical Analysis of Animal Habitats in a Space Station Environment”, 3/05

R. Neves

Program: “Vibration Applications in Petroleum Engineering,” 5/06

L. Bailey

Special Project: “Structural Dynamics Issues for Return-to-Flight for the Space Shuttle,” 8/06.

Ph.D. STUDENTS SUPERVISED

T-W. Chen
Dissertation: "Analysis of Flow-Induced Vibrations Using Linearization Methods," 5/80.

K. Worayingwong (co-advisee)
Dissertation: "Analysis of One Dimensional Vertical and Radical Consolidation by Physical Discrete Elements Models," 8/81.

G. P. Solomos
Dissertation: "Linear Structural Responses to Evolutionary Random Loads," 8/82.

A-S. Koh
Dissertation: "Rocking and Toppling of Block-Like Structures on Rigid or Flexible Foundations Subjected to Harmonic or Random Excitations," 12/84.

M. Mignolet
Dissertation: "ARMA Simulation of Multivariate and Multidimensional Processes," 5/87.

J. R. Red-Horse
Dissertation: "Averaging for Probabilistic Nonlinear Structural Dynamics Problems," 1/88.

R. Ghanem
Dissertation: "Analysis of Stochastic Systems with Discrete Elements," 11/88.

V. Roy
Dissertation: "Pade-Type Solutions to Nonlinear Stochastic Dynamics", 5/89.

M. Donley
Dissertation: "Development of Stochastic Quadratization for Nonlinear Systems with Applications to Compliant Offshore Structures," 9/89.

S. Bhattacharjee
Dissertation: "Filter Approaches to Stochastic Dynamic Analysis of Compliant Offshore Structures," 4/90.

F. M. Lavelle, III
Dissertation: "A Lanczos Component Mode Synthesis Algorithm For Locally Nonlinear Systems With Applications To Seismic Structural Pounding," 9/90.

R. Berka
Dissertation: "Development of a Large Space Robot - A Multi-Segment Approach," 5/91.

M.L. Payne
Dissertation: "Drilling Bottom-Hole Assembly Dynamics," 5/92.

W-Y. Tein
Dissertation: "An Engineering Approach For Estimating Seismic Power Spectra," 5/92.

R. Lu
Dissertation: "System Identification Of Nonlinear And Parametrically Excited Dynamics Systems With Application To Offshore Structures," 8/94.

A. Majed
Dissertation: "A Residual Flexibility Approach For Decoupled Analysis Of Nonlinear Dynamic Systems," 8/94.

R.R. Eberle
Dissertation: "A Physically Motivated Reduced-Order Modal Energy Technique For ARMA Spectrum Estimation," 5/95.

J.D. Rowatt
Dissertation: "Application Of Markov Chains To The Critical Element Model For Determining The Fatigue Life Of Composites," 5/95.

B.A. Zeldin
Dissertation: "Random Field Simulation: ARMA and Wavelets Procedures for Reliability Analysis of Engineering Systems," 5/95.

D.A. Kozodoy
Dissertation: "Nonconservative Control Design for Robustly Stable Structural Dynamic Systems," 11/95.

S.M. Miller
Dissertation: "Multibody Mechanics and the Residual Flexibility Method," 4/96.

G.L. Davis
Dissertation: "An Analysis of Nonlinear Damping and Stiffness Effects in Force-Limited Random Vibration Testing," 5/98

V.R.S. Rao
Dissertation: "A Wavelet Based Numerical Scheme for Stochastic Mechanics", 5/00

D. Boronowski
(Alexander von Humboldt Foundation advisee, Technical University of Munich, Germany)
Dissertation: "Multivariate Linear and Nonlinear Analysis of Brain Electric Recordings", 1/01

J. Pappas
(international co-advisee, University of Patras, Greece)
Dissertation: Probabilistic Modeling of Fatigue in Composite Materilals", 8/00

G. Failla
(international co-advisee, University of Palermo, Italy),
Dissertation: "Galerkin Approaches for Spectral Determination of Nonlinear Oscillators", 3/01

A. Chevallier
Dissertation: "Nonlinear Stochastic Analysis of Drill String Vibrations", 1/01

P. Tratskas
Dissertation: "Wavelet-based Excitation Representation and Response Determination of Linear and Nonlinear Systems", 3/02

R. Ghosh
Dissertation: "Effect of Top Tensioned Risers (TTR) on the SPAR Responses: Time Domain and Frequency Domain Approaches", 10/04

N. Politis

Dissertation: "Joint Time Frequency Analysis in Structural Engineering Applications", 2/05

J. Teczan

Dissertation: "Non-Linear System Response to Non-Stationary Input Processes Using Harmonic Wavelets", 4/05

M.S. STUDENTS SUPERVISED (CURRENTLY)

M.Osenar

E.Romero

A. Lee

M. Nakamura

R. Roady

A. Saleh

C. Vantasal

Ph.D. STUDENTS SUPERVISED (CURRENTLY)

M.Esteva

V. Gkaras

A. Giaralis

N.Kelm

A. Kontsos

L. Robledo Ricardo

A. Tamer

D. Hernandez

POSTGRADUATE/VISITING RESEARCHERS HOSTED

Mr. O. Yokomizo, Energy Research Laboratory, Hitachi, Ltd., Japan, supported by his company, 9/1/82-8/31/83.

Dr. G. Solomos, supported by a NSF grant, Fall 1982.

Dr. S. Dimitriadis, supported by a NSF grant, Fall 1984 - Spring 1985.

Dr. A. Bokaian, supported by a Presidential Young Investigator grant, Fall 1985 - Summer 1986.

Mr. Y. Lin, supported by a NASA grant, Fall 1985 - Summer 1987.

Dr. A. Hac, supported by a Presidential Young Investigator grant, Spring 1986 - Fall 1986.

Mr. A. Cunha, supported by a grant from American-Portugal Foundation, 5/89.

Dr. R. Ghanem, supported by a grant from Texas Instruments, Inc., Dallas, Texas, Spring 1989 - Summer 1990.

Dr. K. B. Rao, Structural Engineering Research Centre, CSIR Campus, Madras, India, supported by the Indian government, 4/1/94 - 5/31/94.

Mr. S. Benfratello, University of Palermo, Italy, supported by the Italian government, 8/27/94 - 12/9/94.

Ms. M. Vannucci, Department of Statistics, University of Florence, Italy, supported by the Italian government, 3/15/95 - 5/15/95.

Dr. Franck Toubalem, Ecole Centrale de Lyon, France, supported by the French government, 11/01/96 - 05/23/97.

Ms. Laura Marcaccioli, Department of Structural Engineering, University of Florence, Florence, Italy, supported by the Italian government, 9/1/97 - 11/30/97.

Mr. Fabrice Repiton, Products & Structures Design, Institut Francais de Mecanique Avancee, Aubiere, France, supported by the French government, 2/1/98 - 7/31/98.

Mr. Y. Pappas, Department of Mechanical Engineering, University of Patras, Patras, Greece, supported by the Greek government, 9/15/98 - 12/15/98.

Mr. G. Failla, Department of Structural Engineering, University of Palermo, Palermo, Italy, supported by the Italian government, 9/1/99 - 3/31/00

Mr. M. Kaminski, Institute of Fundamental Research, Poland, supported by the Polish government, 9/1/99 - 8/31/00

Schmalfuss, Universitaet Karlsruhe (TH), Institut Fuer Technische Mechanik, supported by the University of Karlsruhe, 4/1/02 – 6/15/02.

S. Warren, California Institute of Technology (Caltech), Pasadena, CA, supported by the Montcello Scholarship for Undergraduate Students by Caltech, 7/15/02 – 9/22/02.

P. Cacciola, University of Messina, Italy, supported by a grant from the Italian government,1/15/03 – 7/15/03.

M. Beer, University of Dresden, Germany, Lyonel Fodel (Alexander von Humboldt) Research Fellow, 9/1/2003 – 8/31/2004

A. Sofi, University of Messini, Italy, supported by University of Messini, 09/01/2004 – 12/15/2004

S. Lee, Kunsan National University, Kunsan, Chonbuk-Do, Republic of Korea, supported by Kunsan National University, 07/01/2004 to 06/30/2005

V. Nava, University of Reggia Callabria, Italy, supported by the Italian Government, 09/01/2006 to 12/31/2006.

HONORS AND AWARDS

Panhellenic Laud in Mathematics (High School Division), Greek Mathematical Society, 1968.

European Award of Science (College Division), N.V. Phillipps Company, Eindhoven, Netherlands, 1969.

Scholarship, Greek Scholarships Institution, 1968-1972.

Special Tuition Scholarship, California Institute of Technology, 1973-1976.

Academic Excellence Award, University of Texas at Austin Engineering Foundation, 1978-1979, 1979-1980.

Several Travel Awards from the National Science Foundation and the National Academy of Science to attend meetings and present papers in the USA, Canada, Soviet Union, Japan, Western Europe, India, Brazil, Australia, and New Zealand.

The 1981 Distinguished Guest Scholar, Kyoto University, Japan, to travel to and lecture at the Disaster Prevention Research Institute of Kyoto University, Japan, 7/1-31/81.

The 1982 Pi Tau Sigma Gold Medalist for outstanding achievements within ten years from graduation, ASME.

Member of the Editorial Board, International J. of Soil Dynamics and Earthquake Engineering; International J. of Applied Ocean Research; Lecture Notes in Engineering, Springer-Verlag (retired); MicroSoftware for Engineers (retired); Engineering Analysis with Boundary Elements; The Shock and Vibration Digest; International Journal of Materials & Structural Reliability.

Contributing Editor (1984-1994), Editor (1994-1996), Editor-in-Chief (1997-present), International J. of Non-Linear Mechanics.

The P.D. Henderson Teaching Fellow of Engineering, University of Texas at Austin, 9/1/83-8/31/84.

Presidential Young Investigator Award, Earthquake Engineering, National Science Foundation, 1984-1989.

Associate Editor and Co-Founder (1985-1992), Editor (1992 - present), J. of Probabilistic Engineering Mechanics.

News Correspondent, Engineering Mechanics Division, ASCE, 10/1/84-9/30/86.

Distinguished Invited Scholar, French Government, to visit and lecture at Ecole Centrale des Arts and Manufactures, Centre Nationale d'Etudes Spatiales, Institut Francais du Petrole, and other organizations, 12/15-22/85.

Associate Editor, J. of Engineering Mechanics, ASCE, 10/1/86-9/30/88.

Certificate of Merit, for identifying and disclosing new technology, McDonnell Douglas Astronautics Co., Houston, TX, 1987.

Visiting Professor, Department of Structural Mechanics, University of Pavia, Italy, 12/1/87-1/31/88.

Stochastic Linearization in Structural Dynamics, Masseman Distinguished Lecture Series, Department of Civil Engineering, University of Notre Dame, 4/18/88.

Associate Editor, J. of Applied Mechanics, ASME, 7/1/88 - 6/30/94.

Walter L. Huber Civil Engineering Research Prize, for outstanding contributions in Engineering Mechanics for a member under 40 years of age, ASCE, 1989.

Representative of the ASCE to the United States National Committee on Theoretical and Applied Mechanics, 10/1/89-8/31/97.

Castigliano Visiting Professor, Department of Structural and Geotechnical Engineering,University of Palermo, Italy, 7/1-31/90.

Gustus L. Larson Memorial Award, for outstanding achievement in Mechanical Engineering within 10-20 years following graduation, ASME, 1991.

Alfred M. Freudenthal Medal, for numerous and valuable contributions to engineering mechanics, reliability theory and probabilistic methods in Civil and Mechanical Engineering, and for broad professional services in these fields, ASCE, 1992.

Associate Editor, J. of Vibration and Acoustics, ASME, 7/1/93 - 1997.

G.R. Brown Award for Superior Teaching, Rice University, 1995 and 1996 (recipients selected by polling students five years after graduation from Rice University).

Humboldt Research Award for Senior Scientists, from the Alexander von Humboldt Foundation, Germany, 1995.

Associate Editor, J. of Aerospace Engineering, ASCE, 1996 -

IASSAR Research Prize in the area of Stochastic Dynamics, International Association for Structural Safety and Reliability, 1997.

Distinguished Lecturer, ASME, 1997-2003.

Schmidt Distinguished Visiting Professor, Florida Atlantic University, 4/4-12/98.

Nathan M. Newmark Medal, for fundamental contributions to techniques of representing dynamic loads and analyzing vibrations, and for pivotal studies of a diverse class of practical problems of dynamics, ASCE, 1999.

Honorary Citizen of the City of Messini in Greece, for notable contributions to science and the society, September 2, 2002.

Theodore Von Karman Medal for lifetime contributions to engineering mechanics, ASCE, 2003.

Elected Corresponding Member, Academy of Athens (National Academy of Greece),2003

Elected Member National Academy of Engineering (USA),2005

Distinguished Visiting Professor, Universite Marne-de -la - Valle,Paris, France, June/July 2006.

KEYNOTE LECTURES

Versatile Techniques for Nonlinear Probabilistic Structural Dynamics, Probabilistic Mechanics and Structural and Geotechnical Reliability, Specialty Conference of the American Society of Civil Engineers, Denver, CO, 7/8-10/92.

Some Useful Methods for Practical Nonlinear Stochastic Structural Dynamics Problems, Convegno Nazionale de Meccanica Stocastica (National Italian Association of Mechanics), Taormina, Sicily, Italy, 7/6-8/93.

Some Representation Techniques for Stochastic Fields in Finite Element Applications, 7th International Conference on Application of Statistics and Probability in Civil Engineering, Paris, France, 7/10-13/95.

Versatile Techniques for Current Problems of Stochastic Mechanics, Symposium on Stochastic Mechanics, Worldwide Renowned Professor Series, Musashi Institute of Technology, Tokyo, Japan, 3/15-16/96.

ARMA Simulation of Random Fields: Recent Developments, 5th National Congress on Mechanics, Ioannina, Greece, 8/27-30/98.

A Perspective on Probabilistic Engineering Mechanics Methodology, Annual ASCE/EMD Conference, Johns Hopkins U., Baltimore, MD, 6/99.

Versatile Methods for Nonlinear Random Vibration Analysis, 17th ASME Biennial Conference on Mechanical Vibration and Noise, Las Vegas, NV, 9/99.

Stochastic Processes in Mechanics, Keynote Lecture, Association of Applied Mathematics and Mechanics (GAMM), Gottingen, Germany (April 6, 2000).

Pragmatic Techniques for Non-linear Stochastic Dynamics, Keynote Lecture, EUROMECH 413, Colloquium on Stochastic Dynamics of Non-linear Mechanical Systems, University of Palermo, Italy (July 11, 2000).

Vibrations of Drilling Systems and Statistical Analysis Tools, Keynote Lecture, International Workshop on New Problems and Methods in Engineering Dynamics and Mechanical Vibrations, University of the Witwatersrand, Johannesburg (July 4, 2002).

Multiscale Modeling via Wavelets of Evolutionary Spectra in Mechanics Applications, Keynote Lecture, International Symposium on Multiscaling in Mechanics, Messini, Greece (September 2, 2002).

Wavelets Applications in Structural Dynamics, Keynote Lecture, EURODYN 2002, Munich, Germany (September 5, 2002).

Wavelets in Sciences, Engineering, and Letters, Keynote Lecture, International Conference on Olympism and the Fulbright Spirit: Humanities in Action, Athens, Greece. (October 9, 2004)

Time Frequency Analysis in Stochastic Structural Dynamics, Plenary Talk, Italian Association for Computational Mechanics, Panteleria, Italy. (June 1, 2004)

Methods for Nonlinear Stochastic Dynamics for Excitations Specified via Wavelets, Keynote Lecture, 7th National Congress (Greek) on Theoretical and Applied Mechanics, Chania, Greece (June 25, 2004)

Wavelet Applications in Human Endeavors, International Fulbright Conference on Humanism, Athens, Greece, October 7-9, 2004

Chirplets,Intrinsic Modes, and Wavelets in Mechanics Applications, National Conference of the Italian Society of Mechanics, Florence, Italy, September 13, 2005

GRANTS AND CONTRACTS

Random Response of Nonlinear Oscillators, $3000, Bureau of Engineering Research, University of Texas at Austin, 1977-1978.

Dynamic Analyses of Deep Water Pipe Systems, $3000, Bureau of Engineering Research, University of Texas at Austin, 1977-1978.

Flow Induced Vibrations of Marine Risers, $3000, University Research Institute, University of Texas at Austin, 1978-1979.

Probabilistic Analysis of Nonlinear-Inelastic Earthquake Response of Structures, $26,968, National Science Foundation - Problems Focused Research, 1/1/79-3/16/80.

Probabilistic Analyses of Nonlinear Seismic Structural Responses, $2800, University Research Institute, University of Texas at Austin, 1979-1980.

Numerical Aspects of Some First-Passage Problems, $2000, Bureau of Engineering Research, University of Texas at Austin, Summer 1980.

Specialized Engineering Research Equipment for Structural Dynamics Laboratory, (with R. Craig and R. Stearman), $19,300, National Science Foundation Engineering Division and University of Texas at Austin, 6/1/80-11/30/81.

Response Statistics Due to Earthquakes with Evolutionary Spectra, $68,375, National Science Foundation, Problems Focused Research, 6/1/80-11/30/82.

Linearization Techniques for Flow Induced Vibrations, $73,832, National Science Foundation - Civil and Mechanical Sciences, 2/15/80-7/31/82.

Auto-Regressive Statistical Models for Monte Carlo Studies of Offshore Structures, $3848, University Research Institute, University of Texas at Austin, 1981-1982.

Statistical Approaches to Linear Dynamic Analysis of Aero-Structures, $89,398, NASA Lewis Research Center, 12/18/81-12/17/84.

Stochastic Analysis of Earthquake Induced Linear and Nonlinear Structural Responses, $96,715, National Science Foundation, Civil and Environmental Engineering Division, 6/1/82-5/31/84.

Random Flow-Induced Vibration of Some Compliant Structures, $17,993, Structural Mechanics Program, National Science Foundation, 8/15/84- 1/31/86.

Presidential Young Investigator Grant, $312,500, National Science Foundation, 1984-1989.

Industrial Matching Funds, Presidential Young Investigator Award, $187,500 (direct cost), Brown & Root, Shell Development Company, NL Industries, Conoco Inc., Tracor, Inc., Dow Chemical, 1984-1989.

Dynamics of Structures with Moving Masses, (with J.E. Akin), $70,000, NASA, Johnson Space Center, Houston, 7/1/85-6/31/86.

Digital Filter Techniques for Space Station Dynamic Studies, $50,000, NASA Langley Research Center, 10/1/86-9/30/88.

Seismic Analyses of Secondary Systems, $100,000, 1986-1987; $50,253, 1986-1987; $50,000, 1987-1988; $70,523, 1989-1990; $54,000, 1990-1991; $47,270, 1991-1992; National Center for Earthquake Engineering Research, State University of New York at Buffalo.

Knowledge Based Signal Processing for Predicting Maintenance, $24,900, Texas Instruments, Inc., Dallas, TX, 9/15/88-5/15/89.

Multibody Dynamics In Robotics, $31,212, NASA, Johnson Space Center, Houston, TX, 7/1/89-8/31/90.

Signal Understanding for Active Monitoring and Control of Truck Vehicle Dynamics, $35,766, Texas Instruments, Inc., Dallas, TX, 9/1/89-6/30/90.

Computer Assisted Dynamic Analysis of Inclined Drilling, $10,600, 1990-1991; $22,650, 1991-1992; $20,000, 1992-1993; University of Texas Center For Earth Sciences and Engineering - Industrial Consortium.

Novel Approach For Structural Mechanics Problems With Stochasticity, $250,402, Air Force Office of Scientific Research, 10/15/90-10/15/93.

Reliable Directional Drilling by Computational Analysis, $183,000 (direct cost), Energy Research in Applications Program, State of Texas, 11/1/90- 10/31/93.

First International Conference on Computational Stochastic Mechanics, $15,000, 9/17-19/91, Corfu, Greece, National Science Foundation, 6/1/91-5/31/92.

Approaches For Estimating Space Shuttle Random (High Frequency) Loads and Combining Them With Deterministic (Low Frequency) Loads, $58,053, NASA, Johnson Space Center, Houston, TX, 5/1/91-4/30/92.

A Spectral Approach for Analyzing Structures with Random Parameters, $113,900, National Science Foundation, Division of Mechanical and Structural Systems, 1/1/91-6/30/93.

Stochastic Quadratization For Probabilistic Analysis of Large Compliant Offshore Structures, $262,167, Department of Energy, 10/1/91-9/30/94.

Workshop on Aging of Energy Production and Distribution Systems, (Dr. M. M. Carroll, Co-Principal Investigator), $55,730, Department of Energy, 10/1/92-6/30/93.

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Third International Conference on Stochastic Structural Dynamics, $18,750, 1/15-18/95, University of Puerto Rico, National Science Foundation, 12/1/94 - 4/31/95.

Stochastic Finite Element Analysis of Contaminant Transport in Ground Water Flows, $15,000, Energy and Environmental Systems Institute, Rice University, 7/1/95-6/30/96.

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Wavelets Based Representation of Stochastic Processes with Evolutionary Spectra, (with G. Failla), Proceedings of the Fifth International Conference on Stochastic Structural Dynamics, Hangzhou, China, May 26-28, 2003 .

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Analysis of nonlinear seismic responses of structural frames via adaptive time-frequency resolution techniques (with N.P. Politis, J.M. Roesset and P. M. Thomaidis) *17th Engineering Mechanics Conference of the ASCE, EM2004* (06/13/04-06/16/04), pp. 1-6

A neural network approach for representing realization of random processes (with M. Beer) 9th ASCE Specialty Conference on Probabilistic Mechanics (07/26/04-07/28/040,pp1-6.

Spectrum estimation of nonstationary stochastic processes using harmonic wavelets (with J. Tezcan) 7th National Congress on Mechanics,Chania , Greece(06/24/04-06/26/04) pp. 1-12

Random vibration of Preisach hysteretic systems (with P. Cacciola, G. Muscolino) Meccanica Stocastica 04,Pantelleria ,Italy (5/31/04-6/1/04) pp.1-17

Numerical wavelets and applications in stochastic dynamics (in Greek). Proceedings of the Academy of Athens (National Academy of Greece),Vl &9(2004),pp. 2009-246.

Stochastic averaging for shape memory alloys (with P. Cacciola). International Conference on Multi-scale Modeling in Mechanics, Messini , Greece (06/23/04-06/28/04): pp. 1-8

Wavelet – concepts and applications (with G. Failla and N. Politis) chapter in *Encyclopedia of Vibrations*,CRC PRESS,Boca Raton,Florida,2005 pp. 1-45.

A method for determining a random response envelope statistics of a class of non-linear isolators (with A. Sofi and M. DiPaola) ENOC-2005, Eindoven, Netherlands, 7-12 August 2005, pp. 1-10.

Neural network bases Monte Carlo simulation of random processes (with M. Beer), ICOSSAR-ROME 2005, June 19-24, 2005.

A method for fatigue analysis of pipelines on topsides of FPSO Systems (with A. Sofi, J. Wang and B. Peng), Proceedings of OMAE2005: 24th International Conference on Offshore Mechanics and Arctic Engineering, June 12-16, 2005, Halkidiki, Greece.

Solutions of Fokker-Planck Equations for Randomly Excited Oscillations with Preisach Model of Hysteresis (with G. Muscolino and P. Cacciola), ICOSSAR-ROME 2005, June 19-24, 2005.

A study-state response of systems with Hysteresis using the Preisach Fomalism (with A. Kontsos and P. Cacciola), 2005 ASME Conference on Design Long Beach, California, September 25-28, 2005.

Vibrational analysis of normal and osteopenia trabecular bone using rapid prototype duplicates (with W. Tawackoli, J. Lemoine, M. Wettergreen, C. Rajapakse, G. Gunaratne, AK. Liebschner),Bone Mechanics Conference - 2005

Parametric study of SPAR combined system with frequency dependent damping (with A. Ghosh, L. Finn, F. Botros and J. Halkyard), Proceedings of OMAE2005: 24th International Conference on Offshore Mechanics and Arctic Engineering, June 12-16, 2005, Halkidiki, Greece.

Reliability assessment via fuzzy set concepts (with M. Beer), ICOSSAR-ROME 2005, June 19-24, 2005.

Robust control manager for aerospace station animal habitat (with P. Posta and N. Bedrossian), AIAA-2005 Conference

A numerical approach for nonlinear systems response spectrum determination via wavelets (with J. Tezcan, Proceedings of the Fifth International Conference on Computation Stochastic Mechanics, June 21-23, 2006, Rodos, Greece; publisher Mill-Press International (2007, pp. 663-670).

Monte Carlo Study of Vibration Isolation Systems Using Linear and Nonlinear Multiple-Tuned Mass Damper Oscillators (with V. Gkaras), Proceedings of the Fifth International Conference on Computation Stochastic Mechanics, June 21-23, 2006, Rodos, Greece; publisher Mill-Press International (2007, pp. 299-306).

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Polymer Nanocomposites Characterization by a Stochastic Multi-Scale Approach (with A. Kontsos, M. Esteva and A. Tamer), Proceedings of the Fifth International Conference on Computation Stochastic Mechanics, June 21-23, 2006, Rodos, Greece; publisher Mill-Press International (2007, pp. 393-400).

Determining Response Envelope Probability Densities for a Class of Nonlinear Oscillators Under Modulated Excitation (with A. Sofi and M. DiPaola), Proceedings of the Fifth International Conference on Computation Stochastic Mechanics, June 21-23, 2006, Rodos, Greece; publisher Mill-Press International (2007, pp. 603-612).

Efficiency Improvement of the Karhunen-Loéve Expansion of Stochastic Processes with Exponential Covariance (with M. Beer and J. Red-Horse), Proceedings of the Fifth International Conference on Computation Stochastic Mechanics, June 21-23, 2006, Rodos, Greece; publisher Mill-Press International (2007, pp. 81-88).

Simulation of Accelorgrams Compatible with the Euro-Code for Seismic Structural Analysis (with A. Giaralis), Proceedings of the International Conference on Earthquake Engineering, June 17-21, 2007, Thessaloniki, Greece (to appear).

CONSULTING ACTIVITIES

PROJECTS

Apparatus for Automatic Making of V-Groove Insulation

ARMA Algorithms for Simulation of Seismic Loads

Aseismic Design of Mechanical and Electrical Equipment

Assessment of Earthquake Design Procedures of Space Shuttle Launching Facilities

Bottom Hole Assembly of Drilling Systems for Oil Wells

Buckling of Marine Risers

Country Club Reverberation

Drilling Bit Dynamics Algorithm - Intellectual Property Aspects

Drilling Rig Vibrations – Safety Aspects

Dynamic Characteristics of a Mechanical Heart Valve

Dynamic Design of Modern Chariots

Dynamic Response of Flexible Structures Due to Blast Loads

Dynamics of Systems with Random Parameters

Earthquake Engineering Research Priorities

Earthquake Resistant Design of Liquid Containers

Fatigue Analysis of All-Terrain Vehicles

Fatigue Analysis of Marine Seismic Data Acquisition Systems

Federal Court Master

Fiber Optics Switch Dynamics

Intellectual Property Issues of Directional Drilling Equipment

Intellectual Property Issues of Drill Bits

Intellectual Property Issues of Scrubbers(Environmental Filters)

Intellectual Property Issues of Concrete Post Tensioning Equipment

Low Cycle Fatigue Analysis of Marine Risers

Marine Cable Dynamics

Modal Analysis of Domes

Multi-body Algorithms for Vehicle Dynamics

Nondestructive Failure Prediction of Generator Intake Vane-Blade

Nonlinear Dynamics of Optical Switches

Nonlinear Oscillations of Drill Strings

Power Spectrum Analysis of Equipment in Nuclear Power Plants

Probabilistic Models of Biological Growth

Qualification Analysis of Aircraft Power Assembly

Random Analysis of Marine Pipelines

Random Vibration Analysis of Space Shuttle Engines

Seismic Qualification of Electric Power Transformers

Seismic Risk Assessment

Seismic Response of Nonlinear Structures

Seismic Fragility Curves

Seismic Spectrum Compatible Accelerogarms Synthesis

Simulation of Probe Landing on Mars

Space Shuttle Dynamics

Spar Offshore Structures

Stability of Radio Station Antenna

Stabilization of a Floating Magnetometer

Statistical Forecasting of Bridge Traffic

Steerable Drilling Tools

Stochastic Dynamics

Stress Qualification of a Marine Engine-Generator Assembly

Structural Dynamics of Tension Leg Platforms

Textbooks and Monographs in Dynamics

Truck Suspension Analysis

Underwater Robots

Vibration Analysis of an Electronic Component Housing Assembly

Whirling of a Turbine Spacer

ORGANIZATIONS

Aker Engineering, Houston, TX

Afton Oaks Civic Association, Houston, TX

Anadrill, Houston, TX

ARCO Oil and Gas Company, Dallas, TX

Bianchi and Lagarde, Attorneys at Law, Houston, TX

BP group, Houston, TX

Brookhaven National Laboratory, Upton, NY

Bryner and Bryner, Attorneys at Law, Alexandria, VA

Cheung, M. and Associates, Irvine, CA

Conoco Inc., Houston, TX

CRC Press, London, United Kingdom

Dow Chemical, Midland, MI

D'Appolonia, Genoa, Italy

Exxon Production Research Company, Houston, TX

Falcon Engineering, Houston, TX

Federal Court, Southern District of Texas

Gardere Wynne Sewell Attorneys at Law, Houston, TX

Hemex, Inc., Austin, TX

Intespace, Ingenierie Tests Environment Spatial, Toulouse, France

Jet Propulsion Laboratory, Pasadena, CA

John Wiley and Sons Ltd., Chichester, England

Lockheed Company, Huntsville, AL

Lockheed Engineering and Management Services, Inc., Houston, TX

Longman Publishing House, London, United Kingdom

Marks and Sally, Architects, Houston, TX

Mathews Law Firm, Houston, TX

McCarty, J. Industries, Inc., Los Angeles, CA

McGraw Hill, New York, NY

Montgomery Consulting Engineering, Inc. Pasadena, CA

NASA Houston, McDonnell Douglas Company, Houston, TX

National Agency for Research and Technology, Athens, Greece

National Center for Earthquake Engineering Research, State University of New York at Buffalo,NY

National Institute of Health, Bethesda, MD

Oceanic Systems, Houston, TX

Office National d'Etudes et de Rechereches Aerospatiales, Chatillon Cedex, France

Optical Switch Corporation, Dallas, TX

Rosenthal & Osha, LLP, Attorneys at Law, Houston, TX

Sandia National Laboratories, Albuquerque, NM

Saunders, Philadelphia, PA

Square D Electrical Equipment, Clearwater, FL

Springer-Verlag, Berlin, Germany

Stewart and Stevenson, Houston, TX

Structural Analysis, Inc., Austin, TX

Syntron Inc., Houston, TX

Takenaka Construction Company, Tokyo, Japan

Tracor Applied Sciences, Inc., Austin, TX

Tracor Manufacturing, Inc., Austin, TX

Ware, Snow, Fogel, Jackson and Greene, Attorneys at Law, Houston, TX

Weidlinger Associates, New York, NY

RICE ACTIVITIES

Seminars Coordinator, Mechanical Engineering Department, 1984-1991.

Seminars Organizer (occasional), Civil Engineering Department, 1984-1991.

Member, Graduate Admissions Committee, Mechanical Engineering Department, 1985-1991.

Brown College Associate and Undergraduate Student Advisor, 1985-1987.

Member, Undergraduate Admissions Committee, 1986.

Member, Graduate Studies Committee, Civil Engineering Department, 1986 -

Recruiter for Students with Early Admission, 1986 -

Member, Dean of Engineering Search Committee, 1986-1988.

Member, Chairman of Civil Engineering Search Committee, 1987-1989.

Chairman, School of Engineering Curriculum Committee, 1989-1992.

Member, Recruitment Committees for several positions in the Department of Civil Engineering and the Department of Mechanical Engineering.

Director, Division of Mechanics and Structures, Energy and Environmental Systems Institute, 1989 –

Member Rice University Committee on President's Lecture Series, 2004 –

Member Promotion and Tenure Committee, 2005-

PROFESSIONAL SOCIETIES SCIENTIFIC ACTIVITIES

Organized/chaired numerous sessions for technical meetings of the divisions of Engineering Mechanics, Geotechnical, Structural, and Aerospace of the American Society of Civil Engineers; and the divisions of Applied Mechanics, Aerospace, Petroleum, Dynamic Systems and Control, and Design Engineering of the American Society of Mechanical Engineers. Organized/chaired a plethora of sessions for international societies/unions such as the International Association for Structural Safety and Reliability, Euromech, International Union of Theoretical and Applied Mechanics, etc.

Since 1991, organizes on a quadrennial basis, a series of conferences on Computational Structural Mechanics; Corfu, Greece (1990); Athens, Greece (1994); and Santorini, Greece (1998), and Kerkyra (2002)

Has served as News Correspondent, Representative to the U.S. National Committee of Theoretical and Applied Mechanics, Secretary and Chair of the Executive Committee, and as Member and Chair of the Advisory Board of the Engineering Mechanics Division of the American Society of Civil Engineers.

Member of the Executive Committee of the Applied Mechanics Division of the American Society of Mechanical Engineers July 1, 1999 – June 30, 2004; Chair 07/01/2003 – 06/30/2004

Member, External Promotion and Tenure Review Committee, of numerous American universities and tenths of major foreign universities

Member of the Advisory Board of the Education Foundation, Spring Independent School District - Member of the Advisory Board of the Education Foundation

Member of the Advisory Board, Texas Sea Grant Program, 06/01/2003 – present