

## **BIOGRAPHICAL DATA**

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**ROSS B. COROTIS, PE, SE, NAE, Dist.M.ASCE, F.EMI, F.SEI**  
**Denver Business Challenge Professor of Engineering Emeritus**  
**College of Engineering and Applied Science Dean Emeritus**  
**University of Colorado, Boulder, Colorado 80309-0428**  
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### **EDUCATION**

\*S.B. Civil Engineering (Economics Minor equivalent) Massachusetts Institute of Technology 1967  
S.M. Civil Engineering Massachusetts Institute of Technology 1968  
Ph.D. Civil Engineering (Structural Mechanics) Massachusetts Institute of Technology 1971  
\*Civil engineering valedictorian

### **ACADEMIC CAREER**

Massachusetts Institute of Technology  
Teaching Assistant in Civil Engineering (full-time), 1969-1971

Northwestern University  
Assistant Professor of Civil Engineering, 1971-1974  
Associate Professor of Civil Engineering, 1975-1979  
Professor of Civil Engineering, 1979-1981

The Johns Hopkins University  
Professor of Civil Engineering/Materials Science and Engineering, 1981-1982  
Willard and Lillian Hackerman Professor of Civil Engineering, 1982-1994  
Founding Chair of Civil Engineering, 1983-1990  
Associate Dean for Academic Affairs, Engineering, 1990-1992  
Associate Dean, Engineering, 1992-1994

The University of Colorado at Boulder  
Dean, College of Engineering and Applied Science, 1994-2001  
Professor, Department of Civil, Environmental and Architectural Engineering, 1994-2022  
Denver Business Challenge Professor of Engineering, 2001-2022

### **PROFESSIONAL REGISTRATION**

Registered Professional Engineer: Illinois, Maryland, Colorado  
Registered Structural Engineer: Illinois

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

American Society of Civil Engineers  
International Association for Structural Safety and Reliability  
Civil Engineering Risk and Reliability Association  
International Association for Bridge Management and Safety

## **HONORARY SOCIETIES**

Sigma Xi  
Tau Beta Pi  
Chi Epsilon

## **HONORS AND AWARDS**

MIT Civil Engineering Valedictorian, 1967  
NSF Graduate Fellowship, 1967-1969  
Northwestern University Technological Institute Teaching Award, 1976-1977  
Northwestern University Student Government Faculty Honor Roll, 1979, 1980  
Northwestern University Civil Engineering Teacher of the Year, 1979  
Member of Four-Person National U.S.-U.S.S.R. Engineer Exchange Delegation, 1979  
Walter L. Huber Civil Engineering Research Prize, ASCE, 1984  
Civil Engineer of the Year, ASCE Maryland Section, 1986  
Engineer of the Year, NSPE Baltimore Engineers Week Council, 1989  
Outstanding Engineering Educator, ASCE Maryland Section, 1992  
Distinguished Engineering Alumnus Award, Special Category, CU-Boulder, 2000  
University of Colorado Multicultural Engineering Program, Certificate of Appreciation, 2000  
University of Colorado Pre-Collegiate Summer Program, Certificate of Appreciation, 2001  
National Academy of Engineering, Elected Member, 2002  
University of Colorado Discovery Learning Center, Dedicated in my name, 2002  
University of Colorado Dept of Civil Engineering, Distinguished Achievement Award, 2003  
International Association for Structural Safety and Reliability, Distinguished Research Prize, 2005  
University of Colorado Dept of Civil Engineering, Special Recognition Award, 2005  
University of Colorado Dept of Civil Engineering, Service Award, 2006  
University of Colorado Dept of Civil Engineering, Favorite Professor Award, 2006, 2007  
University of Colorado Boulder Faculty Assembly Excellence in Teaching Award, 2006  
Jefferson Science Fellow, U.S. Department of State, 2008-2013  
University of Colorado Dept of Civil Engineering, Clarence Eckel Prize, 2010  
ASCE Distinguished Member, elected 2011  
University of Colorado Dept of Civil Engineering, Teaching Award, 2012  
Charter Fellow, Engineering Mechanics Institute of ASCE, elected 2013  
ASCE OPAL, Outstanding Lifetime Achievement in Education Award, 2019  
Fellow, Structural Engineering Institute, ASCE, elected 2021

## **CONSULTING**

Lambe and Whitman, 1970  
Jack E. Leisch and Associates, 1971, 1978  
American Concrete Pipe Association, 1971-1976  
McNeal, Schick and Archibald, Cleveland, Ohio, 1975  
Illinois Institute of Environmental Quality, 1978  
National Bureau of Standards, 1979-  
Illinois Institute of Technology Research Institute, 1979  
Evanston Environmental Association, 1979-1980  
FMC Corporation, 1980-1981  
O'Doherty, Gallagher and Need, 1983  
Paley, Rothman and Cooper, 1986  
Prickett, Jones, Elliott, Kristol and Schnee, 1987  
American Iron and Steel Institute, 1988  
Rogers and Wells, 1990  
O'Doherty, May and Burgoyne, 1992  
Weris and Associates, 2009-2010  
NCHRP (contract to Gongkang Fu E&T Consulting Engineers), 2018

## **EDUCATIONAL SERVICE**

Review of College of Engineering, University of Iowa, April 1999  
Presentation, Southwest Regional Conference, Society of College and University Planners,  
Tucson, Arizona, October 1999  
Presentation, National Conference, Society of College and University Planners,  
Denver, Colorado, July 2000  
Keynote, Project Kaleidoscope Summer Institute, Leadership in the Reform of Science,  
Math, Engineering & Technology, The Reinvention Center of SUNY Stony Brook,  
Keystone, Colorado, July 2000  
Review of School of Civil & Environmental Engineering, Georgia Institute of Technology, 2016

## **PROFESSIONAL COMMITTEES AND ACTIVITIES**

### **International**

Civil Engineering Risk and Reliability Association  
Member, Board of Directors, 1999-2004  
  
International Advisory Committee, The Hong Kong Polytechnic University  
Chair, 2022-  
  
International Association for Bridge Maintenance and Safety  
Scientific Committee, 2002, 2004, 2006, 2010, 2012 Conferences  
  
International Association for Structural Safety and Reliability

Scientific Committee, 1993 Conference, Innsbruck  
Scientific Committee, 1997 Conference, Kyoto  
Chair, Scientific Committee, 2001 Conference, Newport Beach  
Executive Board: Chair 1998-2001, Member 2002-2006  
Advisory Board: Chair, 2004-2006  
International Advisory Committee: 2012-2013

International Council for Building Research, Studies, and Documentation  
CIB Commission W81 Actions on Structures, 1983- 1996  
Triennial Congress Program Committee, 1984-1987

International Federation for Information Processing  
Committee on Reliability and Optimization of Structures, 1989-2006  
Organizing Committee, 1991 Conference, Munich  
Co-Organizer, 1996 Conference, Boulder

International Forum on Engineering Decision Making  
Member, Advisory Council, 2005-2010  
Consortium Member, 2010-

International Journal of Structural Safety  
Associate Editor, 1989-1991  
Editor-in-Chief, 1991-1999  
Editorial Board, 1989-2017  
Guest Editor, 2002

International Journal of Risk Assessment and Management  
Editorial Board, 2004-  
Guest Editor, 2006

International Standards Organization  
U.S. Delegate to ISO 2394, 2011-2015

Probabilistic Engineering Mechanics  
Editorial Board, 2004-

Structure and Infrastructure Engineering  
Editorial Board, 2004-2008

## **National**

American Concrete Institute  
Committee 348, Structural Safety, 1972-1992  
Subcommittee A Chair, 1982-1986;  
Chair, 1986-1988

American National Standards Institute  
Live Loads Committee, 1974-1984 (Chair, 1978-1984)

American Society for Engineering Education

Curtis W. McGraw Research Award Committee, 1998-2000  
Engineering Deans Council  
Public Policy Committee, 1998-2001  
Executive Board, 1998-2001

American Society of Civil Engineers

Minimum Design Loads for Buildings and Other Structures  
Standards Committee, 1985-1997  
Chair of the Live Loads Subcommittee, 1985-1989

Structural Division/Structural Engineering Institute  
Task Committee on Structural Safety, 1973-1974  
Committee on the Safety of Buildings, 1975-1988, 1993-96  
Chair, 1984-1987  
Committee on Practical Reliability Concepts, 1985-1989  
Technical Administrative Committee on Structural Safety and Reliability  
Chair, 1988-1992  
Eighth Annual Structures Congress, Co-Chair, 1990  
Administrative Committee on Research, 1991-1992  
Comm. on Disaster Resilience of Structures, Infrastruct. & Communities, 2012-18

Engineering Mechanics Institute  
Newsletter Editor, 1975-1978  
Committee on Probabilistic Methods, 1974-1985, 1987-1999, 2002-2018  
Control Member, 1983-1985, 1987-1989, 2002-2004  
Vice Chair, 1995-1996, 1998-1999  
Chair, 1996-1998  
Editor, *Journal of Engineering Mechanics*, 2004-2010

Infrastructure Resilience Division  
Founding Member, Risk and Resilience Measurements Committee, Performance  
Objectives Subcommittee, 2015-

Department Heads Council, Elected member, 1989-1990

Specialty Conference on Probabilistic Mechanics & Structural & Geotechnical Reliability  
Chair, Organizing Committee, 1992

Applied Mechanics Reviews, Contributing Reviewer, 1973-1979

Multihazard Mitigation Council of the National Institute of Building Sciences  
Affiliate Member, 2002-

National Academy of Engineering  
Greatest Engineering Achievements Book Committee, 2000  
Planning Meeting on Structural Safety and Reliability, 2002  
Symposium Organizer, Midwest Regional Meeting, April 2003  
Finance and Budget Committee, 2003-2006

Secretary, Civil Engineering Section, 2003-2006  
Nominating Committee, 2004  
Vice Chair, Civil Engineering Section, 2007-2009  
Chair, Civil Engineering Section, 2009-2011  
Symposium Organizer, Midwest Regional Meeting, May 2010

National Research Council (The National Academies of Science, Engineering and Medicine)

Board Appointments

Building Research Board, 1985-1988  
Laboratory Assessment Board, 2009- (Chair 2017-2020)  
Board on Infrastructure and the Constructed Environment, 2012-2019  
Committee on Assessment of NIST Technical Programs, 1999-2014 (Chair, 2009-2014)  
Vice Chair, Panel on Building and Fire Research Laboratory, 2002-2003  
Chair, Panel on Building and Fire Research Laboratory, 2003-2007  
Natural Disasters Roundtable, Steering Committee, 2002-2005  
Study Committee on Resilience of Communities behind Dams and Levees, 2011-2012  
Study Committee on Coastal Flood Risk for the East and Gulf Coasts, 2013-2014  
Study Committee on Flood Risk Insurance in Floodplains, 2014-15  
Study Committee on Innovation in Bridge Construction, 2018-19  
The International Technology Council, 1984-1987  
Intelligence Science and Technology Experts Group (ISTEG), 2015-  
Chair, Study Committee on NIST Capital Facilities, 2021-

National Institute of Standards and Technology

National Construction Safety Team Advisory Committee, Congressional Appointment  
Member, 2017-  
Vice Chair, 2020-2021  
Chair, 2022-

**Chicago**

Acoustical Society of America, Chicago Regional Chapter  
Executive Committee, 1972-1973 (Secretary, 1973-1974)

American Society of Civil Engineers, Illinois Section

Chair, Structural Division, 1974-1975  
Director, 1975-1977  
Goals Committee, 1978

Chicago Committee on High Rise Buildings

Lateral Forces Task Force, 1973-1981

Midwest Acoustics Conference

Arrangements Chair, 1972  
Executive Committee, 1973-1976

**Baltimore**

American Concrete Institute, Maryland Chapter

Founding Director, 1983-1985

American Society of Civil Engineers, Maryland Section

Nominating Committee, 1985

Vice President, 1987-1988

President, 1988-1989

Mayor's Task Force on Construction Management, 1985

**Colorado**

Colorado Department of Economic Development and International Trade, proposal panel, 2014

## RESEARCH ACTIVITIES

Soil-Structure Interaction of Buried Concrete Pipe, ACPA, 1971- 1976, \$568,300, (R.A. Parmelee and R.J. Krizek, project Directors), associate investigator

A Multidimensional Stochastic Model for Flood Prediction, NSF, 1973-1974, \$17,000, project director

Stochastic Modelling of Site Wind Characteristics, NSF, 1975- 1976, \$45,700, project director

Stochastic Analysis of Live Floor Loadings in Buildings, NSF, 1974-1977, \$55,200, project director

Stochastic Modelling of Site Wind Characteristics, ERDA, 1976-1977, \$58,668, project director

Develop a Highway Safety and Traffic Study Program, FHWA, 1976-1978, \$129,544, (D.S. Berry and R.C. Pfefer, project directors), associate investigator

Vibrations Induced by Earthquake: Application to Nuclear Reactor Structural Safety Analysis and Design, AEO of Iran, 1976-1979, \$447,700, (S. Nemat-Nasser, project director), associate investigator

Survey Methodology and Reliability Analysis for Site Wind Characteristics, DOE, 1977-1978, \$39,977, project director

Survey Methodology and Reliability Analysis for Site Wind Characteristics, DOE, 1978-1979, \$73,986, project director

Develop a Highway Safety and Traffic Study Program, FHWA, 1978-1979, \$69,900 (J.L. Schofer, project director), associate investigator

Snow and ice Accumulation at Solar Collector Installations in the Chicago metropolitan Area, NBS, 1979, \$15,000, project director

Lifetime Reliability Analysis in Structural Systems with Nonlinearities, NSF, 1979-1981, \$88,205, project director

Snow Loads on Nuclear Power Plant Structures in Northeastern Illinois, NBS, 1981, \$15,000, project director

Statistical Analysis of Wind Characteristics at Candidate Wind Turbine Sites, Battelle Pacific Northwest Laboratories, 1981-1982, \$49,958, project director

Statistical Duration-Intensity Model of Structural Floor Loads, NSF, 1982-1984, \$131,331, project director

Stochastic Models of Wind Forces on Buildings and Dynamic Response, NBS, 1982-1984, \$19,788, project director



Reliability-Based Limit State Design of Structural Systems with Stochastic Loads, NSF, 1984-1986, \$179,957, project director

Reliability of Structures Subjected to Earthquake Ground Motion, NBS, 1985, \$8,510, project director

Application of Mathematical Programming Concepts to Structural System Reliability, NSF, 1987-1989, \$165,004, project director

Real Costs of Historical Dam Failures, FEMA, 1987-1989, \$91,784 (J. Boland and B. Ellingwood, project directors), faculty associate

Performance-Optimized Reliability Analysis of Structural Systems, NSF, 1988-1990, \$165,138, project director

Estimation of Extreme Probability Distribution Tails: Application to Extreme Wind Speeds, NSF, 1991-1993, \$109,147, project director

Structural System Reliability and Optimization - Incorporating Nonlinear Mechanics in Mathematical Programming Approaches, NSF, 1991-1994, \$109,560, project director

Prediction of Design Wind Speeds by Extreme Value Estimation Procedures, NSF, 1995-1998, \$176,136, project director

Estimation of Structural Systems Reliability under Hurricane Hazard, NSF (R. Balaji, PI), 2003-2004, \$40,000, co-principal investigator

Comprehensive Risk Analysis for Structure Type Selection, CDOT, 2007-2010, \$80,000, project director

Recovery Process and Progress Following the 2009 L'Aquila Earthquake, (A. Liel, PI), 2009-2010, \$39,970, co-principal investigator

Structural Reliability and Sustainable Resilience, NSF, 2011-2014, \$300,000, project director

Development of Risk-Based Decision Methodology for Facility Design, CDOT, 2012-2014, \$99,246, project director

EAGER: Uncertainty Quantification of Structural Systems: Generalized Information Theory, NSF, 2015-2017, \$155,192, project director

Graduate Assistance in Areas of National Need – Engineering Community Resilience, Department of Education, 2015-2018, \$1,190,186, project director

Assembly Live Load Consistency for Buildings: Gateway to Reducing Embedded Energy, The Charles Pankow Foundation, 2022-2023, \$100,000, project director

**Other Funding**

Hopkins Engineering Research Opportunities, GE Foundation, 1991-1994, \$75,000, project director.

## REFEREED JOURNAL PAPERS

"First Passage of Nonstationary Random Processes," (with E.H. Vanmarcke and C.A. Cornell), *Journal of the Engineering Mechanics Division* ASCE, Vol. 98, No. EM2, Proc. Paper 8816, April 1972, pp. 401-414.

"Statistical Analysis of Live Load in Column Design," *Journal of the Structural Division*, ASCE, Vol. 98, No. ST8, August 1972, pp. 1803-1815.

"The Iowa Deflection Formula: An Appraisal," (with R.A. Parmelee), *Highway Research Record*, 413, 1972, pp. 89-101.

"Statistical Analysis of Continuous Data Records," *Transportation Engineering Journal*, ASCE, Vol. 100, No. TE1, February 1974, pp. 195-206.

"Nonlinear Stress-Strain Formulation for Soils," (with M.H. Farzin and R.J. Krizek), *Journal of the Geotechnical Engineering Division*, ASCE, Vol. 100, No. GT9, September 1974, pp. 993-1008.

"Field Performance of Reinforced Concrete Pipe," (with R.J. Krizek and M.H. Farzin), *Transportation Research Record*, 517, 1974, pp. 30-47.

"Analytical and Experimental Evaluation of Modulus of Soil Reactions," (with R.A. Parmelee), *Transportation Research Record*, 518, 1974, pp. 29-38.

"Teaching Through Analogy: Moment Theory in Statics and Statistics," (with G.L. Peterson and M. Wachs), *Mechanical Engineering News*, ASEE, Vol. 11, No. 3, August 1974, pp. 24-29.

"Inverse Method for Determining Approximate Stress-Strain Behavior of Soils," (with M.H. Farzin and R.J. Krizek), *ASTM Journal of Testing and Evaluation*, JTEVA, Vol. 3, No. 1, January 1975, pp. 51-61.

"Time-Dependent Spectral Content of System Response," (with E.H. Vanmarcke), *Journal of the Engineering Mechanics Division*, ASCE, Vol. 101, No. EM5, October 1975, pp. 623-638.

"Response of Structures to Random Wind Forces," (with M.J. O'Rourke and R.A. Parmelee), *Journal of the Structural Division*, ASCE, Vol. 101, No. ST12, December 1975, pp. 2557-2572.

"Statistical Analysis of Constrained Soil Modulus," (with J.H. Salazar Espinosa and R.J. Krizek), *Transportation Research Record* 537, 1975, pp. 59-68.

"Evaluation of Modulus and Poisson's Ratio from Triaxial Test," (with M.H. Farzin and R.J. Krizek), *Transportation Research Record* 537, 1975, pp. 69-80.

"Probabilistic Approach to Prediction of Consolidation Settlement," (with H.H. El-Moursi and R.J. Krizek), *Transportation Research Record* 548, 1975, pp. 47-61.

"Regression Analysis of Soil Compressibility," (with A.S. Azzouz and R.J. Krizek), *Soils and*

*Foundations*, Vol. 16, No. 2, June 1976, pp. 19-30.

"Stochastic Considerations in Thunderstorm Modeling," *Journal of the Hydraulics Division*, ASCE, Vol. 102, No. HY7, July 1976, pp. 865-879.

"Probabilistic Analysis of Predicted and Measured Settlements," (with R.J. Krizek and H.H. El-Moursi), *Canadian Geotechnical Journal*, Vol. XIV, No. 1, February 1977, pp. 17-33.

"Probability Models for Live Load Survey Results," (with V.A. Doshi), *Journal of the Structural Division*, ASCE, Vol. 103, No. ST6, June 1977, pp. 1257-1274.

"Analysis and Measurement of Soil Behavior around Buried Concrete Pipe," (with R.J. Krizek), *ASTM Special Technical Publication 630*, M. Bealey and J.D. Lemons, Editors, 1977, pp. 91-104.

"Oscillator Response to Modulated Random Excitation," (with T.A. Marshall), *Journal of the Engineering Mechanics Division*, ASCE, Vol. 103, No. EM 4, August 1977, pp. 501-513.

"Uncertainty Analysis of Settlement Rate," (with H.H. El-Moursi and R.J. Krizek), *Transportation Research Record* 616, 1977, pp. 81-84.

"Variance Analysis of Wind Characteristics for Energy Conversion," (with A.B. Sigl and M.P. Cohen), *Journal of Applied Meteorology*, Vol. 16, No. 11, November 1977, pp. 1149-1157.

"Soil Stresses and Displacements in a Concrete Pipe Trench Installation," (with T.H. Wenzel and R.J. Krizek), *Transportation Research Record*, 640, pp. 52-58.

"Probability Models of Wind Velocity Magnitude and Persistence," (with A.B. Sigl and J. Klein), *Journal of Solar Energy*, Vol. 20, No. 6, 1978, pp. 483-494.

"Estimate of Soil Compressibility from Standard Penetration Test," (with H.H. El-Moursi and R.J. Krizek), *Geotechnical Engineering*, Vol. 9, 1978, pp. 1-12.

"Inventory Load Survey of a Hospital," (with J.C. Harris), *Journal of the Structural Division*, ASCE, Vol. 104, No. ST12, December 1978, pp. 1859-1868.

"Run Duration Analysis of Surface Wind Speeds for Wind Energy Application," (with A.B. Sigl and D.J. Won), *Journal of Applied Meteorology*, Vol. 18, No. 2, February 1979, pp. 156-166.

"The Stochastic Nature of Building Live Loads," (with V. Jaria), *Journal of the Structural Division*, ASCE, Vol. 105, No. ST3, March 1979, pp. 493-510.

"A Model for the Sum of Independent Gamma Live Loads," (with V. Jaria), *Journal of the Structural Division*, ASCE, Vol. 105, No. ST8, August 1979, pp. 1701-1705.

"Confidence Interval Procedures for Wind Turbine Candidate Sites," *Journal of Solar Energy*, Vol. 24, No. 5, 1980, pp. 427-434.

"A Probability Model for Design Live Loads," (with P. Chalk), *Journal of the Structural Division*, ASCE, Vol. 106, No. ST10, October 1980, pp. 2017-2033.

"Area-Dependent Processes for Structural Live Loads," (with M. Harris and C. Bova), *Journal of the Structural Division*, ASCE, Vol. 107, No. ST5, May 1981, pp. 857-872.

"Simulation of Hourly Wind Speed and Array Wind Power," (with K. Chou), *Journal of Solar Energy*, Vol. 26, No. 3, 1981, pp. 199-212.

"Delphi Methods: Theory and Design Load Application," (with R. Fox and J. Harris), *Journal of the Structural Division*, ASCE, Vol. 107, No. ST6, June 1981, pp. 1095-1105.

"A Comparative Seismic Hazard Study for Azerbaijan Province in Iran," (with B. Rowshandel and S. Nemat-Nasser), *Bulletin of the Seismological Society of America*, Vol. 71, No. 1, February, 1981 pp. 335-362.

"Bayesian Persistence Analysis for Wind Energy," (with H. Rao), *Journal of the Energy Division*, ASCE, Vol. 108, No. EY2, June 1982, pp. 116-127.

"Mean of Autocorrelated Air Quality Measurements," (with C. Hirtzel and J. Quon), *Journal of the Environmental Division*, Vol. 108, No. EE3, June, 1982, pp. 488-501.

"Observations on Structural System Reliability and the Role of Modal Correlations" (with K. Chou and C. McIntosh), *Structural Safety*, 1983, Vol. 1, No. 2, pp. 189-198.

"Estimating the Maximum Value of Autocorrelated Air Quality Measurements," (with C. Hirtzel and J. Quon), *Atmospheric Environment*, Vol. 16, No. 11, 1982, pp. 2603-2608.

"Bayesian Analysis of Regional Wind Energy Potential," (with H. Rao), *Journal of the Engineering Mechanics Division*, ASCE, Vol. 108, No. EM6, December 1982, pp. 1198-1214.

"Generalized Wind Speed Probability Distribution," (with K. Chou), *Journal of the Engineering Mechanics Division*, ASCE, Vol. 109, No. 1, February 1983, pp. 859-874.

"Probabilistic Load Duration Model for Live Loads," (with W. Tsay), *Journal of Structural Engineering*, ASCE, Vol. 109, No. 4, April 1983, pp. 859-874.

"Reliability of Nonlinear Framed Structures," (with T.Y. Kam and E.C. Rossow), *Journal of Structural Engineering*, ASCE, Vol. 109, No. 7, July 1983, pp. 1585-1601.

"Inelastic Tangential Stiffness for 2-D Frames," (with T.Y. Kam and E.C. Rossow), *Journal of Structural Engineering*, ASCE, Vol. 109, No. 11, November 1983, pp. 2685-2697.

"Conditioned Gaussian Probability Density," (with K. Chou), *Journal of Engineering Mechanics*, ASCE, Vol. 110, No. 1, January 1984, pp. 115-119.

- "Nonlinear Response to Sustained Load Processes," (with K. Chou and A. Karr), *Journal of Structural Engineering*, ASCE, Vol. 111, No. 1, January 1985, pp. 142-157.
- "Reliability of Ductile Systems with Random Strengths," (with T. Lin), *Journal of Structural Engineering*, ASCE, Vol. 111, No. 5, June 1985.
- "Probability-Based Design Codes," *Concrete International*, Vol. 7, No. 4, April 1985, pp. 42-49.
- "Stochastic Analysis of Wind Stream and Turbine Power," (with J-J. Lou), *Journal of Solar Energy*, Vol. 35, No. 4, 1985, pp. 297-309.
- "Wood Damage Accumulation by Stochastic Load Models," (with D. Sheehan), *Journal of Structural Engineering*, ASCE, Vol. 112, No. 11, November 1986, pp. 2404-2415.
- "Failure Mode Identification for Structural Frames," (with A. Nafday and J. Cohon), *Journal of Structural Engineering*, ASCE, Vol. 113, No. 7, July 1987, pp. 1415-1432.
- "Reliability of Random Structural Systems and Load Space Reduction," (with M. Soltani), *Journal of Structural Engineering*, ASCE, Vol. 113, No. 10, October 1987, pp. 2145-2159.
- "Near Optimality Analysis for Linear Models," (with A. Nafday and J. Cohon), *Journal of Computing in Civil Engineering*, ASCE, Vol. 2, No. 1, January 1988, pp. 91-95.
- "Reliability Based Code Formulations for Reinforced Concrete Buildings," (with M. Israel and B. Ellingwood) *Journal of Structural Engineering*, ASCE, Vol. 113, No. 10, October 1987, pp. 2235-2252.
- "Multiparametric Limit Analysis of Frames; Part I-Model and Part II-Computations," (with A. Nafday and J. Cohon), *Journal of Engineering Mechanics*, ASCE, Vol. 114, No. 3, March 1988, pp. 377-403.
- "Failure Cost Design of Structural Systems," (with M. Soltani), *Structural Safety*, 1988, Vol. 5, No. 4, pp. 239-252.
- "Structural System Reliability using Linear Programming and Simulation," (with A. Nafday), *Journal of Structural Engineering*, ASCE, Vol. 115, No. 10, October 1989, pp. 2435-2447.
- "Future of Civil Engineering Profession and Role of Education," (with R. Scanlan), *Journal of Professional Issues*, ASCE, Vol. 115, No. 2, April 1989, pp. 117-124.
- "Transfer Function Models for Determining Dynamic Wind Loads on Buildings," (with M. Islam and B. Ellingwood), *Journal of Wind Engineering and Industrial Aerodynamics*, 1990, Vol. 36, pp. 449-458.
- "Application of Mathematical Programming to System Reliability," (with A. Nafday), *Structural Safety*, 1990, Vol. 7, Nos. 2-4, pp. 149-154.
- "Transfer Function Modeling of Dynamic Wind Loads on Buildings," (with M. Islam and B. Ellingwood),

*Journal of Engineering Mechanics*, ASCE, Vol. 116, No. 7, July 1990, pp. 1473-1488.

"Limit State Sensitivity of Structural Frames Subjected to Cyclic Forces," (with T. Wang and B. Ellingwood), *Journal of Structural Engineering*, ASCE, Vol. 116, No. 10, October 1990, pp. 2824-2841.

"Dynamic Response of Tall Buildings to Stochastic Wind Load," (with M. Islam and B. Ellingwood), *Journal of Structural Engineering*, ASCE, Vol. 116, No. 11, November 1990, pp. 2982-3002.

"Load Combinations for Buildings Exposed to Fires," (with B. Ellingwood), *Engineering Journal*, AISC, Vol. 28, No. 1, 1991, pp. 37-44.

"Stochastic Programs for Identifying Critical Structural Collapse Mechanisms," (With J.H. Ellis and J. Zimmerman), *Applied Mathematical Modelling*, Vol. 15, No. 7, July 1991, pp. 367-373.

"Critical Base Excitations of Structural Systems," (with M. Srinivasan and B. Ellingwood), *Journal of Engineering Mechanics*, ASCE, Vol. 117, No. 6, June 1991, pp. 1403-1422.

"Wind-Induced Response of Structurally Asymmetric High-Rise Buildings," (with M. Islam and B. Ellingwood), *Journal of Structural Engineering*, ASCE, Vol. 118, No. 1, January 1992, pp. 207-222.

"Generation of Critical Stochastic Earthquakes," (with M. Srinivasan and B. Ellingwood), *Earthquake Engineering and Structural Dynamics*, Vol. 21, No. 4, 1992, pp. 275-288.

"Collapse Mechanism Identification Using a System-Based Objective," (with J. Zimmerman and J.H. Ellis), *Structural Safety*, Vol. 11, No. 3, 1992, pp. 157-171.

"Structural System Reliability Considerations with Frame Instability," (with J. Zimmerman and J.H. Ellis), *Engineering Structures*, Vol. 14, No. 6, 1992, pp. 371-378.

"Stochastic Optimization Models for Structural Reliability Analysis," (with J. Zimmerman and J.H. Ellis), *Journal of Structural Engineering*, ASCE, Vol. 119, No. 1, January 1993, pp. 223-239.

"Optimization of Structural Frames with Elastic and Plastic Constraints," (with B. Akbora and J.H. Ellis), *Civil Engineering Systems*, Vol. 10, No. 2, 1993, pp. 147-169.

"Assessing the Cost of Dam Failure," (with B. Ellingwood, J. Boland, and N.P. Jones), *Journal of Water Resources Planning and Management*, ASCE, Vol. 119, No. 1, January/February 1993, pp. 64-82.

"Reliability Analysis of Rigid-Plastic Structures by the Static Approach," (with W. Wang and M.R. Ramirez), *Structural Safety*, Vol. 15, No 3, 1994, pp. 209-235.

"Reliability-Based Bridge Design and Life-Cycle Management with Markov Decision Processes," (with S. Tao and J.H. Ellis), *Structural Safety*, Vol. 16, No. 1+2, 1994, pp. 111-132.

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“Selling Life-Cycle Concepts within the Political System,” 3<sup>rd</sup> International Conference on Bridge Maintenance, Safety and Management, 16-19 July 2006, Porto, Portugal.

“Risk Communication with Generalized Uncertainty and Linguistics,” Workshop on Risk Acceptance and Risk Communication, Stanford University, March 2007.

“The Effect of Rice Husk Ash on Mechanical Properties of Concrete under High Temperatures,” (with E. Ou and Y. Xi), ASCE Engineering Mechanics Division Conference, June 2007, Blacksburg, Virginia.

“Sustainable Infrastructure Development for Guizhou Province in Southwest China: A Life Cycle Approach,” (with E. Ou and Y. Xi), *Applications of Statistics and Probability ICASP 10*, July 2007, Tokyo, Japan.

“Risk Issues in the Built Structural Environment,” International Conference on Analysis and Risk Management in Production Activities, October 2007, Porto, Portugal.

“Multiple-Attribute Aspects for Risk Assessment of Natural Hazards,” (with E. Hammel), International Forum on Engineering Decision Making, December 2007, Port Stephens, Australia.

“The Role of Risk Perception in Tradeoffs for Earthquakes and Other Hazards,” (with E. Hammel), 14<sup>th</sup> World Conference on Earthquake Engineering, October 2008, Beijing, China.

“Political Issues for Sustainable Hazards Policy,” International Forum on Engineering Decision Making, May 2009, Hakone, Japan.

“Variability of Deformation Demand with Ground Motion Intensity,” (with C. Cantagallo, G. Camata and E. Spacone), 6<sup>th</sup> Computational Stochastic Mechanics Conference, June 2010, Rhodes, Greece.

“Practical Bridge Management Investment Strategies: A Life Cycle Approach Illustrated for Paris,” (with G. Vacheyroux), 5<sup>th</sup> International Conference on Bridge Maintenance, Safety and Management, July 2010, Philadelphia.

“A Systems Approach to Assessing the Sustainability of the Grand Canal of China,” (with N. Tsung, P. Chinowsky and B. Amadei), Proceedings, 5<sup>th</sup> International Conference on Bridge Maintenance, Safety and Management, July 2010, Philadelphia, pp 1269-1276.

“Practical Decision Theory Considerations for Community Hazard Reduction,” International Forum on Engineering Decision Making, December 2010, St. Gallen, Switzerland.

“The Relationship between Hazards Vulnerability and Stage of Economic Development in Haiti and Chile,” (with Lan Nguyen), ASCE International Conference on Vulnerability and Risk Analysis and Management (ICVRAM), April 2011, Maryland.

“Conceptual and Analytical Differences between Resiliency and Reliability for Seismic Hazards,” ASCE Structures Congress, April 2011, Las Vegas.

“Political Pitfalls in Hazards Planning,” *Applications of Statistics and Probability*, ICASP 11, August 2011, Zurich, Switzerland.

“The Role of Uncertainty in the Political Process for Risk Investment Decisions,” (with H. Bonstrom and K. Porter), *Applications of Statistics and Probability*, ICASP 11, August 2011, Zurich, Switzerland.

“Rebuilding L’Aquila following the 2009 Earthquake: Priorities and Perspectives,” (with A.B. Liel, J. Sutton, G. Camata, E. Spacone and R. Bricker-Ford), ICASP 11, August 2011, Zurich, Switzerland.

“Structural Reliability and Sustainable Resilience,” (with H. Bonstrom), ASCE Structures Congress, March 2012, Chicago.

“Overcoming Public and Political Challenges for Natural Hazard Risk Investment Decisions,” (with H. Bonstrom and K. Porter), Asian Pacific Symposium on Structural Reliability and its Applications, May 2012, Singapore.

“Case Study of Interconnected Urban Infrastructure Vulnerability to Hazards,” (with A. Rein) Asian Pacific Symposium on Structural Reliability and its Applications, May 2012, Singapore.

“Reliability Challenges of Confined Masonry,” (with L. Nguyen and G. Camata), ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, June 2012, Notre Dame.

“Seismic Demand Uncertainty Provided by Ground Motion Intensity Measure,” (with C. Cantagallo, G. Camata and E. Spacone), World Conference on Earthquake Engineering, September 2012, Lisbon.

“Robustness versus Resilience: Investments in Infrastructure Systems,” ASCE ATC+SEI Advances in Hurricane Engineering Conference, October 2012, Miami.

“Regional Hazard Damage Estimation Using System Reliability,” (with H. Bonstrom), ASCE Structures Congress, May 2013, Pittsburgh.

“A Systems Reliability Approach to Portfolio Damage Assessment,” (with H. Bonstrom), 11<sup>th</sup> International Conference on Structural Safety and Reliability, June 2013, New York.

“Uncertainty Characterization for Structural Systems,” (with E. Ullmer), 11<sup>th</sup> International Conference on Structural Safety and Reliability, June 2013, New York.

“Risk Perception of Natural Hazards: Effective Communication of U.S. Regional Consequences and Risks,” (with D. Oliver), 11<sup>th</sup> International Conference on Structural Safety and Reliability, June 2013, New York.

“Finite Element Analysis Model and Future uses for Confined Masonry,” (with L. Nguyen and G. Camata), 11<sup>th</sup> International Conference on Structural Safety and Reliability, June 2013, New York.

“Uncertainty Characterization for Decisions in Engineering,” (with Emily Elwood), ASCE Engineering Mechanics Institute Conference, August 2013, Evanston.

“Assessment of Topographic Site-Effects Using Recorded Ground Motions. Application to the E-ELT Telescope Site,” (with Cristina Cantagallo, Guido Camata, Enrico Spacone, Paolo Ghiretti and Franz Koch), 7<sup>th</sup> Computational Stochastic Mechanics Conference, June 2014, Santorini, Greece.

“Extension of Form-Based Reliability to Building Seismic Loss Estimation and Portfolio Resilience,” Tenth U.S. National Conference on Earthquake Engineering, July 21-25, 2014, Anchorage, Alaska.

“Reliability.” Ethics, Science, Technology, and Engineering: A Global Resource. Ed. J. Britt Holbrook. 2nd ed. Vol. 3. Farmington Hills, MI: Macmillan Reference USA, 2015. 580-584. Gale Virtual Reference Library. Web. 19 Sept. 2014.

“Uncertainty Theories, Overview,” (with E. Elwood). *Encyclopedia of Earthquake Engineering*, M. Beer et al, Eds, Springer, 2015.

“Resilience: Communities are More than a Portfolio of Buildings,” ASCE Structures Congress, May 2015, Portland, Oregon

“Damage Indexes and Stiffness Degradation for Confined Masonry Shear Wall Structures,” (with Lan Nguyen and Guido Camata), 12<sup>th</sup> North American Masonry Conference, May 2015, Denver, Colorado

“A Clustering Approach to Identification of Seismic Building Damage Patterns for Concrete Structures,” (with Emily Elwood), ICASP12, July 2015, Vancouver, Canada.

“Preliminary Extension of First Order Reliability Methods for Combined Seismic and Wind Hazard Loss Estimation for a Portfolio of Buildings,” (with Holly Bonstrom), ICASP12, July 2015, Vancouver, Canada.

“Uncertainty Quantification of Seismic Structural Systems: The Role of Generalized Information Theory,” 16<sup>th</sup> World Conference on Earthquake Engineering, January 2017, Santiago, Chile.

“Multiple Hazards and Social Vulnerability for the Denver Region,” (with Alena Rein Starrett), Proceedings, *ASCE Structures Congress 2017: Buildings and Special Structures*, J.G. Soules, Ed, April 2017, Denver, Colorado.

“Communicating Community Infrastructure Risks,” 12<sup>th</sup> International Conference on Structural Safety and Reliability, August 2017, Vienna.

“Planning for Community Resilience under Climate Uncertainty,” *Interdisciplinary Issues Related to Climate Change and its Impacts*, Colleen Murphy, Paolo Gardoni and Robert McKim, Eds., Springer, 2018, Cham, Switzerland.

“System Reliability and Combinatorial Analysis for Probabilistic Assessment of Dependent Failures in Systems and Portfolios,” (with Holly Janowicz, Daniel Straub and Karl Breitung), 7<sup>th</sup> International Conference on Computational Stochastic Mechanics, Paros, Greece, June 2018.

“Belief and Basic Evidence Theory for Combining Expert Seismic Risk Assessments,” (with Wendy Ballent and Cristina Torres-Machi), 11<sup>th</sup> U.S. National Conference on Earthquake Engineering, Los Angeles, CA, June 2018.

“Engineering’s Role in Policy Decision-Making for Natural Hazards and Community Resilience,” 2<sup>nd</sup> International Conference on Natural Hazards & Infrastructure, ICONHIC2019, Chania, Greece, June 2019.

“Community Resiliency Infrastructure and Sustainability Protocol,” (with Craig Davis and Keith Porter), ASCE Lifelines Conference, February 2022, Los Angeles.

“Considerations for the Development of Evidence Theory Applications,” (with William Seites-Rundlett and Cristina Torres-Machi), ICASP 14, July 2023, Dublin Ireland.

## **DISSERTATIONS SUPERVISED**

A Bayesian Approach to Soils Engineering Problems,  
by J. Neil Kay (with R.J. Krizek), 1971

Response of Multistory Buildings to Random Wind Forces,  
by Michael J. O'Rourke (with R.A. Parmelee), 1972

Nonlinear Soil Behavior and its Effects on Soil-Structure Interaction,  
by M.H. Farzin (with R.J. Krizek), 1973

Probabilistic Approach to One-Dimensional Consolidation Settlement,  
by Houssam H. El-Moursi (with R.J. Krizek), 1975

A Study of the Stochastic Nature of Building Live Loads,  
by Victor Jaria, 1978

Stochastic Analysis of Wind Characteristics for Energy Conversion,  
by Arden B. Sigl, 1978

Application of Bayesian Analysis for Wind Energy Site Evaluation,  
by Harish G. Rao, 1981

Reliability of Framed Structures Subject to Nonlinear Behavior,  
by Tai-Yan Kam (with E.C. Rossow), 1982

Stochastic Analysis of Wind Characteristics at Wind Energy Conversion System Sites,  
by Jiann-Jong Lou, 1982

Stochastic Load Processes with Nonlinear Structural Response,  
by Karen C. Chou, 1983

Load Space Formulation of Reliability for Nonlinear Random Structural Systems,  
by Tzyy Shan Lin, 1985

Reliability of Random Structural Systems and Failure Cost Design,  
by Mehrdad Soltani, 1986

Extremum Methods of Structural Analysis for System Reliability Assessment,  
by Avinash M. Nafday, 1987

Modal Coupling and Wind-Induced Vibration of Tall Buildings,  
by M. Saiful Islam (with B. Ellingwood), 1988

Load Path Dependence in Structural Frames Subjected to Fluctuating Forces,  
by Tsau Y. Wang (with B. Ellingwood), 1989

- Critical Excitations of Structural Systems,  
by Mukund Srinivasan (with B. Ellingwood), 1989
- Analysis of Structural System Reliability with Stochastic Programming,  
by James J. Zimmerman (with J.H. Ellis), 1991
- Reliability-Based Structural Optimization with Markov Decision Processes,  
by Zongwei Tao (with J.H. Ellis), 1993
- Structural System Reliability: A Study of Several Important Issues,  
by Wei Wang (with M. Ramirez), 1993
- Partially Observable Markov Decision Process Models for Structural Management Policies and Design,  
by Mingxiang Jiang (with J.H. Ellis), 1995
- Nonlinear Analysis of Frame Structures by Pseudo Distortions,  
by Prafulla Makode (with M. Ramirez), 1995
- Sustainable Infrastructure Materials: A Life Cycle Assessment Approach,  
by Chih-Sheng Ou (with Yunping Xi), 2007
- A Systems Approach to Assessing the Sustainability of the Grand Canal of China,  
by Nilo Tsung (with Bernard Amadei and Paul Chinowsky), 2010
- A First-Order Reliability Approach to Building Portfolio Loss Estimation and Mitigation Prioritization  
by Holly Bonstrom, 2013
- Confined Masonry: Theoretical Fundamentals, Experimental Test, Finite Element Models, & Future Uses  
By Lan T. Nguyen, 2014
- Fuzzy Classification and Fuzzy Pattern Recognition of Seismic Damage to Concrete Structures  
By Emily D. Elwood, 2015
- Incorporating Uncertainty and Social Influences into Transportation System Decision Making  
By William Arthur Seites-Rundlett (with Cristina Torres-Machi), 2022



## **M.S. THESES SUPERVISED**

- Statistical Analysis of Soil Compressibility,  
by Jose H. Salazar Espinosa (with R.J. Krizek), 1973
- Statistical Analyses of Index Properties and Compressibility of Soils,  
by Amr S. Azzouz (with R.J. Krizek), 1974
- Approximate Dynamic Analysis of an offshore Tower,  
by Cheryl H. Martin, 1975
- Analysis of Hydrologic Factors Influencing Flood Levels,  
by David R. Descoteaux, 1975
- Characteristics of Multiple Vehicle Entry into a Single Gap at Stop Sign Locations,  
by Craig E. Bauer (with D.S. Berry), 1975
- Probability Models for Live Loads in Buildings,  
by Viresh A. Doshi, 1976
- Analysis of Wind Characteristics for Energy Conversion Sites,  
by Michael P. Cohen, 1976
- An Evaluation of Freeway Merging Safety As Influenced by Ramp Metering Control,  
by Bart T. Cima (with D.S. Berry), 1976
- The Response of Simple Systems to Nonstationary Excitation,  
by Thomas A. Marshall, 1977
- Statistical Models for Wind Energy Site Surveys,  
by Joel Klein, 1978
- A Probabilistic Determination of Design Live Loads for Buildings,  
by Philip L. Chalk, 1979
- Survey Methodology and Reliability Analysis for Site Wind Characteristics,  
by Danny J. Won, 1979
- Simulation of Wind Speed and Array Power at Wind Energy Conversion Sites,  
by Karen C. Chou, 1980
- A Probabilistic Basis for Live Load Reduction in Office Buildings,  
by Carl J. Bova, 1980
- A Probabilistic Basis for Area-Dependent Design Live Loads,  
by Michael E. Harris, 1980

- Probabilistic Load Duration Model for Design Live Loads,  
by Wen-Yang Tsay, 1981
- Reliability Analysis of Framed Structures Using the Probabilistic Network Evaluation Technique,  
by Christine McIntosh, 1982
- Probabilistic Basis of Partial Resistance Factors for Use in Concrete Design,  
by Morris S. Israel (with B.R. Ellingwood), 1986
- Computational Methods in Optimization of Structural Frames under Multiple Stress Constraints,  
by B. Aydin Akbora, 1990
- Alternative Methodology for Time Valuation Associated with Highway User Costs,  
by A. Trzcinski, 2006
- A Multi-Attribute Framework for Risk Analysis of Natural Hazards,  
by Evan Hammel, 2007
- Overcoming Public and Political Challenges for Natural Hazard Risk Investment Decisions  
by Holly Bonstrom (with Keith Porter), 2011
- The Expected and Extreme Losses due to Natural Hazards  
by Jennifer Jones, 2011
- Perception of Risk of Natural Hazards  
by Maura Hurley, 2011
- The Relationship between Seismic Hazard Vulnerability and Stage of Economic Development:  
Illustration for Three Countries  
by Lan Nguyen, 2011
- Identifying Infrastructure Interdependencies and social vulnerabilities in Denver, Colorado through  
Examining the Impact of Natural and Man-Made Stressors Applicable to the Region  
by Alena Rein, 2011
- Risk Perception and Effective Communication of Consequences for US Natural Hazards  
by Daniel Oliver, 2013
- Risk Analysis of Mast-Arm Structures  
by Abhishek Paul, 2013
- Development and Illustration of a Risk-Based Framework for Use by the Colorado Department of  
Transportation's Built Facilities  
by Yolanda Chia-Yi Lin (with Abbie Liel), 2014
- Multi-Hazard Mapping of the United States  
by Daniel J. Hahn, 2015

Dempster-Shafer Theory Applications in Structural Damage Assessment and Social Vulnerability  
Ranking

By Wendy J. Ballent, 2018

## **INVITED SEMINARS**

"First Passage Considerations of Nonstationary Stochastic Processes," Theoretical and Applied Mechanics Colloquium, Northwestern University, 1971

"Floor Live Loads," Structural Design Loads Institute, University of Wisconsin, 1972, 1976, 1979, 1981

"Soil Culvert Interaction of Buried Concrete Pipe," Federally Coordinated Research Review Conference, San Francisco, 1973

"Stochastic Modelling of Site Wind Characteristics," ERDA/NSF Wind Energy Conversion Systems Workshop, Washington, 1975

"Wind Energy Conversion Systems," ASCE Illinois Section Meeting, Chicago, 1975

"Stochastic Considerations in Site Survey Design," ERDA Wind Energy Conversion systems Workshop and Conference, Washington, 1977

"Structural Reliability: Designing for Uncertainty," Civil Engineering Seminar, Illinois Institute of Technology, 1977

"Probability and the Design of Buildings," Center for Statistics and Probability Seminar, Northwestern University, 1977

"Designing for Natural Hazards," Structural Use of Wood in Adverse Environments, Vancouver, Canada, 1978

"Structural Reliability: Designing for Uncertainty," Structural Engineering Seminar, Cornell University, 1978

"Live Loads - Far From Dead," ASCE Illinois Section Meeting, Chicago, 1979

"Structural Reliability - Applications and Implications," Materials Engineering Seminar, University of Illinois at Chicago Circle, 1980

"Random Process Treatment of Structural Loads," Civil Engineering Seminar, Vanderbilt University, 1981

"Load Combinations," Design Loads for Structures, University of Wisconsin, 1981

"Structural Reliability and Live Loads," University of Delaware, 1982

"Wind Energy," ASCE National Capital Section, 1983

"Random Processes in Structural Engineering," University of Delaware, 1983

"Structural Live Load Modeling and System Reliability," Virginia Polytechnic Institute, 1984

"Stochastic Structures - Why Your Building Will Fall Down," ASCE Maryland Section, 1984

"Structural Load Modeling and System Reliability," Cairo University, 1985

"Structural Reliability - A Systems Approach," Syracuse University, 1985

"Reliability Considerations of Redundant Structural Systems," Rice University, 1987

"Structural Systems Reliability and Optimization," Northwestern University & Catholic University, 1989

"Engineering Education and the Role of the Professional," Engineering Society of Baltimore, 1990

"Several Subtleties of Structural System Safety," University of Notre Dame, 1993

"Some Reliability and Optimization Concerns with Structural Systems," Northwestern University, 1995

"Integrated Teaching and Learning; A New Learning Philosophy," Boulder Rotary Club, 1996

"Structural Optimization: A Lifetime Project," International Federation for Information Processing Conference on Safety and Reliability of Structures, Boulder, Colorado, 1996

"Structural Reliability: Building Safety or Job Security," 7th Specialty Conference on Probabilistic Mechanics and Structural Reliability, ASCE, Worcester, Massachusetts, 1996

"From Renaissance to Reliability," 8<sup>th</sup> International Conference on Structural Safety and Reliability, Newport Beach, California, 2001

"Risk: Society's or Yours," NSF Earthquake Engineering Research Centers, Summer Research Experience for Undergraduates, Annual Conference, 2002.

"Structural Safety; Is There a Role for the Engineer?" University of Notre Dame, South Bend, IN, 2003

"Safety of Structures; Is Society Willing to Listen?" Northwestern University, Evanston, IL, 2003

"Risk Issues in the Built Environment" Florida Atlantic University, Pennsylvania State University, Texas Tech University, The Johns Hopkins University: 2007

"The Art of Communicating Effectively with Deans and Other Demons," ASCE National Civil Engineering Department Heads Meeting, 2007

"Risk is a Four-Letter Word: Multi-Attribute Aspects for Natural Hazards, U.S. Army Corps of Engineers, 2008

"Natural Hazards – Managing Societal Risk," University of Rome, University of Naples, University of

Pescara, October 2009.

“Risk, Reliability and Life Cycle Engineering,” Tongji University, Shanghai, China, June 2011.

“Societal and Political Issues in Addressing Infrastructure Risk,” University of Nebraska, October 2011

“Natural Hazard Risk: Public Perceptions and Political Perversities,” Lehigh University, Bethlehem, Pennsylvania, February 2012.

“Public Perception and Political Challenge of Natural Hazard Risk in the Built Environment,” April 2013, University of Minnesota.

“Public Perception and Political Challenge of Natural Hazard Risk in the Built Environment,” (with Holly Bonstrom, Lan Nguyen and Keith Porter), May 2013, University of Delaware.

“Reliability and Uncertainty for Seismic and Wind Assessment,” December 2014, La Sapienza, University of Rome, Italy.

“Public Perception and Political Challenges of Natural Hazard Risk in the Built Environment,” February 2015, Auburn University.

“Structural Reliability and Uncertainty Analysis for Seismic Assessment,” February 2015, Auburn University.

“Structural Reliability, Uncertainty Analysis, and Hazard Mapping,” November 2016, Auburn University.

“Seismic Loss Analysis for Building Portfolios and Risk Communication Strategies,” August 2017, Pontifical University Catholic of Peru, Lima.

“Issues of Risk and Risk Perception for Engineering Professionals Addressing Natural hazards,” October 2017, Illinois Institute of Technology.

“Structural Reliability and Uncertainty Analysis for Seismic Assessment,” Politechnika Krakowska, Warsaw university of Technology, and Uniwersytet Technologiczno Przyrodniczy, Poland, June 2018.

“Conceptual and Analytical Differences between Resiliency and Reliability for Natural Hazards,” Polish Military Academy, Warsaw, Poland, June 2018.

“Engineering Risk Analysis and Decision for Communities Facing Natural Hazards,” November 2018, Texas A&M University, College Station.

“Selling Community Sustainability among Political Pitfalls,” March 2020, University of Illinois, Urbana-Champaign.

“Evidence Theory: What, Why and How in Engineering for Natural Hazards,” March 2022, Columbia University, New York.

## PAPERS PRESENTED AT PROFESSIONAL MEETINGS

(Only those not listed under conference proceedings)

"First Passage of Nonstationary Random Processes," (with E.H. Vanmarcke and C.A. Cornell), ASCE, National Structural Engineering Meeting, 1972

"The Iowa Deflection Formula: An Appraisal," (with R.A. Parmelee), Highway Research Board Annual Meeting, 1973

"A Study of the Analytical and Experimental Evaluation of E'," (with R.A. Parmelee), Highway Research Board Annual Meeting, 1974

"On the Time-Dependent Frequency Content of Oscillator Response," (with R.A. Parmelee), ASCE, Specialty Conference on Probabilistic Methods in Engineering, 1974

"Probabilistic Approach to Prediction to Consolidation Settlement," (with H.H. El-Mouri and R.J. Krizek), Transportation Research Board Annual Meeting, 1975

"Time-Dependent Oscillator Response to Separable Excitation," (with T.A. Marshall), ASCE, National Structural Engineering Meeting, 1975

"Approximate Dynamic Modelling of an Offshore Tower," (with C.H. Martin), ASCE, National Structural Engineering Meeting, 1975

"Instrumentation and Testing of Concrete Pipe," (with R.A. Parmelee), ASCE, National Structural Engineering Meeting, 1975

"Uncertainty Analysis of Settlement Rate," (with H.H. El-Mouri and R.J. Krizek), Transportation Research Board Annual Meeting, 1976

"Soil Stresses and Displacements in a Concrete Pipe Trench Installation," (with T.H. Wenzel and R.J. Krizek), Transportation Research Board Annual Meeting, 1976

"Analysis and Measurement of Soil Behavior around Buried Concrete Pipe," (with R.J. Krizek), American Society for Testing and Materials Symposium on Concrete Pipe and the Soil-Structure System, 1976

"Oscillator Response to Modulated Random Excitation," (with T.A. Marshall), ASCE, Engineering Mechanics Division Specialty Conference, 1976

"A Probabilistic Basis for Wind Power Siting Surveys," Third U.S. National Conference on Wind Engineering Research, 1978

"Updating Design Live Loads for the ANSI Standards," ASCE National Convention, 1980

"Effect of Solar Collectors on Snow and Ice Accumulation," ASCE International Convention, 1981

"Reliability of Structural Systems with Nonlinearities," (with E.C. Rossow), ASCE, Engineering Mechanics Division and ASME Specialty Conference, 1981

"Application of Bayesian Analysis to Site Wind Characterization," (with H.G. Rao), ASCE Convention, 1981

"Live Loads: A Stochastic Process Approach," Council on Tall Buildings and Urban Habitat, 1982"

"Live Loads - Far from Dead," ASCE Convention, 1982

"Reliability of Framed Structures Subject to Nonlinear Behavior," ASCE Convention, 1982

"Prediction of Generated Wind Turbine Power with High Frequency Wind Speed Series," International Time Series Meeting, 1983

"Structural System Reliability by Load Modeling," (with T.S. Lin), ASCE Annual Convention, October 1984, San Francisco

"Probability-Based Seismic Source Models," (with S. Nemat-Nasser and B. Rowshandel), ASCE Spring Convention, April 1986, Seattle

"Systems Reliability by Mathematical Programming Techniques," (with A. Nafday and J. Cohon), ASCE Structures Congress, September 1986, New Orleans

"Code Provisions for Safety of Concrete Structures," (with A. Scanlon), ACI Convention, November 1990, Philadelphia

"Optimization of Structural Frames under Multiple Stress Constraints," (with A. Akbora and J. Ellis), ASCE Structures Congress, May 1991, Indianapolis

"Probabilistic Considerations in the Evolution of the American Concrete Institute Building Code," Society for Risk Analysis Annual Meeting, Invited Paper, December 1991, Baltimore

"Stochastic Critical Excitations," (with M. Srinivasan and B. Ellingwood), ASCE Specialty Conference on Probabilistic Mechanics and Structural & Geotechnical Reliability, July 1992, Denver

"Application of Extreme Value Theory to Structural System Reliability Analysis," (with W. Wang and M. Ramirez), Conference on Extreme Value Theory and its Applications, NIST, May 1993, Gaithersburg

"Sensitivity of Nonlinear Structures at Collapse," (with W. Wang and M. Ramirez), U.S. National Congress of Applied Mechanics, June 1994, Seattle

"Reliability and Optimization of Frame Structures using the Pseudo Distortion Method," (with P. Makode and M. Ramirez), IFIP, April 1996, Boulder



“Societal Tradeoffs of Safety and Cost: The Role of Design Codes and Sustainability,” US-New Zealand Workshop on Civil Infrastructure Systems, October 2001, Christchurch, New Zealand

“The Political Realities of Life Cycle Costing,” First International Conference on Bridge Maintenance, Safety and Management, July 2002, Barcelona, Spain

“Determining Reliable Design Loads for Natural Phenomena,” (with A. Dougherty). ASCE Structures Congress, April 2002, Denver, Colorado

“Cost, Performance and Safety; Are Metrics Valid?” ASCE Structures Congress, May 2003, Seattle, Washington

“Risks in the Built Environment: Who Decides?” First World Congress on Risk Analysis, June 2003, Brussels, Belgium

“Political Management Issues and Societal Risk Trade-off for the Built Environment,” PSAM7/ESREL’04, 14-18 June 2004, Berlin, Germany

“Structural Safety: Soliloquy, Soporification or Social Sensibility?” C. Allin Cornell Symposium, Stanford University, October 2005, Palo Alto, California

“Is Structural Reliability a Professional Responsibility?” American Concrete Institute Fall Convention, November 2006, Denver, Colorado.

“Ethical Implications in Natural Disaster Risk,” Engineering Ethics in a Globalized World Workshop, October 2011, Doha, Qatar.

“Societal and Political Issues in Addressing Infrastructure Risk,” December 2011, University of Nebraska, Lincoln.

“Concepts of Safety and Ethical Implications,” Engineering Ethics in a Globalized World Workshop, October 2012, sponsored by the National Academy of Engineering at the University of Illinois, Urbana.

“Sensitivity of Structural Performance to Multiple Hazards,” (with H. Bonstrom), ASCE Structures Congress, May 2013, Pittsburgh.

“A First-Order Approach to Quantitatively Evaluate and Improve Building Portfolio Resilience,” (with Holly Bonstrom), International Forum on Engineering Decision Making, December 2013, Port Stephens, Australia.

“Reliability Methods for Risk Management and Resilience on the Community Scale,” (with H. Bonstrom), ASCE Structures Congress, April 2014, Boston.

“Multi-Hazard Consequence Mapping for the United States,” (with Dan Hahn and Emmanuelle Viaud), International Forum on Engineering Decision Making, May 2015, Kyoto, Japan.

“Multiple Hazards and Social Vulnerability for the Denver Region,” (with Alena Rein Starrett), International Forum on Engineering Decision Making, December 2016, Stoos, Switzerland.

“Generalized Information Theory for Engineering and Sociological Risk,” (with Wendy Ballent and Cristina Torres-Machi), International Forum on Engineering Decision Making, May 2018, Lake Louise.

“Generalized Uncertainty for Combining engineering and Social Aspects of Resilience,” ASCE Structures Congress, April 2018, Fort Worth.

“Political Reality (and Pitfalls),” Panel of Resilience of Structures and Infrastructure Systems, ASCE Structures Congress, April 2018, Fort Worth.

“Evidence Theory: What, Why and How in Engineering for Natural Hazards” (with William Seites-Rundlett and Cristina Torres-Machi), June 2022, ASCE Engineering Mechanics Institute Annual Conference, Baltimore.