Ronald D. Ziemian, PhD, PE

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Brief Bio: In addition to authoring over 100 papers on the design and analysis of steel and aluminum structures, Ronald D. Ziemian is co-author of the textbook *Matrix Structural Analysis* (Wiley, 2000), the developer of the educational analysis software MASTAN2, and the editor for the 6th edition of the *Guide to Stability Design Criteria for Metal Structures* (Wiley, 2010). He is the former Co-Editor in Chief of Elsevier's *Journal of Constructional Steel Research*, and as a registered professional engineer currently serves as the technical consultant to the Aluminum Association. Ron is active in developing building codes, as evidenced by his contributions as a member of AISC's, AISI's, and AA's specification committees. He chairs AISC's TC3 - *Loads, Analysis and Stability*, and was the former chair of the Structural Stability Research Council and the AISC Task Group on Inelastic Analysis and Design. On over 15 occasions, Ron has been the keynote speaker at conferences throughout the world, including the U.S., China, Brazil, Lithuania, India, Portugal, Hong Kong, Czech Republic, and Malaysia. Ron has received several national awards, including the ASCE Norman Medal, the AISC Special Achievement Award, the ASCE Shortridge Hardesty Award, the AISC TR Higgins Award, the SSRC Lynn S. Beedle Award, and an AISC Lifetime Achievement Award, for his contributions to the profession related to the stability analysis and design of metal structures. Known for his ability to incorporate his scholarship into the classroom, Ron has also been the recipient of Bucknell University's Presidential Award for Teaching Excellence and a Presidential Professorship.

Education

Cornell University
Ph.D., Civil and Environmental Engineering; Structural Engineering (Aug. 1990)
Minor: Theoretical & Applied Mechanics
"Advanced Methods of Inelastic Analysis in the Limit States Design of Steel Structures"
Advisor: Professor William McGuire (deceased)

Cornell University
M. Eng., Civil and Environmental Engineering; Structural Engineering (1985)

Cornell University
B.S., Civil and Environmental Engineering; Structural Engineering (1984)

Professional Experience

Bucknell University, Department of Civil and Environmental Engineering

Professor	09/2003 to present
Associate Professor	09/1997-08/2003
Assistant Professor	07/1991-08/1997

Rack Manufacturers Institute, Charlotte, NC — 06/2024 to present
Technical consultant

The Aluminum Association, Arlington, VA — 07/2021 to present
Technical consultant

Bucknell University, College of Engineering 07/2016 – 07/2019
Associate Dean of Faculty and Research Initiatives

University of Sydney, School of Civil Engineering (Australia) Spring 2014
Visiting Professor

University of Nottingham, School of Civil Engineering (England) Fall 2001
Visiting Professor

Cornell University, School of Civil and Environmental Engineering 08/1990-06/1991
Lecturer

Stone and Webster Engineering Corporation, Boston, Massachusetts 1985-87
Structural Engineer

Conservatek, Inc., Conroe, Texas 1982-83
Engineer in Training

Research Interests

The overarching goal of my research is the development of improved stability design criteria based on a better understanding of the behavior of metal structures. My work focuses on the application of advanced methods of computational nonlinear analysis in studying the strength and stability of metal structures.

Leadership Experience

Academic Administrative Leadership

Associate Dean of Faculty and Research Initiatives
College of Engineering, Bucknell University (2016-2019)
As the Associate Dean of the College of Engineering, I have represented the college on several campus steering committees focused on university-wide initiatives and policies, including a) evaluation of the faculty merit system, b) development of a new system for student course evaluations, c) analysis of metrics placed on student transcripts for potential use in awarding Latin honors, and d) development of a new policy document for student withdrawals and leaves of absence. I have led or am leading several college initiatives, including the evaluation and restructuring of external grants reporting, professional travel funding, and staffing needs and availability. I am the College representative overseeing the design and current construction of Academic East, a 78,000-square-foot facility to be shared by the College of Engineering and the Department of Education. During the 2017-18 academic year, I additionally served as the Acting Associate Dean of Students, responsible for all matters that impact the student experience, including the curriculum, extracurricular programming, and advising.

Professional Committee Leadership

Structural Stability Research Council (SSRC); Chair, 2007-2013; Treasurer, 2013-2020)
SSRC is an international organization of researchers dedicated to advancing knowledge in all areas of structural stability. Under my leadership as chair, SSRC successfully achieved financial security, in part due to my analysis and subsequent decision to relocate its headquarters, and my coordination of this move from Rolla, Missouri to Chicago, Illinois. Today, I continue as the Council's treasurer, working with an annual budget of about $65k, and often representing SSRC at domestic and international meetings and conferences.

American Institute of Steel Construction (AISC)
I have served as a member of numerous professional committees tasked with implementing significant changes to the U.S. steel and aluminum design specifications. Most noteworthy are my continued efforts over the past fourteen years in chairing AISC's Task Committee 3 on Loads, Analysis, and Stability.

Since joining this committee in 1999, the stability design provisions in AISC's codes have been expanded dramatically to include the use of more advanced methods of computational analysis, which in significant part are based on the results of my doctoral thesis.

Course Development/Educational Program Leadership

Restructured college-wide course required of all first-years: Introduction to Engineering (ENGR 100)
I led a team of twelve faculty (in 2002) in an effort that resulted in the complete restructuring of Bucknell's interdisciplinary introductory engineering course, required by all 200 engineering majors. This effort included the creation of multiple three-week hands-on learning modules representing different engineering disciplines, as well as a series of lectures overviewing engineering, a significant service project, and an engineering ethics unit. The course structure, which is still used today, offers students the opportunity to select those engineering disciplines in which they are most interested. As course coordinator (2002-2008), I was also responsible for all aspects of course planning and delivery, and an annual budget of approximately $25k.

Academic Committee Leadership

I have chaired numerous Bucknell academic committees, including the University's *Committee on Academic Freedom and Tenure* (CAFT). At the college-level, I have chaired committees on Curriculum, Computing, and International Education. At the department-level, I have chaired many Review Committees for Tenure and Promotion, as well as faculty search committees.

Externally Funded Scholarship Activities

American Institute of Steel Construction, Chicago, IL (Funding: 02/24 to present)
Ongoing research project towards developing provisions for high strength steel compression members.

Aluminum Association, Arlington, VA (05/22 – present)
Ongoing research project towards developing improved design provisions for the torsional strength of aluminum solid and hollow shapes.

Steel Joist Institute, Myrtle Beach, SC (05/19 – 06/22)
Modeling and Analysis of Nonsymmetrical Shapes in Open Web Steel Joists

NUCOR – Vulcraft/Verco Group, Norfolk, NE (07/17 – 07/18)
Tension Chord Sidesway Buckling in Composite Steel Joists

Steel Joist Institute, Myrtle Beach, SC (05/17 – 05/18)
Computer Simulation of Joist Seat Rollover - Phase I

Metal Building Manufacturers Association, Cleveland, OH (07/15 – 07/16)
Development of a model program that partners the metal building industry with undergraduate engineering faculty and students by way of a major design experience.

Aluminum Association, Arlington, VA (Funding: 03/13-present)
Comprehensive study on the influence of weld-affected zones on the compressive and/or flexural strength of aluminum structural members.

Steel Joist Institute, Myrtle Beach, SC **(**10/13 to 08/15)
Computational studies to investigate the impact of small amounts of in-plane bending on the compressive strength of double-angled web members in standard open-web steel joists.

Steel Joist Institute, Myrtle Beach, SC **(**11/11 to 08/13)
Compressive analytical study to support recommendations on effective length K-factors for use in defining the flexural buckling strengths of compressive web members in open-web steel joists. Research has supported one graduate student.

American Institute of Steel Construction, Chicago, IL (Funding: 09/11 to 09/15)
Research projects towards extending the direct analysis method to provide for designing beam-columns based on assessment of cross-section strength requirements only, with member and system instabilities detected by the analysis.

Aluminum Association, Arlington, VA (05/11 – 06/12)
Research to develop improved design provisions for the elastic compressive strength of aluminum open circular-arc sections.

Aluminum Association, Arlington, VA (05/10 – 12/10)
Pilot study investigating the development of seismic provisions for aluminum structures, including recommendations for defining seismic response modification *R*-factors.

Steel Joist Institute, Myrtle Beach, SC **(**09/09 to 08/11)
Multi-phase research project to develop improved bridging design criteria for K-Series and LH/DLH-Series open-web steel joists. Work includes developing analytical models that verify the strength and stiffness requirements for joist bridging.

Aluminum Association, Arlington, VA (05/07 – 05/09)
Research focused on the development of the new stability provisions for the *2010 Specification for Aluminum Structures*. Project included both experimental and analytical components.

American Institute of Steel Construction, Chicago, IL (Funding: 01/02 to 06/05)
Computational research that evaluated the accuracy of three design methods proposed by the American Institute of Steel Construction for implementation into their 2005 specification. The critical load approach (effective length method) and the notional load/modified stiffness method (direct analysis method) were investigated using ten representative frames. Advanced methods of inelastic analysis were performed on all frames as a basis for comparison.

Steel Joist Institute, Myrtle Beach, SC **(**Funding: 04/00 – 03/03)
Investigation of the performance of open-web steel joists that are not braced out-of-plane and are subject to a mid-span concentrated loading. With resistance to lateral-torsional buckling only provided by connections at the end supports, a comprehensive experimental and analytical study of different connection types and joist geometries was performed, including consideration of cases with over forty different K-series and LH-series joists. Results included recommendations and tables for estimating the unbraced capacity of all SJI standard K-, KCS-, and LH-series joists with various end support. Funding supported two graduate students and six undergraduates.

New Columbia Joist Company, New Columbia, PA
Project 1: Funding: 01/02 – 06/05
Experimental investigation towards optimizing the performance of structural steel connections in open-web steel joists. Studies included consideration of strength of butt-welded specimens and slip resistance of bolted connections of painted plates.

Project 2: Funding: 09/95 – 06/99
Experimental research that investigated the behavior of open-web steel joists constructed with Vierendeel (non-truss) panels. Study included the design and construction of a full-scale testing apparatus that has a maximum applied load capacity of 85 tons and accommodates investigation of joists ranging in length from 12 to 80 ft. The project supported one graduate student.

AT&T Bell Laboratories, Holmdel, NJ (Funding: 06/92 – 07/96)
Multi-phase research project employing computational simulations studies and experimental shake table tests, which were performed at Wyle Laboratories in Huntsville, AL, to support the seismic design of steel racks supporting AT&T's digital access and cross-connect telecommunications

systems. Tests were done on single bay, two-bay, and five bay set-ups. In an effort to improve the earthquake response behavior of these systems, this research also analytically and experimentally investigated the benefits and limitations of using neoprene sandwich mounts at the base of AT&T equipment support frames. The project supported four graduate students and four undergraduates.

Textbooks and Software Development

Ziemian, Ronald D., (Editor), 2010, ***Guide to Stability Design Criteria for Metal Structures***, 6th Edition, John Wiley and Sons Publishers, Hoboken, N.J., 1124 pages.

The project was sponsored by SSRC, AISC, Aluminum Association, and John Wiley and Sons, Inc. The text includes coverage of state-of-the-art research findings in many areas of structural stability.

McGuire, W., Gallagher, R.H., and Ziemian, R.D., 2000, ***Matrix Structural Analysis***, Second Edition, John Wiley and Sons Publishers, New York, N.Y., 460 pages.

The second edition was completely rewritten to include comprehensive coverage of nonlinear analysis. My primary responsibilities the research and development of three new chapters and an appendix on computational methods in linear and nonlinear analysis, chapter editing, preparation of solutions manual, and participation in publication production. This edition is currently in its twelfth printing.

Ziemian, R.D., McGuire, W., and Liu, S., ***MASTAN2*****,** Interactive linear and nonlinear structural analysis software distributed by John Wiley and Sons Publishers, New York, New York, 2000 (v. 1.0) to present (v. 5.2); www.mastan2.com

Author/developer of MASTAN2, an educational software package that provides for graphically interactive structure definition, linear/nonlinear behavior analysis, and graphical/tabular results display.

- Preprocessing: definition of structural geometry, support conditions, loading, and element properties.
- Analyses: first- or second-order elastic and/or inelastic analyses of two- or three-dimensional frames and trusses subjected to static and dynamic loads. Includes nonlinear analysis of systems of with members comprised of non-symmetric shapes.
- Post-processing: structural behavior interpretation through deformation and force diagrams, printed output, and response curves.

Written in modular form, MASTAN2 is designed to allow students to develop and implement additional/alternative analysis routines within the software. Analyses are based on theoretical and numerical formulations presented in *Matrix Structural Analysis*, 2nd ed (McGuire, Gallagher, and Ziemian). The software includes over 40,000 lines of MATLAB equivalent C++ code and runs on all Windows, Mac, and UNIX platforms. MASTAN2 is distributed free of charge on www.mastan2.com. As of June 2007, over 525,000 copies of MASTAN2 have been downloaded worldwide at more than 120 universities.

Ziemian, R.D. and McGuire, W., **Tutorial for MASTAN2**, John Wiley and Sons Publishers, New York, New York, Version 1.0, 2000, Version 2.0, 2002, and Version 3.0, 2006.

Created MASTAN2 manual, now available in both print and graphically interactive software form, and www.mastan2.com website where software and tutorial are available for free download.

Ziemian, R.D., and Liu, S., **MSASect2,** A cross-platform software developed for comprehensive analysis of arbitrary cross-sections with nonsymmetric shapes. This includes examining their cross-sectional properties, yield strengths, global and local buckling capacities, etc. The software hosts the advanced numerical algorithms, derived from the research team led by Dr. Siwei Liu from the Department of Civil and Environmental Engineering at Hong Kong Polytechnic University. MSASect2 is developed to address design challenges associated with complex and irregular cross-sections, which are increasingly popular in modern structures due to their superior structural efficiency. The software is available at no cost (www.msasect.com) and is intended for both research and educational.

Consulting Activities

Canam Steel Corporation, Buckeye, Arizona 2024 – present
Assistance with developing a design methodology for combined section joist compression webs.

Rack Manufacturing Institute, Charlotte, NC 2024 – present
Technical consultant for research and code development for storage racks.

Aluminum Association, Arlington, VA 2021 – present
Technical consultant for code and manual development, and all structural engineering inquiries.

NUCOR – Vulcraft/Verco Group, Norfolk, NE 2016
Structural review of clips used to connect bridging to open web steel joists.

Computerized Structural Design, S.C., Milwaukee, WI 2014
Assessment of the degree to which an unexpected initial out-of-straightness may affect the performance of a series of open web steel joists.

Bechtel Power Corporation, Washington D.C. Metro Area 2009
Computational study to investigate the buckling strength of a 400-ton lift beam.

CMC Joist and Deck Company, New Columbia, PA 2008
Experimental study to investigate the stiffness and strength of single- and double-welded beams built up from four angles.

The New Columbia Joist Company, New Columbia, PA 2002-2006
Experimental study to confirm a new state-of-the-art flash butt-welding machine is operating to the manufacturer's specifications.

The New Columbia Joist Company, New Columbia, PA 2003
Experimental study to investigate the impact of using painted components within the bolted steel connections that are used to provide lateral bracing of their open-web steel joists.

VortX United, Inc, Milton, PA 2002
Experimental and computational investigation of the static and dynamic performance of a structural steel frame used to support machinery that is used to mix adhesive materials.

Pole-Lite Marketing Corporation, Floral Park, New York 1991-92
Prepared an interactive computer program that analyzes and designs aluminum luminaire-support poles in compliance with Standard Spec. for Highway Signs, Luminaires, and Traffic Signals.

Boyce Thompson Institute for Plant Research, Ithaca, New York 1988
Performed a stress analysis and redesign of an experimental fumigation chamber (cable-stayed aluminum frame) used to study the effects of the environment on full size trees.

Gorbel, Inc., Rochester, New York 1987
Designed and analyzed a series of light crane systems; A simplified scheme for designing future crane systems was also developed.

Professional Registration

Licensed Professional Engineer – Texas (No. 99930)
Intern Engineer - New York (No. 031303)

Professional Service and Affiliations

Journal of Constructional Steel Research, Editor in Chief (2016-2024)
This is a *SCI* Q1 journal (*SJR* 1.52) that provides an international forum for the presentation and discussion of the latest developments in structural steel research and their applications.

Structures, Editorial Board
Research journal published by Institution of Structural Engineers and Elsevier B.V., Oxford, U.K.

Aluminum Association, Professional Member
Member - Engineering Advisory and Specification Committee
Member - Engineering Design Task Force

American Institute of Steel Construction, Professional Member
Member – Committee on Specifications
Member – Task Committee 1, Coordination
Member – Task Committee 3, Loads, Analysis & Stability
Member – Task Committee 4, Member Design
Member -North American Steel Construction Conference Planning Committee
Member - Partners in Education
Chair – Task Committee 3, Loads, Analysis & Stability
Chair – Sub-Committee on Inelastic Analysis and Design (past)
Chair – Task Committee 10, Stability (past)
Chair – FACET (Future AISC Codes Embracing Technology) Sub-Committee (past)

American Iron and Steel Institute, Member
Member – Committee on Specifications
Member – Committee on Framing Standards
Member – COS-22 Stability and Combined Actions
Member – Sub-Committee on Advanced Analysis

American Society of Civil Engineers, Member
Member – Structural Engineering Institute (SEI) - Structural Members
Member - Structural Engineering Institute (SEI) - Technical Division on Metals
Member - Committee on Load and Resistance Factor Design (past)
Member - Committee on Compression and Flexural Members (past)

Canadian Standards Association
Member – S6 Section 17 (Aluminum Structures)

Structural Stability Research Council, Member-at-Large
Treasurer, 2013-2020
Chair, 2007-2013
Member - Executive Committee
Member - Task Group 4, Frame Stability and Columns as Frame Members
Member - Task Group 29, 2nd-Order Inelastic Analysis for Frame Design

Annual Stability Conference and Technical Meeting, Chair (Structural Stability Research Council)
Phoenix, AZ, April 1-4, 2009
Nashville, TN, April 2-5, 2008
New Orleans, LA, April 18-21, 2007

Conference Steering Committee, Member
ASCE Structures Congress and Exposition, Structural Engineering Institute, Phila PA, 05/8-10, 2000.

Journal of Structural Engineering, Associate Editor
American Society of Civil Engineers, Reston, Virginia (1998 – 2001)

Awards and Honors

AISC Lifetime Achievement Award 2024
Lifetime Achievement Awards honor living individuals, including industry members, designers, or educators, who have made a difference in the success of the American Institute of Steel Construction and the structural steel industry. The award provides special recognition to individuals who have provided outstanding service over a sustained period of years to AISC and to the structural steel design, construction, and academic communities.

SSRC Distinguished Member Award 2023
The Structural Stability Research Council recognizes those members who have provided extraordinary service to the Council with the rank of Distinguished Member.

SSRC Lynn S. Beedle Award 2021
Highest honor bestowed upon contributing members of the Structural Stability Research Council. Criteria include long-time member of SSRC, a worldwide leading stability researcher or designer of structures with significant stability issues, a leader in fostering cooperation between professionals worldwide, and significant contributions to national and international design code development.

AISC TR Higgins Award 2019
Honored by the American Institute of Steel Construction as an outstanding lecturer and author whose technical paper or papers, published during the past 5-year eligibility period, are considered an outstanding contribution to the engineering literature on fabricated structural steel.

MBMA Faculty Fellow 2015
Award recognizing selected faculty in the development of a model program that partners with the metal building industry to develop a major undergraduate design experience.

ASCE Shortridge Hardesty Award 2013
Award for substantial accomplishments in research, service, and teaching, toward advancing practice in the field of structural stability

Presidential Professorship, Bucknell University 2010-12
Chaired position recognizing a sustained record of distinguished teaching and scholarship

Top Hits from Top Profs 2007
Lectureship recognition by the American Institute of Steel Construction

AISC Special Achievement Award 2006
Honored by the American Institute of Steel Construction for the innovative development of advanced structural analysis software and a key role in its use to develop the 2005 AISC Specification provisions for stability analysis and design of steel structures.

Advisor to Vinnakota Awardee 2006
Structural Stability Research Council's award to acknowledge the best student authored paper, "Benchmark Studies to Compare Frame Stability Provisions", at the SSRC Annual Conference. Presented to student (Jose M. Martinez-Garcia) and faculty advisor.

Presidential Award for Teaching Excellence, Bucknell University 2000

ASCE Normal Medal 1994
The highest honor granted by the American Society of Civil Engineers for a technical paper that makes a definitive contribution to engineering science. Awarded for the paper "Inelastic Limit States Design: Part I - Planar Frame Studies", *ASCE Journal of Structural Engineering*.

Sigma Xi, The Scientific Research Society 1991 - present

Cornell University Chapter of Chi Epsilon 1983-present

General Motors Scholar, Cornell University 1984-8

Keynotes (shown in bold) and Invited Lectures

Ziemian, R.D., "Design of Steel Structures with Nonsymmetric Sections by the Direct Analysis Method" ***Keynote Lecture*****, 11th International Conference on Advances in Steel Structures (ICASS 2023), Kuching, Sarawak, Malaysia**, December 6, 2023.

Ziemian, R.D. "Recent Work in Evaluating the U.S. Practice of Offering Two Design Bases, LRFD and ASD," *Invited Lecture*, 2nd Sino–US Forum on Steel Design Codifications, Hong Kong, December 1, 2023.

Ziemian, R.D., "Design by Advanced Analysis – An Interesting History" ***Keynote Lecture*****, 10th International Conference on Advances in Steel Structures (ICASS 2022), Chengdu, China**, August 21, 2022.

Ziemian, R.D., "100 years of Design by Advanced Analysis" ***Keynote Lecture*** **as part of Lynn S. Beedle Award, Structural Stability Research Council's Annual Stability Conference, Denver, CO**, March 24, 2022.

Ziemian, R.D., "Structural Stability – Letting the Fundamentals Guide Your Judgement," ***Keynote Speaker*****, Indian Structural Steel Conference, IIT Hyderabad, India** (online) January 9, 2022.

Ziemian, R.D., "An iconic building, a renowned engineer, and a momentous ethics case study" *Invited Lecture*, Program of Graduate Studies in Civil and Environmental Engineering, The Pennsylvania State University, December 3, 2020; ASCE Central Pennsylvania Chapter Meeting, Harrisburg, PA, March 8, 2022; Structural Engineering Association of Alabama, Birmingham, AL, April 3, 2024.

Ziemian, R.D., "Brace Stiffnesses for Multiple Parallel Compression Members –AISI Specification Equations, An Update…," *Invited Lecture*, AISI Committee on Framing Standards and Committee on Standards, Online webinar, February 15, 2021.

Ziemian, R.D., "Design by Advanced Analysis – 2016 AISC Specification," ***Keynote Lecture*****, International Colloquium on Stability and Ductility of Steel Structures, Prague, Czech Republic**, September 12, 2019.

Ziemian, R.D. "Overview of US stability design philosophies: ELM and DM," *Invited Lecture*, 1st Sino–US Forum on Steel Design Codifications, Cornell University, Ithaca, NY, June 19, 2019.

Ziemian, R.D., "Structural Stability – Letting the Fundamentals Guide Your Judgement," ***Keynote Speaker*****, 13th International Conference on Modern Building Materials, Structures and Techniques, Vilnius, Lithuania**, May 16, 2019.

Ziemian, R.D., "Structural Stability – Letting the Fundamentals Guide Your Judgement," ***Keynote Speaker*****, TR Higgins Award Lecture, AISC North American Steel Construction Conference, St. Louis, MO**, April 5, 2019.

Ziemian, R.D., "Modeling Systems of Unsymmetrical Members as Doubly Symmetric – How Much Does It Matter?" ***Keynote Speaker*****, 9th International Conference on Advances in Steel Structures (ICASS 2018), Hong Kong, China**, December 6, 2018.

Ziemian, R.D. "Systems of Members with Thin-Walled Nonsymmetric Sections – A Contribution to the Theory and Analysis Software," *Invited Lecture,* Eighth International Conference on Thin-Walled Structures – ICTWS, Lisbon, Portugal, July 26, 2018.

Ziemian, R.D., "The U.S. Specification for Aluminum Structures (2010-2016) - Major Changes and Research," ***Keynote Speaker*, 8th International Conference on Steel and Aluminium Structures, Hong Kong**, December 7, 2016.

Ziemian, R.D., "Benchmark Problems for Design by Advanced Analysis – Members Subject to Major- and Minor-Axis Flexure," *Invited Lecture*, International Colloquium on Stability and Ductility of Steel Structures, Timisoara, Romania, May 30, 2016.

Ziemian, R.D., "Design by Advanced Analysis – 2016 AISC Specification," ***Keynote Speaker*, 12th International Conference on Modern Building Materials, Structures and Techniques, Vilnius, Lithuania**, May 26, 2016.

Ziemian, R.D., "Integrating Metal Buildings in University Capstone Courses," *Invited Lecture*, Metal Building Manufacturers Association Annual Spring Meeting, Ft. Worth, TX, May 10, 2016.

Ziemian, R.D., "Teaching Chapter C, Design for Stability – One Faculty Member's Perspective," ***Keynote Speaker*, Educator Session, American Institute of Steel Construction, Orlando, FL**, April 13, 2016.

Ziemian, R.D., "Analysis as the Keystone to the Design Process," ***Keynote Speaker*, Structural Engineering Association of Pennsylvania, Hershey, PA**, June 4, 2015.

Ziemian, R.D., "Mr. Wriston, your building is not well…" *Invited Lecture*, Program of Graduate Studies in Civil and Environmental Engineering, University of Passo Fundo, Brazil, August 7, 2014.

Ziemian, R.D., "Citicorp Center: An Ethical Dilemma," *Invited Lecture*, Vilnius Gediminas Technical University, Vilnius, Lithuania, May 7, 2014.

Ziemian, R.D., "20 Years of Fun with Open Web Steel Joists – (from micro to MACRO)," *Invited Lecture*, Steel Joist Institute – Board of Directors Meeting, Ponte Vedra Beach, FL, April 28, 2014.

Ziemian, R.D., "Design by inelastic analysis – New opportunities in the U.S." *Invited Lecture*, School of Civil and Environmental Engineering, The University of New South Wales, Australia, March 20, 2014.

Ziemian, R.D., "An Ethical Case Study of an Iconic Building in NYC" *Invited Lecture*, School of Civil, Mining and Environmental Engineering, University of Wollongong, Australia, March 13, 2014.

Ziemian, R.D., "AISC's Design by Advanced Inelastic Analysis" *Invited Lecture*, Civil and Natural Resources Engineering, University of Canterbury, Christchurch, NZ, February 5, 2014.

Ziemian, R.D., "Structural Stability and the Curse of the Differential Equation," *Invited Lecture*, Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, October 4, 2013.

Ziemian, R.D., "Using Computer Software as a Virtual Lab for Learning Structural Stability," ***Keynote Speaker*, Educator Session, American Institute of Steel Construction, Fort Worth, TX**, April 18, 2012.

Ziemian, R.D., "Design by Inelastic Analysis – 2010 AISC Specification," ***Keynote Speaker*, Iberian Latin American Congress on Computational Methods in Engineering (CILAMCE), Ouro Preto, Brazil**, November 2011.

Ziemian, R.D., "Basic Introduction to Nonlinear Analysis," *Invited Lecture*, Structural Engineering Association of New York, New York, NY, April 15, 2008.

Ziemian, R.D., "The Past, Present and Future Activities of the Structural Stability Research Council", ***Keynote Speaker*, International Colloquium on Stability and Ductility of Steel Structures, Lisbon, Portugal**, Sept., 2006.

Invited Instructor/Presenter – Professional Development Workshops/Short Courses

Aluminum Structural Design with the 2020 Aluminum Design Manual, Ziemian, R.D., American Society of Civil Engineers. Two-day (8 hours/day) workshop. 6/7/2023 to 6/8/2023, 12/20/2023 to 12/21/2023, and 12/19/2024 to 12/20/2024.

Welding Aluminum Structures, Ziemian, R.D. and Burns, T., American Welding Society Workshop including six 75-minute webinars. 5/17/2022 to 5/26/2022, 7/26/2022 to 8/4/2022, 7/25/23 to 8/3/23, 12/12/23 to 12/21/23, 7/9/24 to 7/18/24, and 11/11/24 to 11/20/24.

Modern Methods for Learning the Basics of Structural Stability: From Behavior to Practice, Ziemian, R.D. and Quadrato, C., AISC Night School, 90-min webinars:

Session 1: Behavior of Compression Members – The Fundamentals 10/6/2020;
Session 2: Behavior of Compression Members – Practical Considerations 10/13/2020;
Session 3: Behavior of Flexural Members – The Fundamentals 10/20/2020;
Session 4: Behavior of Flexural Members – Practical Considerations 10/27/2020;
Session 5: Behavior of Beam-Columns – The Fundamentals 11/10/2020;
Session 6: Behavior of Beam-Columns – Practical Considerations 11/17/2020;
Session 7: Behavior of Systems – The Fundamentals 12/1/2020;
Session 8: Behavior of Systems – Practical Considerations 12/8/2020;

Structural Stability – Letting the Fundamentals Guide Your Judgement, Ziemian, R.D., AISC TR Higgins Lecture (1-hour): East Lansing, MI, May 7, 2019; Denver, CO, July 18, 2019; Boston, MA, August 1, 2019; San Antonio, TX, September 5, 2019; Boca Raton, FL, September 18, 2019; Fayetteville, AR, October 3, 2019; Sacramento, CA, October 15, 2019; Blacksburg, VA, October 31, 2019; Pittsburgh, PA, November 7, 2019; Des Moines, IA, November 14, 2019; SEAoNY, December 11, 2019; UC San Diego, January 8, 2020; UC Irvine, January 10, 2020; U Kansas, March 5, 2020; GA Tech, March 9, 2020; AISC Webinar, April 16, 2020; U Massachusetts, April 2, 2021; SEAoAL, April 3, 2024.

Teaching Steel Design: Fundamentals of Behavior in a System Context, Ziemian, R., Liu, J., Fahnestock, L, Engelhardt, M., and Geschwindner, L, 3-days, 2018 AISC Educator Workshop, Dallas, TX, July 17 - 19, 2018.

Fundamentals of Stability for Steel Design, Ziemian, R.D., AISC Night School, 90-min webinars:

Session 1: Course Introduction and Behavior of Compression Members – 6/3/2013; 6/5/2017; 10/21/24.
Session 3: Behavior of Flexural Members – 6/17/2013; 6/26/2017; 11/4/24.
Session 5: Stability of Structural Systems/Beam-Columns – 7/8/2013; 7/17/2017; 12/2/24.

Fundamentals of Stability for Steel Design, Ziemian, R.D., AISC/SSRC Short Course: San Antonio, TX, March 21, 2017, 4-hours; Yonkers, NY, March 8, 2017, 4-hours; Honolulu, HI, December 10, 2015, 1-day; Nashville, TN, March 25, 2015, 4-hours

Teaching Steel Design–A Faculty Workshop, Ziemian, R.D., Liu, J., and Fahnestock L.A., American Institute of Steel Design Short Course, 2-days, Chicago, IL; August 5-6, 2015; July 30-31, 2014; Chicago, IL, June 26 – 29, 2023.

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Ziemian, R.D., "A Verification Study for Methods of 2nd-Order Inelastic Analysis", *Proceedings of the Structural Stability Research Council Annual Meeting and Technical Session*, Pittsburgh, Pennsylvania, 1992.

Ziemian, R.D., McGuire, W., Deierlein, G.G., "**Inelastic Limit States Design: Part I - Planar Frame Studies**", *Journal of Structural Engineering*, American Society of Civil Engineers, New York, New York, September, 1992. https://doi.org/10.1061/(ASCE)0733-9445(1992)118:9(2532)

Ziemian, R.D., McGuire, W., Deierlein, G.G., **"Inelastic Limit States Design: Part II - Three-Dimensional Frame Study"**, *Journal of Structural Engineering*, American Society of Civil Engineers, New York, New York, September, 1992. https://doi.org/10.1061/(ASCE)0733-9445(1992)118:9(2550)

Ziemian, R.D., Deierlein, G.G., McGuire, W., "A Case Study in Inelastic Limit States Analysis and Design", *Proceedings of the American Society of Civil Engineers Structures Congress*, Indianapolis, Indiana, 1991.

Ziemian, R.D., White, D.W., Deierlein, G.G., McGuire, W., "One Approach to Inelastic Analysis and Design," *Proceedings of the American Institute of Steel Construction National Steel Construction Conference*, Kansas City, Missouri, 1990.

McGuire, W., Ziemian, R.D., **Discussion of "Second-order Elastic Analysis for Frame Design", *Journal of Structural Engineering*,** American Society of Civil Engineers, New York, New York, February, 1989. https://doi.org/10.1061/(ASCE)0733-9445(1989)115:2(501)

Conference Presentations (*see above for Keynotes and Invited Lectures*)

Ziemian, R.D., Ziemian, C.W., "Influence of Transverse Welds on the Strength of Aluminum Alloy I-Shaped Members," 10th International Conference on Steel and Aluminium Structures, Rio de Janeiro, Brazil, June 6, 2024.

Ziemian, R.D., Quadrato, C., Bishop, C., Hooper, J., Clayton, P., Sabelli, R., "Case Studies on Structural Stability Failures: You Make the Call", American Institute of Steel Construction North American Steel Construction Conference, San Antonio, TX, March, 2024.

Ziemian, R.D., Ziemian, C.W., "Torsional Strength of Aluminum Shapes—Circular and Rectangular Solids," 15th International Aluminium Conference, Québec, QC, Canada, October 12, 2023.

Ziemian, R.D., Quadrato, C., Bishop, C., Hooper, J., Clayton, P., "Case Studies on Structural Stability Failures: You Make the Call", American Institute of Steel Construction North American Steel Construction Conference, Charlotte, NC, April, 2023.

Ziemian, R.D., Ziemian, C.W., “Lateral Bracing Stiffness Requirements for Systems of Parallel Compression Members,” International Colloquium on Stability and Ductility of Steel Structures, Aveiro, Portugal, September 14, 2022.

Ziemian, R.D., Bishop, C., Hooper, J., Quadrato, C., Fischer, E., Griffis, L., "Case Studies on Structural Stability Failures: You Make the Call", American Institute of Steel Construction North American Steel Construction Conference, Denver, CO, March, 2022.

Ziemian, R.D., Buckholt, J., " Direct Analysis Method: When and Why?" American Institute of Steel Construction North American Steel Construction Conference, Denver, CO, March, 2022.

Ziemian, R.D., Bishop, C., Hooper, J., Clayton, P., "Structural Stability Game Show", American Institute of Steel Construction North American Steel Construction Conference, St. Louis, MO, April, 2019.

Ziemian, R.D., “Comparison of Steady-State and Transient Thermo-Mechanical Responses of Unprotected Aluminum Columns at Elevated Temperatures,” Annual Stability Conference, Structural Stability Research Council, St. Louis, MO, April 2019.

Ziemian, R.D., "Structural Stability, and the Complement to the Differential Equation", American Society of Civil Engineers Structures Congress, Ft. Worth, TX, April, 2018.

Ziemian, R.D., Bishop, C., Hooper, J., Clayton, P., Griffis, L., "Structural Stability Game Show ", American Society of Civil Engineers Structures Congress, Ft. Worth, TX, April, 2018.

Ziemian, R.D., "Partnering with an MBMA Company, But Still Designing the Building", American Society of Civil Engineers Structures Congress, Denver, CO, April, 2017.

Ziemian, R.D., and Griffis, L., “More Opportunities with the Direct Analysis Method,” American Institute of Steel Construction North American Steel Construction Conference, Orlando, FL, April, 2016.

Ziemian, R.D., and Holtermann, T., “Future Directions in Designing Bridging for Open-Web Steel Joists,” American Institute of Steel Construction North American Steel Construction Conference, Nashville, TN, March, 2015.

Ziemian, R.D., and White, D.W., “Direct Analysis Method— Now and the Future,” American Institute of Steel Construction North American Steel Construction Conference, Toronto, Canada, March, 2014

Lee, S.G., Ziemian, R.D., “Effective Length K-factors for Flexural Buckling Strengths of Web Members in Open Wen Steel Joists," Structural Stability Research Council Annual Stability Conference, Toronto, Canada, March 2014.

Ziemian, R.D., “Design by Inelastic Analysis – 2010 AISC Specification,” Fifth International Conference on Structural Engineering, Mechanics and Computation, Cape Town, South Africa, 2013.

Ziemian, R.D., “Structural Stability, and the Complement to the Differential Equation,” Fifth International Conference on Structural Engineering, Mechanics and Computation, Cape Town, South Africa, 2013.

Ziemian, R.D., and Henige, R., “Inelastic Behavior and Design: New Opportunities,” American Institute of Steel Construction North American Steel Construction Conference, St. Louis, MO, April, 2013.

Shepherd, C.M., and Ziemian, R.D., “Elastic Compressive Strength of Aluminum Open Circular-Arc Sections," Structural Stability Research Council Annual Stability Conference, St. Louis, MO, April, 2013.

Eberle, J., Ziemian, R.D., and Potts, D., “Computational Studies Aimed at Defining Bridging Requirements for Steel Joists During Erection,” Structural Stability Research Council Annual Stability Conference, Grapevine, TX, April, 2012.

Ziemian, R.D., “Design by Inelastic Analysis – 2010 AISC Specification,” Keynote Speaker, Iberian Latin American Congress on Computational Methods in Engineering (CILAMCE), Ouro Preto, Brazil, November 2011.

Statler, D.E., Ziemian, R.D., and Robertson, L.E., “The Natural Period as an Indicator of Second-Order Effects,” Structural Stability Research Council Annual Stability Conference, Pittsburgh, PA, May, 2011.

Ziemian, R.D., McGuire, W., “MASTAN2, Educational Analysis Software for the 21st Century,” IASS- IACM 6th International Conference on Computation of Shell & Spatial Structures, Cornell University, Ithaca, NY, May, 2008.

Ziemian, R.D., Seo, D.W., and McGuire, W., "On the Inelastic Strength of Beam-Columns under Biaxial Bending", Structural Stability Research Council Annual Stability Conference, Nashville, TN, April, 2008.

Ziemian, R.D., and Martinez-Garcia, J.M., "Frame Studies to Compare Stability Provisions Appearing in the 2005 AISC Specification", Proceedings, International Colloquium on Stability and Ductility of Steel Structures, Lisbon, Portugal, Sept., 2006.

Ziemian, R.D., and Easterling, W.S., "The Past, Present and Future Activities of the Structural Stability Research Council", Keynote Speaker - International Colloquium on Stability and Ductility of Steel Structures, Lisbon, Portugal, Sept., 2006.

Ziemian, R.D., and Surovek, A.E., "The Direct Analysis Method: Bridging the Gap from Linear Elastic Analysis to Advanced Analysis in Steel Frame Design", American Society of Civil Engineers Structures Congress, New York, NY, April, 2005.

Ziemian, R.D., Schwarz, J.E., Emerson, M.E., and Potts, D.R., "Stability Of Unbraced Steel Joists Subject To Mid-Span Loading", Structural Stability Research Council Annual Stability Conference, Long Beach, CA, March, 2004.

Ziemian, R.D., McGuire, W., "The Modified Tangent Modulus Approach, a Contribution to Plastic Hinge Analysis", NSF-JSPS Joint Program, *US-Japan Seminar on Advanced Stability and Seismicity Concept for Performanced-based Design of Steel and Composite Structures*, Kyoto, Japan, July 2001.

Ziemian, R.D., "Advanced Analysis Capabilities and Their Potential in Steel Frame Design", Proceedings, Structural Stability Research Council Annual Stability Conference, Ft. Lauderdale, Florida, May, 2001.

Ziemian, R.D., "Going Beyond Linear-Elastic Analysis", Proceedings, American Society of Civil Engineers Structures Congress, Washington, D.C., May, 2001.

McGuire, W., Ziemian, R.D., "On Levels of Analysis in Steel Frame Design," IMCA Sixth International Symposium on Steel Structures, Puebla, Mexico, November, 1999.

Ziemian, R.D., "Inelastic Critical Loads by Eignevalue Analysis", American Society of Civil Engineers Structures Congress, New Orleans, April, 1999.

Ziemian, R.D., "Matrix Structural Analysis", Structural Stability Research Council Annual Stability Conference, Atlanta, Georgia, September 1998.

Ziemian, R.D., Miller, A., "Inelastic Limit States Design: Steel Structures with Members Subjected to Minor-Axis Bending", American Society of Civil Engineers Structures Congress, Boston, MA, April, 1996.

Ziemian, R.D., Miller, A., "Inelastic Limit States Design of Steel Structures that Include Members in Minor- Axis Bending", Plasticity '95, Sakai, Osaka, Japan, July, 1995.

Ziemian, R.D., Prestridge, S., Peng, P., Philogene, K., "Seismic Analyses of Telecommunications Equipment", American Society of Civil Engineers Structures Congress, Boston, MA, April, 1995.

Prestridge, S., and Ziemian, R.D., "Earthquake Computer Simulations of AT&T DACS IV - Telecommunications Equipment", AT&T Thermal & Mechanical Design Forum, Princeton, New Jersey, March, 1994.

Ziemian, R.D., "A Verification Study for Methods of 2nd-Order Inelastic Analysis", Structural Stability Research Council Annual Meeting and Technical Session, Pittsburgh, Pennsylvania, April 1992.

Ziemian, R.D., White, D.W., Deierlein, G.G., and McGuire, W., "One Approach to Inelastic Analysis and Design," American Institute of Steel Construction National Steel Construction Conference, Kansas City, Missouri, 1990.

Ziemian, R.D., and McGuire, W., "Current Research in Plastic Design under LRFD," American Society of Civil Engineers Structures Congress, Orlando, Florida, August, 1987.

Technical Manuscript Reviewer

Finite Elements in Analysis and Design, Elsevier B.V, England.

Journal of Structural Engineering, American Society of Civil Engineers, Reston, Virginia.

Journal of Constructional Steel Research, Elsevier Science Publishers Ltd., England.

International Journal of Solids and Structures, Elsevier Science Publishers Ltd., England.

Steel and Composite Structures – An International Journal, Techno-Press Limited, Daejeon, Korea.

Engineering Journal, American Institute of Steel Construction, Chicago, Illinois.

Canadian Journal of Civil Engineering, Canadian Society for Civil Engineering, NRC Press, Ottawa.

Structural Engineering and Mechanics – An International Journal, Techno-Press Limited, Korea.

Professional Review Committees

SSRC MAJR Award Spring 2016, 2017, 2018

Member of jury to determine winner of the *McGuire Award for Junior Researcher* to be presented by the Structural Stability Research Council at their annual conference.

Applied Technology Council Summer 2013

Member of committee responsible for selecting recipient of research project titled *Seismic Behavior of Plastic Hinges in Deep, Slender Wide-Flange Structural Steel Beam-Column Members: Experimental Evaluation* that is funded by NEHRP Consultants, a joint venture of the Applied Technology Council and Consortium of Universities for Research in Earthquake Engineering.

T.R. Higgins Lectureship Award Summer 2005, 2006, 2007

Member of jury to determine an outstanding lecturer and author of a technical paper, presented by the American Institute of Steel Construction.

External Reviewer – Tenure and Full Promotion Decisions

School of Architecture - Architectural Engineering, Oklahoma State University
Department of Infrastructure Engineering - Structures, The University of Melbourne
Department of Engineering - Civil, SUNY Polytechnic Institute
Department of Engineering, Elizabethtown College
Department of Civil, Environmental, and Architectural Engineering, University of Kansas
Department of Civil and Environmental Engineering, South Dakota State University
Department of Civil and Environmental Engineering, University of North Carolina at Charlotte
Department of Civil and Environmental Engineering, Virginia Tech
Department of Civil Engineering, Auburn University
Department of Civil and Environmental Engineering, Marquette University
Department of Civil and Environmental Engineering, Lafayette College
School of Civil Engineering, Purdue University
School of Civil and Environmental Engineering, Cornell University
Department of Civil and Environmental Engineering, Villanova University

External Examiner for Ph.D. Theses

University of Wisconsin - Madison, Dept. of Civil and Environmental Engineering, Summer 2022
Harbin Institute of Technology, School of Civil Engineering, China, Summer 2019
University of Sydney, School of Civil Engineering, Australia, Summer 2015
Universidade de Passo Fundo, Infraestrutura e Meio Ambiente, Brazil, Summer 2014
University of Sydney, School of Civil Engineering, Australia, Fall 2013

Partners in Education Scholarships Spring 2006

Panelist for the review of applications for academic scholarships sponsored by the American Institute of Steel Construction.

I.D.E.A.S. Awards January 2006

Member of jury to determine winners for the *Innovative Design and Excellence in Architecture with Steel Awards* sponsored by the American Institute of Steel Construction.

SSRC Vinnakota Award Spring 2002, 2003, 2004

Member of jury to determine winner of the *Best Student Pape*r to be presented by the Structural Stability Research Council at their annual conference.

National Science Foundation Spring 1998, 1999, 2000

Panelist for the review of applications for the National Science Foundation and Oak Ridge Associated Universities *Graduate Research Fellowship Program*.

International Scientific Committees

International Conference on Advances in Steel Structures, Kuching, Malaysia, 12/2023
International Aluminium Conference, Quebec, Canada, 10/2023

International Colloquium on Stability and Ductility of Steel Structures, Alveiro, Portugal, 09/2022

International Conference on Advances in Steel Structures, Chengdu, China, 08/2022

Indian Structural Steel Conference, Hyderabad, India, 01/2022

International Colloquium on Stability and Ductility of Steel Structures, Prague, Czech Republic, 09/2019

International Conference on Steel and Aluminium Structures, Hong Kong, 12/2016

International Colloquium on Stability and Ductility of Steel Structures, Timisoara, Romania, 05/2016

International Conference on Modern Building Materials, Structures and Techniques, Vilnius, Lithuania, 05/2016

International Conference on Advances in Steel Structures, Lisbon, Portugal, 07/2015

International Conference on Steel Structures, Tehran, Iran, 02/2015

International Structural Specialty Conference, CSCE, Edmonton, 06/2012

International Colloquia on Stability and Ductility of Steel Structures, Rio de Janeiro, Brazil, 09/2010

International Colloquia on Stability and Ductility of Steel Structures, Lisbon, Portugal, 09/2006

Graduate Students Advised

Lee, S.G., "Effective Length K-factors for Flexural Buckling Strengths of Web Members in Open Web Steel Joists ", Master of Science, August, 2013.

Seo, D.W., "A Tangent modulus Approach for Modeling Inelastic Lateral-Torsional Buckling", Master of Science, August, 2008.

Bai, D., "Incorporating Two-Dimensional Second-Order Plastic Zone Analysis into MASTAN2", Master of Science, August, 2004.

Martinez-Garcia, J.M., “Benchmark Studies to Evaluate New Provisions for Frame Stability Using Second- Order Analysis”, Master of Science, December, 2002.

Schwarz, J.E., “Stability of Unbraced Steel Joists Subject to Mid-Span Loading – Phase II”, Master of Science, May, 2002.

Emerson, M.R., “Stability of Unbraced Steel Joists Subject to Mid-Span Loading – Phase I”, Master of Science, May, 2001.

Potts, D.R., “Analytical and Experimental Studies of Steel Joist Girders with Vierendeel Openings”, Master of Science, May, 1998.

Mostoller, D.J., “Computer Simulation of Telecommunications Equipment with Base Isolation”, Master of Science, May, 1996.

Moore, R.W., “Experimental Testing on Telecommunication Support Frames”, Master of Science, May, 1995.

Miller, A.R., “Advanced Second-Order Inelastic Analysis of Steel Structures with Columns Experiencing Minor-Axis Bending Subject to Strength Limit State Requirements”, Master of Science, May, 1995.

Prestridge, S.L., “Computer Simulations of the Transient Behavior of Telecommunications Support Equipment”, Master of Science, May, 1994.

Undergraduate Students Advised

McClintock, M., “An Investigation into Aluminum's Torsional Behavior of Circular, Rectangular, and Square Cross-Sections,” Honors Thesis, May, 2023.

Caswell, C., “Open-Web Steel Joists – Reducing the need for Bridging using HSS,” Honors Thesis, May, 2021.

Rojahn, G., “Finite Element Modeling of Open Web Steel Joists Comprised of Nonsymmetric Shapes,” Honors Thesis, May, 2020.

Wang, Y., “Advanced Analysis of Beam-Columns Resisting Minor-Axis Bending,” Honors Thesis, May, 2018.

Giesen-Loo, E., “Design of Steel Structures by Advanced 2nd-Order Elastic Analysis – Background Studies,” Honors Thesis, May, 2016.

Partridge, Allison, “Effective Lengths of Web Members in Trusses – An Experimental Investigation of Tension Effects,” Honors Thesis, May, 2016.

NweNwe, M.T., "Frame Studies – Modified Direct Analysis Method for the 2016 AISC Specification", Honors Thesis, May, 2014.

Du, S., "The Influence of a Weld-Affected Zone on the Compressive and Flexural Strength of Aluminum Members", Honors Thesis, May, 2013.

Meas, O., "Modeling Yield Surfaces of Various Structural Shapes", Honors Thesis, May, 2012.

Shepherd, C.M., "Study of the Compressive Strength of Aluminum Curved Elements", Honors Thesis, May, 2012.

Statler, D.E., "Using the Natural Period of a Structure as an Indicator of the Significance of Second-Order Effects", Honors Thesis, May, 2010.

Professional Development (Educational Workshops Attended)

National Effective Teaching Institute, American Society for Engineering Education, Montreal, Canada, June 13- 15, 2002.

Web-Enhanced Teaching of Structural Steel Design, American Institute of Steel Construction, The University of Kansas, Lawrence, Kansas, March 27-28, 2002.

Project Based Learning in Engineering, Aspects of Engineering Project Work – Assessment Workshop, The University of Nottingham, U.K., September 10, 2001.

Learning and Teaching Support Network, workshop on Running Group Projects, Loughborough University, England, November 21, 2001.

Bucknell Service/Administrative Activities

University

Committee on Assessment, Member, 2022-23
Committee on Instruction, Member, 1996-99, 2016-19
Faculty and Personal Committee, 2016-19
Committee on Admissions and Financial Aid, 2017-18
Faculty Development Committee, 2016-19
Committee on Staff Planning, 2016-17
Committee on Academic Freedom and Tenure, 2008-2011, Co-Chair 2009-2010, Chair 2010-2011
Search Committee for Dean of Student Services, Member, 2006-2007
Faculty Rep., Board of Trustees' Committee on Complementary Activities, 2004-2007 Member
Search Committee, Math Department for 3 Faculty Positions, 2006-2007
Faculty Advisor, BU Women's Varsity Basketball Team, 2006-2012
University Faculty Performance Evaluation Task Force, Member, 2002
Committee on Academic Computing, Member, 1994-96, 1999-2002
University Honors Council, Member, 1993-96

Student Marshal, Bucknell University Commencement, 2000, 2001
Search Committee for Associate VP for Information Services and Resources, Member, 1996

College

College of Engineering Curriculum Committee, 1992-94, Chair 2005-2006, 2012-13, 2015-2019
College of Engineering Instructional Facilities Committee, 2007-2010, 2016-2019
College of Engineering Computer Committee, 1994-97, Chair 1999-2002, Chair 2006-2008
College of Engineering International Committee, Chair, 2002-2004
College Committee, Bucknell Plan for Engineering Education, 1999-2001 Member, College of Engineering Vision Team, 1997-98
Instructor, Engineering in Training Review Sessions, 1992-present

Department

Chair, Department Review Committee for Tenure and Promotion, 2004 (two-year review); 2006, 2011, 2012 (four-year review); 2000, 2008, 2016 (tenure review); 2007, 2009, 2010, 2023 (full professor)
Chair, Search Committee for Visiting Structures Position, 2009, 2012, 2015
Chair, Search Committee for Tenure-track Structures Position, 2002-2003, 2005-2006 Member, Department Curriculum Committee, 2002-2006
Advisor, Bucknell Chapter of Chi Epsilon, Civil Engineering Honor Society, 1995 - 2002 Co-Advisor, Bucknell Chapter of the American Society of Civil Engineers, 1992-96
Advisor, Bucknell University Civil Engineering Class of '23, 2019-2023; Advisor, Bucknell University Civil Engineering Class of '18, 2014-2018; Advisor, Bucknell University Civil Engineering Class of '10, 2006-2010; Advisor, Bucknell University Civil Engineering Class of '09, 2005-2006; Advisor, Bucknell University Civil Engineering Class of '08, 2004-2005; Advisor, Bucknell University Civil Engineering Class of '07, 2003-2004; Advisor, Bucknell University Civil Engineering Class of '06, 2002-2003; Advisor, Bucknell University Civil Engineering Class of '97, 1995-97; Advisor, Bucknell University Civil Engineering Class of '94, 1992-94

Additional Bucknell Service Activities

Established the Bucknell Chapter of Chi Epsilon

Established the Bucknell Chapter of Chi Epsilon, a national civil engineering honor society; The national organization of Chi Epsilon granted Bucknell University a charter in October of 1997 after we were able to successfully organize and run a university civil engineering honor society for three years. Since this time, the Bucknell Chapter has held many initiation ceremonies and inducted over 200 student members, several faculty members, and many chapter honor members. Chi Epsilon service projects have included lining seven soccer fields for the local American Youth Soccer Organization and participating in the Pennsylvania Department of Transportation's Adopt-a-Highway program. The chapter continues to meet its goal of promoting and recognizing excellence in civil engineering.

Educational Outreach Program: *Bridge Day for Elementary School Students*

Developed and implemented a one-day short course that educates elementary school children about structural engineering. The course includes a slide and video presentation, hands-on assembly of a 25' steel truss bridge, individual construction of small-scale 12" model wood bridges, and distribution of personalized certificates. Since 1997, over 400 first and second graders at Kelly Elementary School in Lewisburg, PA have participated. This program has involved many Bucknell civil engineering students.