



Professor Ronald D. Ziemian

See:

<https://www.bucknell.edu/academics/engineering-college-of/deans-office-staff/ronald-d-ziemian>

<http://www.facstaff.bucknell.edu/ziemian/>

<https://www.aisc.org/contacts/ronald-ziemian/>

<https://scholar.google.com/citations?user=fonOgJIAAAAJ&hl=en>

<http://www.mastan2.com/about.html>

<https://www.metalarchitecture.com/industry-news/ronald-d-ziemian-named-2019-t-r-higgins-lectureship-award-winner>

<http://worldcat.org/identities/lccn-n98103790/>

https://www.researchgate.net/scientific-contributions/2018298395_Ronald_D_Ziemian

Associate Dean of Engineering and Professor Civil and Environmental Engineering
Bucknell University, Pennsylvania, USA

Biography:

Ron Ziemian is a Professor of Civil and Environmental Engineering and is an Associate Dean in the College of Engineering. Professor Ziemian earned his B.S. and M.Eng degrees in Civil and Environmental Engineering from Cornell University, and gained several years of industrial experience at Stone and Webster Engineering Corporation before returning to Cornell for his Ph.D. degree. He joined the Bucknell faculty in 1991, was awarded tenure in 1997, and achieved the rank of full professor in 2003. During his tenure, he has developed a wealth of experience while serving his profession and the university in numerous important capacities.

While at Bucknell, Professor Ziemian has remained an active university citizen. He has served as a member of the Committee on Instruction, Committee on Academic Computing, University Honors Council, and the Committee on Academic Freedom and Tenure, which he also chaired (2009-2011). Professor Ziemian has also provided service to the university community as the faculty advisor for the Bucknell Women's Basketball Team (2006-2012), as a faculty representative to the Board of Trustees Complementary Activities Committee, and as a member, and in many cases the chair, of numerous college and departmental committees. He established the

first Bucknell Chapter of Chi Epsilon, a national civil engineering honor society, and advised this organization (1995-2002) and related service learning activities. In another student-centered initiative, Ron is credited with the design and development of the module-based format currently used in the College's introductory engineering course, ENGR100, for which he also served as the course coordinator (2002-2007).

Professor Ziemian is a structural engineer who applies advanced methods of computational analysis toward developing a better understanding of the stability behavior of metal structures. His doctoral thesis research is credited as one of the foundational works in the application of modern methods of nonlinear analysis in the design of steel structures, for which he earned the American Society of Civil Engineers' highest honor awarded for a technical paper; the ASCE Norman Medal (1994). His research has since progressed to include the development of the direct analysis method, and represents a body of work that continues to be of use to practitioners in the field, and has resulted in significant changes to U.S. steel and aluminum structural design specifications. As such, his scholarly work has been supported by the American Institute of Steel Construction, the Steel Joist Institute, and the Aluminum Association, and he has been recognized with honors including the ASCE Shortridge Hardesty Award (2013), the AISC Special Achievement Award (2006), and Bucknell University's Presidential Professorship (2010). In further acknowledgement of his contributions to this area of research, Professor Ziemian has been invited to deliver numerous keynote and invited talks at international conferences on topics in structural engineering, and has held visiting research positions at the University of Nottingham-UK, University of Sydney-Australia, University of Canterbury-New Zealand, and Vilnius Gediminas Technical University-Lithuania.

At Bucknell, Professor Ziemian's scholarship has served as a platform through which he has mentored numerous students in achieving masters degrees and completing undergraduate honors theses, and has entered directly into the classroom in courses such as Structural Analysis (CEEG 401) and Design of Steel Structures (CEEG 405). His students consistently highlight the positive impact of the depth of his knowledge in these classes, and emphasize their appreciation of learning at the forefront of research trends and emerging design specifications. In recognition of his excellent work with students, Professor Ziemian was awarded Bucknell's Presidential Award for Teaching Excellence (2000).

In other contributions to his field, Professor Ziemian has served as the chair of the Structural Stability Research Council (2007-2013), as a member of numerous professional committees tasked with implementing significant changes to the U.S. steel and aluminum design specifications, and is currently the chair of AISC's Task Committee on Stability. He is a coauthor of the graduate level textbook, *Matrix Structural Analysis* (Wiley, 2000), the editor of the highly cited *Guide to Stability Design Criteria for Metal Structures* (Wiley, 2010), and the author of *MASTAN2*, a popular educational software package for linear and nonlinear structural behavior analysis. Ron has also recently been appointed Co-Editor-in-Chief of the *Journal of Constructional Steel Research*.

Another Award (2019):

AISC T.R. Higgins Lectureship Award

Selected Publications:

Books:

McGuire, W., Gallagher, R. H. & Ziemian, R. D. 2000. *Matrix Structural Analysis*, 2nd edition, Wiley.
Ronald D. Ziemian, *Guide to Stability Design Criteria for Metal Structures*, Sixth Edition, John Wiley & Sons, Inc., 2010, 1120 pages

Journal Articles:

Si-Wei Liu, Ronald D. Ziemian, Liang Chen and Siu-Lai Chan, “Bifurcation and large-deflection analyses of thin-walled beam-columns with non-symmetric open-sections”, Thin-Walled Structures, Vol. 132, pp 287-301, November 2018

About MASTAN2 v3.5 created by R.D. Ziemian et al (from <http://www.mastan2.com/about.html>):

In many ways, MASTAN2 is similar to today's commercially available structural analysis software. The number of pre- and post-processing options, however, have been limited in order to minimize the amount of time needed for a user to become proficient at its use. The program's linear and nonlinear analysis routines are based on the theoretical and numerical formulations presented in the text *Matrix Structural Analysis, 2nd Edition*, by McGuire, Gallagher, and Ziemian (available for free download under the Textbook tab). In this regard, the reader is strongly encouraged to use this software as a tool for demonstration, reviewing examples, solving problems, and perhaps performing analysis and design studies (see the Stability Fun tab). Where MASTAN2 has been written in modular format, the reader is also provided the opportunity to develop and implement additional or alternative analysis routines directly within the program. MASTAN2 is based on MATLAB, a premier software package for numeric computing and data analysis.