

Jerome F. Hajjar

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BIOGRAPHICAL DATA

Date of Birth: (b)(6)
Citizenship: United States of America

Degrees

1988 Ph.D., Structural Engineering, Cornell University
1985 M.S., Structural Engineering, Cornell University
1982 B.S., Engineering Mechanics, *cum laude*, Yale University

Research Interests

Primary research interest is in the area of computational analysis, experimental testing, field investigation, and design of steel and composite steel/concrete buildings, bridges and infrastructure systems; regional simulation; structural stability; and earthquake engineering. Current and past research topics include investigation of the following:

1. Behavior and design of steel and composite steel/concrete structural frame systems subjected to transient dynamic loading.
2. Methodologies for assessing frame stability during the design of steel frame structures, and for using nonlinear analysis directly for steel and composite frame design.
3. Behavior and design of infrastructure systems, including use of autonomous vehicles to capture laser scans and images for automated damage detection.
4. Regional loss assessment and consequence-based risk management of the built infrastructure for hazards.
5. Information technology, including data archiving, telepresence, geometric modeling, and scientific visualization.

Employment Experience and Visiting Positions

- 1/19-present *Affiliated Faculty*
Institute for Experiential Robotics
Northeastern University, Boston, Massachusetts
- 9/16-present *Affiliated Faculty*
Global Resilience Institute
Northeastern University, Boston, Massachusetts
- 1/16-present *Affiliated Faculty*
Department of Marine and Environmental Sciences
Northeastern University, Boston, Massachusetts
- 5/14-present *CDM Smith Professor in Civil Engineering*
Department of Civil and Environmental Engineering
Northeastern University, Boston, Massachusetts
- 11/11-present *Director*
Laboratory for Structural Testing of Resilient and Sustainable Systems (STReSS
Laboratory) , Northeastern University, Boston, Massachusetts
- 3/10-present *Department Chair*
Department of Civil and Environmental Engineering
Northeastern University, Boston, Massachusetts
- 3/10-5/14 *Professor*
Department of Civil and Environmental Engineering
Northeastern University, Boston, Massachusetts
- 7/09-8/09 *Visiting Professor*
Department of Architecture and Building Engineering
Tokyo Institute of Technology, Tokyo, Japan
- 5/09-6/09 *Visiting Professor*
Laboratoire de Genie Civil et Genie Mecanique, Génie Civil et Urbanisme
INSA de Rennes, Rennes, France
- 5/06-5/09 *Chair, Structures Faculty*
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign, Urbana, Illinois

- 8/05-9/07 *Deputy Director, Mid-America Earthquake Center*
College of Engineering
University of Illinois at Urbana-Champaign, Urbana, Illinois
- 8/05-3/10 *Professor and Narbey Khachaturian Faculty Scholar*
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign, Urbana, Illinois
- 9/04-8/05 *Professor*
Department of Civil Engineering
University of Minnesota, Minneapolis, Minnesota
- 9/00-6/01 *UPS Foundation Visiting Professor*
Department of Civil and Environmental Engineering
Stanford University, Stanford, California
- 9/98-8/04 *Associate Professor*
Department of Civil Engineering
University of Minnesota, Minneapolis, Minnesota
- 8/92-8/98 *Assistant Professor*
Department of Civil Engineering
University of Minnesota, Minneapolis, Minnesota
- 3/90-7/92 *Structural Engineer and Associate*
Skidmore, Owings & Merrill
Chicago, Illinois
- 1/88-3/90 *Structural Engineer*
Skidmore, Owings & Merrill
New York, New York
- 6/83-11/87 *Graduate Research Assistant*
Department of Structural Engineering and Program of Computer Graphics
Cornell University, Ithaca, New York
- 9/82-5/83 *Graduate Teaching Assistant*
Department of Structural Engineering
Cornell University, Ithaca, New York

Consulting

- 2019- Skidmore, Owings & Merrill, Chicago, Illinois. Advised on the analysis and design of a supertall building using concrete-filled steel tube mega-columns.
- 2016-2018 Bristol Harbor Group, Bristol, Rhode Island. Advised on the design of a steel bridge.
- 2016-2017 Gilsanz Murray Steficek, New York, New York. Advised on the design of steel moment-resisting connections.
- 2015-2017 Applied Technology Council, NEHRP Consultants Joint Venture, Project Technical Committee, ATC-114, “Analysis, Modeling, and Simulation for Performance-Based Seismic Engineering.” Advised on a project on use of nonlinear analysis for performance-based seismic engineering.
- 2013-2018 Applied Technology Council, NEHRP Consultants Joint Venture, Project Technical Committee, ATC-106 Task Order 32, “Seismic Behavior and Design of Deep, Slender Wide-Flange Structural Steel Beam-Column Members - Phase 2 – Experimental Evaluation.” Advised on a project on understanding the behavior and design of deep beam-columns in steel seismic force resisting systems.
- 2013 Halvorson and Partners, Inc., Chicago, Illinois. Advised on the analysis and design of a tall building in China.
- 2013 Applied Technology Council, NEHRP Consultants Joint Venture, Project Technical Committee, ATC-96 Task Order 32, “Nonlinear Response History Analysis of Steel Moment Frames.” Prepared a report documenting guidelines for performing nonlinear analysis of steel moment frames.
- 2012-2013 Applied Technology Council, NEHRP Consultants Joint Venture, Project Technical Committee, ATC-103 Task Order 29, “Development of Technical Brief on Structural Design Issues - Seismic Design of Steel Special Concentrically Braced Frame Systems.” Prepared a report the seismic design of steel special concentrically braced frames.
- 2012 Guy Nordenson and Associates, New York, New York. Advised on the analysis and design of a five-story government building in Washington, D.C. for which the lateral-resistance system comprised a series of steel frames with composite infill walls.
- 2011 Applied Technology Council, NEHRP Consultants Joint Venture, Project Technical Committee, ATC-90 Task Order 17, “Seismic Behavior and Design of Deep, Slender Wide-Flange Structural Steel Beam-Column Members: Phase 1.”

- Prepared a report documenting a research plan for understanding the behavior and design of deep beam-columns in steel seismic force resisting systems.
- 2009-2011 Nuclear Regulatory Commission, Washington, D.C. Advised on behavior and design of modular composite shield structures for nuclear power plants.
- 2009-2011 Applied Technology Council, NEHRP Consultants Joint Venture, Project Review Panel, ATC-76-6 Task Order 6, "Improved Nonlinear Static Seismic Analysis Procedures – Multiple-Degree-of-Freedom Modeling." Advised on a report prepared on simplified nonlinear analysis procedures for seismic engineering.
- 2008-2009 Midwest Steel, Inc., Detroit, Michigan and Computerized Structural Design, S.C., Milwaukee, Wisconsin. Advised on the non-seismic and seismic design of steel and composite rack structures.
- 2007-2008 Consultec, Toronto, Ontario, Canada. Advised on the review of a cement plant that included large concrete-filled tube columns and connections.
- 2007 KCE Structural Engineers, P.C., Washington, D.C. Advised on the composite construction detailing of a large church in Maryland with partially encased steel reinforced concrete beam-columns.
- 2007 Skidmore, Owings & Merrill, Chicago, Illinois. Advised on the analysis, experimental testing, and design of a tall building using composite steel plate shear walls.
- 2006 Halvorson and Partners, Inc., Chicago, Illinois. Advised on the analysis and design of the one-hundred and eighteen story Russia Tower by Norman Foster in Moscow, Russia. The lateral-resistance system comprised a mega-brace frame consisting of diagonally-oriented steel and reinforced concrete beam-columns.
- 2006 Toltz, King, Duvall, Anderson and Associates, Inc. (TKDA), St. Paul, Minnesota. Advised on the analysis of the Lafayette Street Bridge, St. Paul, Minnesota, which was being retrofitted due to cracking from fatigue of the steel girder bridges.
- 2005 Opus Engineers and Architects, Inc., Minnetonka, Minnesota. Advised on the design of a composite steel/concrete coupling beam linking together two reinforced concrete shear walls in a multi-story residential building in Florida.
- 2004 KCE Structural Engineers, P.C., Washington, D.C. Advised on the repair of fractured concrete-filled steel tube columns in a government building in Washington, D.C.
- 2003 Guy Nordenson and Associates, New York, New York. Advised on the analysis and design assessment of a twenty-one story steel building in New Jersey that was

exhibiting signs of distress due to inadequate stability design by the engineer of record.

- 2002-2005 American Institute of Steel Construction, Chicago, Illinois. Led a team of four engineers in writing, reorganizing, updating, and synthesizing (from contributions received from the AISC Specification Task Committees) the Commentary for the 2005 AISC *Specification for the Design of Structural Steel Buildings*.
- 2001 Halvorson and Kaye Structural Engineers, Inc., Chicago, Illinois. Advised on the analysis and design of the sixty-story Hyatt Tower in Chicago. The lateral-resistance system comprised a mega-brace frame consisting of concrete-filled steel tube beam-columns and braces.
- 1987 Weidlinger Associates, New York, New York. Recommended appropriate numerical techniques suitable for conducting geometric nonlinear analysis of the inflatable roof at the H. H. H. Metrodome in Minneapolis, Minnesota to determine its behavior and capacity.

Awards

Lifetime Achievement

- 2014 CDM Smith Professor of Civil Engineering, Department of Civil and Environmental Engineering, Northeastern University.
- 2013 Fellow, Structural Engineering Institute.
- 2009 Shortridge Hardesty Award, American Society of Civil Engineers. This award is given “for a distinguished engineering career and for outstanding research in the areas of composite behavior, seismic design and steel frame stability contributing to the design standards for steel composite construction.”
- 2007 Fellow, American Society of Civil Engineers.
- 2005 Narbey Khachaturian Faculty Scholar, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign.

Research

- 2018 Robert D. Klein University Lecturer, Northeastern University. This award “honors a member of the faculty who has contributed with distinction to his or her own field of study.” The presentation was entitled “Urban Engineering: New Designs for a Resilient and Sustainable Future.”
- 2018 Faculty Research Team Award, College of Engineering, Northeastern University. This award “recognizes a team of College of Engineering faculty for their recent extraordinary efforts to collaborate on highly impactful and innovative team

research” for research on the project entitled “Identification and Control of Uncertain, Highly Interdependent Processes Involving Humans with Applications to Resilient Emergency.”

- 2016 Moisseiff Award, American Society of Civil Engineers. This award “is given ... to an important paper ... dealing with the broad field of structural design, including applied mechanics as well as the theoretical analysis, or constructive improvement, of engineering structures such as bridges and frames, of any structural material” for a paper in the *Journal of Structural Engineering*, ASCE on experimental testing and design of controlled rocking self-centering steel-braced frames using articulated energy-dissipating fuses.
- 2015 Clemens Herschel Award, Boston Society of Civil Engineers Section, American Society of Civil Engineers. This award “recognizes those individuals who have published papers that have been useful, commendable, and worthy of grateful acknowledgment” for a paper in the *Journal of Structural Engineering*, ASCE on design concepts for controlled rocking of self-centering steel-braced frames using articulated energy-dissipating fuses.
- 2010 Breakthrough Award, *Popular Mechanics*. In recognition of research on seismic engineering systems using controlled rocking of steel frames with articulated energy-dissipating fuses.
- 2005 T. R. Higgins Lectureship Award, American Institute of Steel Construction. This award is given “For outstanding contributions to engineering knowledge of fabricated structural steel.” The award is in part in recognition of accumulated achievement, and in part in recognition of a specific publication or set of publications, which here include the three papers published in *Engineering Journal*, AISC in 2004-2005 on column reinforcement design for seismic and non-seismic moment-resisting connections in steel frame structures.
- 2004 American Institute of Steel Construction Special Achievement Award, American Institute of Steel Construction. This award was given “For the outstanding development of strength and performance theory and criteria for composite columns.”
- 2003 Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers. This prize, given to candidates who are generally 40 years of age or less for notable achievement in research related to civil engineering, was awarded “For the practical implementation of advanced second-order analysis methods in steel design.”
- 2000 Norman Medal, American Society of Civil Engineers. This medal is “Awarded to the author, or authors, of a paper, which shall be judged worthy of special commendation for its merit as a contribution to engineering science.” This is the top award for any paper published by ASCE on any topic in the preceding year,

and was awarded for the paper entitled “Seismic Response of Composite Moment-Resisting Connections. I. Performance. II. Behavior,” published in the *Journal of Structural Engineering*, ASCE, in 1998.

Teaching

- 2008 Engineering Council Award for Excellence in Advising, College of Engineering, University of Illinois at Urbana-Champaign. This award is given in recognition of achievements in undergraduate and graduate advising; it is selected by a faculty committee within the College of Engineering based on nominations from students.
- 2007-2008 List of Teachers Ranked Excellent by Their Students, University of Illinois at Urbana-Champaign. This award is given to those faculty who achieve superior scores in their course evaluations (three times).
- 2001 Charles E. Bowers Faculty Award, Institute of Technology, University of Minnesota. This award is given “In recognition of exceptional interest in and commitment to teaching students in the Institute of Technology at the University of Minnesota.”
- 1998 Taylor Career Development Award, Institute of Technology, University of Minnesota. This award is given “In recognition of exceptional contributions to teaching in the Institute of Technology at the University of Minnesota.” It is given each year to a faculty member being promoted from Assistant Professor to Associate Professor with tenure and is selected from among those candidates receiving such a promotion within the Institute of Technology that year.
- 1996, 1997 Bonestroo, Rosene, Anderlik and Associates Undergraduate Faculty Award, Department of Civil Engineering, University of Minnesota. This award is given “For demonstrated interest in and commitment to undergraduate students and the undergraduate program in civil engineering at the University of Minnesota.” It is selected by the department head and the University of Minnesota American Society of Civil Engineers Student Chapter President based in part upon written votes and comments received from the civil engineering undergraduate students.
- 1995, 1996 Outstanding Instructor Award, Department of Civil Engineering, Institute of Technology Student Board, University of Minnesota. This award is given “In recognition of student appreciation for outstanding instruction in the Institute of Technology at the University of Minnesota.” It is selected by the Institute of Technology Dean and Student Board President based in part upon written votes received from the civil engineering undergraduate students.

Service

- 2016 Certificate of Appreciation, Structural Engineers Association of Massachusetts. This award is given in recognition for outstanding service to the organization.
- 2015 Outstanding Contribution in Reviewing, *Automation in Construction*, Elsevier. This award is given in recognition for outstanding services as a reviewer.
- 2015 Outstanding Contribution in Reviewing, *Engineering Structures*, Elsevier. This award is given in recognition for outstanding services as a reviewer.
- 2009, 2010 Outstanding Reviewer, *Journal of Structural Engineering*, American Society of Civil Engineers. This award is given in recognition for outstanding services as a reviewer.
- 2008 Outstanding Contributions to NEES Community Cyberinfrastructure, George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES), NEES, Inc. This award is given for outstanding contributions to cyberinfrastructure within the NEES Community, including leadership of the NEES Information Technology Strategy Committee and the NEES Task Group for Information Technology Vision.
- 1995 Minnesota Young Engineer of the Year, Minnesota Federation of Engineering Societies and Minnesota Society of Professional Engineers. This award is given “For outstanding achievement in the engineering profession,” and includes consideration of practice, research, and service to the profession and the community.
- 1995 Minnesota Young Civil Engineer of the Year, American Society of Civil Engineers, Minnesota Section. This award is given “For outstanding achievement in the engineering profession,” and includes consideration of practice, research, and service to the profession and the community.

Scholarships and Fellowships

- 2009 JSPS Fellowship Program for Research in Japan, Japan Society for the Promotion of Science.
- 2003 Minnesota Supercomputer Institute Travel Grant, University of Minnesota.
- 2000 Bush Faculty Sabbatical Supplement, University of Minnesota.
- 1998 Minnesota Supercomputer Institute Travel Grant, University of Minnesota.
- 1996 Institute of International Studies and Programs Travel Grant, University of Minnesota.
- 1996 Minnesota Supercomputer Institute Travel Grant, University of Minnesota.
- 1996 Engineering Foundation Travel Grant, Engineering Foundation, New York.

Membership in Professional Societies

American Association for the Advancement of Science (AAAS)

American Concrete Institute (ACI)
 American Institute of Steel Construction (AISC)
 American Society of Civil Engineers (ASCE)
 Architectural Institute of Japan (AIJ)
 Association for International Cooperation and Research in Steel-Concrete Composite Structures (ASCCS)
 Boston Society of Civil Engineers Section (BSCES)
 Consortium of Universities for Research in Earthquake Engineering (CUREE)
 Earthquake Engineering Research Institute (EERI)
 European Association for Earthquake Engineering (EAEE)
 International Association for Shell and Spatial Structures (IASS)
 International Association for Bridge and Structural Engineering (IABSE)
 National Council of Structural Engineering Associations (NCSEA)
 Precast/Prestressed Concrete Institute (PCI)
 Research Council on Structural Connections (RCSC)
 Structural Engineers Association of Massachusetts (SEAMass)
 Structural Stability Research Council (SSRC)

Membership in Engineering Honor Societies

Chi Epsilon
 Sigma Xi

Professional Licensure

2006- Professional Engineer, License No. 062.059380, Illinois (Illinois Department and Professional Regulation).
 2000- Professional Engineer, License No. 40498, Minnesota (Minnesota Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience, and Interior Design -- AELSLAGID).

TEACHING CONTRIBUTIONS

Courses Taught

Northeastern University, 2010-present

Course Number and Title (Semester System)

CIVE 7351 – Behavior of Steel Structures[#]

[#] Extensively revised lecture course

University of Illinois at Urbana-Champaign, 2005-2010

Course Number and Title (Semester System)

CEE 462 – Steel Structures II[#]

CEE 472 – Structural Dynamics

CEE 598 – Nonlinear Analysis of Steel Structures[&]

[#] Extensively revised lecture course

[&] Newly developed lecture course

University of Minnesota, 1992-2005

Course Number and Title (Quarter System)

CE 5600 – Linear Structural Systems

CE 5603 – Construction Materials

CE 5610 – Design of Metal Structures: Introduction

CE 5612 – Design of Metal Structures: Intermediate[#]

CE 8608 – Advanced Analysis and Design of Structures[&]

CE 8620 – Structural Dynamics I[#]

CE 8697 – Seminar: Structures

[#] Extensively revised lecture course

[&] Newly developed lecture course

Course Number and Title (Semester System)

CE 3401 – Linear Structural Analysis

CE 3402 – Construction Materials

CE 4401 – Steel and Reinforced Concrete Design[#]

CE 4413 – Steel Design II[#]

CE 8421 – Structural Dynamics[#]

CE 8442 – Nonlinear Analysis of Structural Systems[&]

CE 8400 – Seminar: Structures

[#] Extensively revised lecture course

[&] Newly developed lecture course

Course Enrollments and Evaluations

University of Minnesota, 1992-2005

The following table presents statistics for questions 12 and 13 of the standard University of Minnesota course evaluation form used between Fall 1992 and Spring 1993.

Question 12: “All things considered, how would you rate this instructor’s teaching in this course?”

Question 13: “All things considered, how would you rate this course?”

The ratings are shown for the University of Minnesota scale of 1 to 7, with 1 being “very poor” and 7 being “exceptional.”

Course and Year	Enrollment	Question #12			Question #13		
		Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
CE 5610 Fall 1992	37	5.43	1.10	5.61	5.23	1.07	5.29
CE 5612 Fall 1993	21	5.84	0.74	5.91	5.84	0.81	5.96
CE 8608 Spr. 1993	5	6.00	0.00	6.00	6.00	0.63	6.00

The following table presents statistics for questions 1 and 2 of the standard University of Minnesota course evaluation form used between Fall 1993 and 2005.

Question 1: “How would you rate the instructor’s overall teaching ability?”

Question 2: “How would you rate the instructor’s knowledge of the subject matter?”

The ratings are shown for the University of Minnesota scale of 1 to 7, with 1 being “very poor” and 7 being “exceptional.”

Course and Year	Enrollment	Question #1			Question #2		
		Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
CE 5610 Fall 1993	33	5.6	0.8	5.7	6.3	0.7	6.4
CE 8620 Win. 1994	16	5.9	0.8	6.0	5.8	1.0	5.9
CE 5610 Spr. 1994	46	5.4	1.4	5.8	6.2	0.8	6.3

CE 5600 Fall 1994	50	6.2	0.8	6.3	6.6	0.6	6.8
CE 8608 Win. 1995	5	5.6	0.8	6.0	6.8	0.4	7.0
CE 5610 Spr. 1995	60	6.3	0.9	6.4	6.8	0.4	6.8
CE 8620 Fall 1995	13	5.9	0.9	6.0	6.0	0.7	6.0
CE 5612 Win. 1996	29	6.2	0.9	6.4	6.4	0.6	6.5
CE 5610 Spr. 1996	58	6.3	0.8	6.5	6.7	0.7	6.8
CE 5612 Win. 1997	33	6.4	0.7	6.7	6.7	0.4	6.8
CE 5610 Spr. 1997	52	6.0	0.8	6.1	6.5	0.6	6.6
CE 5610 Fall 1997	51	6.4	0.7	6.5	6.6	0.5	6.8
CE 5600 Win. 1998	72	6.3	0.7	6.3	6.8	0.4	6.9
CE 8608 Spr. 1998	9	6.3	0.5	6.2	6.7	0.5	6.7
CE 8620 Fall 1998	15	6.3	0.6	6.2	6.7	0.4	6.8
CE 5600 Win. 1999	36	6.2	0.9	6.4	6.8	0.4	6.9
CE 5610 Spr. 1999	26	6.1	0.9	6.2	6.9	0.3	6.9
CE 4401 Fall 1999	40	6.0	0.9	6.1	6.6	0.6	6.7
CE 4413 Spr. 2000	27	6.4	1.0	6.8	6.8	0.5	6.9
CE 8442 Spr. 2000	6	6.5	0.5	6.5	7.0	0.0	7.0
CE 8421 Fall 2001	11	6.3	0.6	6.3	6.5	0.5	6.6
CE 8442 Fall 2001	4	7.0	0.0	7.0	7.0	0.0	7.0
CE 4401 Spr. 2002	46	5.4	1.0	5.6	6.5	0.5	6.6
CE 3401 Fall 2002	55	5.3	1.3	5.5	6.5	0.7	6.7
CE 8421 Fall 2002	11	6.4	0.5	6.3	6.5	0.5	6.5

CE 4401 Spr. 2003	47	5.8	1.1	5.9	6.7	0.6	6.8
CE 8421 Fall 2003	10	6.3	0.7	6.4	6.8	0.4	6.9
CE 4413 Spr. 2004	15	6.1	0.6	6.1	6.7	0.5	6.8
CE 8442 Spr. 2004	4	6.0	1.2	6.5	7.0	0.0	7.0
CE 8421 Fall 2004	12	5.9	0.9	6.0	6.6	0.9	6.8
CE 3401 Spr. 2005	53	5.9	1.1	6.1	6.6	0.8	6.8
CE 4413 Spr. 2005	20	6.4	0.7	6.6	6.9	0.3	6.9

**Mean Values for Question #1 for the Department of Civil Engineering,
University of Minnesota, 1999-2003**

Semester	Required Courses	3xxx and 4xxx Non- Required Courses	5xxx Courses	8xxx Courses
Fall 1999	5.6	5.5	6.0	6.7
Spring 2000	5.4	5.9	5.2	5.9
Fall 2000	5.6	5.6	5.5	5.7
Spring 2001	5.5	5.7	6.0	6.0
Fall 2001	5.7	5.6	5.8	6.0
Spring 2002	5.3	5.7	5.5	6.1
Fall 2002	5.6	5.3	5.9	5.9
Spring 2003	5.3	5.7	6.2	6.2

University of Illinois at Urbana-Champaign, 2005-2010

The following table presents statistics for questions 1 and 2 of the standard University of Illinois at Urbana-Champaign course evaluation form.

Question 1: "Rate the instructor's overall teaching effectiveness."

Question 2: "Rate the overall quality of the course."

Question 3: "Rate the presentation of course material."

The ratings are shown for the University of Illinois scale of 1 to 5, with 1 being “exceptionally low” and 5 being “exceptionally high.”

Course and Year	Enrollment	Question #1		Question #2		Question #3	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
CEE 472 Spr. 2006	30	4.1	0.6	4.3	0.6	4.1	0.7
CEE 462 Fall 2006	28	4.2	1.0	4.3	0.9	4.1	0.8
CEE 462 Fall 2007	34	4.4	0.6	4.5	0.6	4.3	0.6
CEE 598JH Spr. 2008	11	4.8	0.4	5.0	0.0	4.9	0.3
CEE 460 Fall 2008	33	4.5	0.7	4.6	0.6	4.4	0.7
CEE 460 Fall 2009	23	4.0	0.9	4.3	0.8	4.0	0.9
CEE 598JH Spr. 2010	13	4.1	0.7	4.4	0.5	4.4	0.7

Northeastern University, 2010-present

The following table presents statistics for the following question on the standard Northeastern University TRACE course evaluation form.

Question 1: “I learned a lot in this course.”

Question 2: “What is the overall rating of this instructor’s teaching effectiveness.”

The ratings are shown for the Northeastern University scale of 1 to 5, with 1 being “never effective” and 5 being “almost always effective.”

Course and Year	Enrollment	Question #1		Question #2	
		Mean	Std. Dev.	Mean	Std. Dev.
CIVE 7351 Fall 2010	14 (TRACE responses: 6)	4.8	0.37	3.7	0.75
CIVE 7351 Fall 2011	8 (TRACE responses: 7)	3.6	0.63	2.7	0.70
CIVE 7351 Fall 2012	20 (TRACE responses: 11)	4.8	0.40	4.9	0.30
CIVE 7351 Fall 2013	20 (TRACE responses: 8)	5.0	0.00	5.0	0.00
CIVE 7351 Fall 2014	14 (TRACE responses: 7)	5.0	0.00	4.9	0.35
CIVE 7351	18 (TRACE responses: 11)	5.0	NR	4.9	NR

Fall 2015	responses: 10)				
CIVE 7351 Fall 2016	20 (TRACE responses: 12)	4.9	0.3	4.8	0.4
CIVE 7351 Fall 2017	16 (TRACE responses: 11)	4.8	NR	4.7	NR
CIVE 7351 Fall 2018	11 (TRACE responses: 4)	5.0	NR	4.8	NR
CIVE 7351 Fall 2019	12 (TRACE responses: 7)	4.9	NR	4.4	NR

NR: Not reported

Other Course Lectures

Northeastern University, 2010-

2014- Participated in architecture studio critiques for undergraduate and graduate students, School of Architecture.

University of Minnesota, 1992-2005

1992-2005 Taught several lectures on metals in CE 5603 Construction Materials and CE 3402 Construction Materials.

1992-2005 Coordinated CE 8697 Structures Seminar and CE 8400 Structures Seminar several times.

1992-2005 Participated in architecture studio critiques for undergraduate and graduate students.

University of Illinois at Urbana-Champaign, 2005-2010

2006 Co-coordinated teaching of CEE 598 Consequence-Based Risk Management (CRM), a course comprised of video-taped lectures from experts in the field of CRM.

Graduate Student Supervision

Current Students, Northeastern University

Ph.D.

(b)(6)

September 2014 to present. Topic: "Laser-based Structural Sensing and Damage Assessment," Expected Graduation, August 2020.

(b)(6) September 2017 to present. Topic: “Critical Infrastructure Resilience,”
Expected Graduation, August 2021.

(b)(6) September 2017 to present. Topic: “Steel Diaphragm Innovation
Initiative,” Expected Graduation, May 2022.

(b)(6) September 2019 to present. Topic: “Steel Diaphragm Innovation
Initiative,” Expected Graduation, May 2024.

M.S.

(b)(6) Topic: “Steel Diaphragm Innovation Initiative,” Expected
Graduation, May 2021.

Completed Students

Completed Ph.D. Degrees, Northeastern University

Lizhong Wang “Deconstructable Systems for Sustainable Design of Steel and Composite
Structures,” September 2012 through December 2017. Current Position:
Structural Engineer, (b)(6), (b)(6), (b)(6).

Spencer Hallowell “Development and Application of a Hurricane and Breaking Wave Risk
Framework for Offshore Wind Farms,” September 2012 through August
2016. Co-Advisor with A. Myers. Current Position: Structural Engineer,
(b)(6), (b)(6).

Burcu Güldür “Laser-based Structural Sensing and Surface Damage Assessment,”
September 2008 through August 2014. Current Position: Assistant
Professor, Department of Civil Engineering, (b)(6),
(b)(6), (b)(6).

Vitaliy Saykin “A Validated Approach for Modeling Collapse of Steel Structures,”
September 2009 through August 2014. Current Position: Graduate
Engineer, (b)(6), (b)(6), (b)(6).

Completed Ph.D. Degrees, University of Illinois at Urbana-Champaign

Derya Deniz “Stochastic Prediction of Collapse of Building Structures Under Seismic
Excitations,” September 2009 through August 2014. Co-Advisor with J.
Song. Current Position: Assistant Professor, Department of Civil
Engineering, (b)(6) University, (b)(6), (b)(6).

- Joshua S. Steelman “Sacrificial Bearing Components for Quasi-Isolated Response of Bridges Subject to High-Magnitude, Low-Probability Seismic Hazard,” September 2005 through August 2013. Co-Advisor with J. LaFave and L. Fahnestock. Current Position: Assistant Professor, Department of Civil Engineering, University (b)(6), (b)(6), (b)(6).
- Mark D. Denavit “Characterization of Behavior of Steel-Concrete Composite Members and Frames with Applications for Design.” September 2006 through December 2012. Current Position: Assistant Professor, University (b)(6), (b)(6), (b)(6).
- Matthew R. Eatherton “Large-Scale Cyclic and Hybrid Simulation Testing and Development of a Controlled-Rocking Steel Building System with Replaceable Fuses.” September 2006 through August 2010. Current Position: Associate Professor, (b)(6) University, (b)(6), (b)(6).
- Completed Ph.D. Degrees, University of Minnesota*
- Cenk Tort “Reliability-Based Performance-Based Design of Rectangular Concrete-Filled Steel Tube (RCFT) Members and Frames.” September 2000 through August 2007. Current Position: Structural Engineering, (b)(6), (b)(6), (b)(6), Director of Research and Development, (b)(6) University, (b)(6), (b)(6).
- Justin M. Ocel “The Behavior of Thin Hollow Structural Section (HSS) to Plate Connections.” November 2004 through August 2006. Current Position: Research Engineer, (b)(6), (b)(6), (b)(6).
- Katsuyoshi Nozaka “Repair and Retrofit of Steel Bridge Girders with Carbon Fiber Strips.” September 1996 through March 2002. Co-Advisor with C. Shield. Current Position: Professor, Department of Civil Engineering, (b)(6) University, (b)(6), (b)(6), (b)(6).
- Xiangdong Tong “Seismic Behavior of Composite Steel Frame with Reinforced Concrete Infill Wall (S-RCW) Structural System.” September 1996 through March 2001. Co-Advisor with A. Schultz and C. Shield. Current Position: Chief Executive Officer, (b)(6), (b)(6), (b)(6).
- Wen-Hsen Huang “Curved I-Girder Systems.” September 1992 through April 1996. Co-Advisor with T. V. Galambos. Current position: Structural Engineer, (b)(6), (b)(6), (b)(6).

Completed M.S. Degrees, Northeastern University

(b)(6) Topic: “Steel Diaphragm Innovation Initiative,” Expected Graduation, December 2019.

(b)(6) Topic: “Laser-based Structural Sensing and Damage Assessment,” Expected Graduation, December 2019.

Susana Vasquez-Trujillo “Data and Damage Detection for Hurricane Resilience,” May 2018.

Justin Kordas “Thermal Break Strategies for Cladding Systems in Building Structures,” December 2016.

Clayton Brown “Life Cycle Analysis of Deconstructable Flooring Systems,” May 2014.

Aaron Wetherbee “A Synopsis of Sustainable Structural Systems with Rocking, Self-Centering, and Articulated Energy-Dissipating Fuses,” May 2014.

Aynur Hurriyet Sesen “A Synopsis of Sustainable Structural Systems with Rocking, Self-Centering, and Articulated Energy-Dissipating Fuses,” December 2011.

Completed M.S. Degrees (Coursework Only), Northeastern University

(b)(6) May 2016.

Completed M.S. Degrees, University of Illinois at Urbana-Champaign

M.S.

Evgueni Filipov “Nonlinear Seismic Analysis of Quasi-Isolation Systems for Earthquake Protection of Bridges,” December 2011. Co-Advisor with J. LaFave and L. Fahnestock.

Mark D. Denavit “Nonlinear Seismic Analysis of Circular Concrete-Filled Steel Tube Members and Frames,” August 2009.

Lilly Rong “On The Accuracy of Nonlinear Analysis of Continua Using the Discrete Element Method,” August 2009.

Daniel J. Borello “Forensic Collapse Investigation of a Concrete Bridge with Timber Piers,” May 2009. Co-Advisor with B. Andrawes.

Sara B. Walsh “Data Processing of Laser Scans Towards Applications in Structural Engineering Laser-Based Modeling of As-Built Structures,” May 2009.

Kerry S. Hall “Nonlinear Behavior of Controlled-Rocking Steel-Framed Building Systems with Replaceable Energy Dissipating Fuses,” December 2006.

Completed M.S. Degrees (Coursework Only), University of Illinois at Urbana-Champaign

(b)(6)	May 2009.
(b)(6)	December 2006.
(b)(6)	December 2006.
(b)(6)	December 2006.

Served as primary advisor on a large number of additional M.S.C.E. coursework-only students, M.S.C.E./M.Arch. dual degree students, and M.S.C.E./M.B.A dual degree students.

Completed M.S. Plan A Degrees, University of Minnesota

Daniel Krzmarzick	“Testing, Analysis, and Load Rating of Composite Steel Curved I-Girder Bridges,” August 2006.
Sean C. Cotton	“Column Stiffener Detailing and Panel Zone Behavior of Steel Moment Frame Connections,” August 2001. Co-Advisor with R. Dexter.
Sara D. Prochnow	“Local Flange Bending and Local Web Yielding Limit States in Steel Moment-Resisting Connections,” November 2000. Co-Advisor with R. Dexter.
Yanqun Ye	“Nonlinear Analysis of Steel Moment-Frame Connections: Continuity Plate and Doubler Plate Details,” August 2000. Co-Advisor with R. Dexter.
William K. Saari	“Behavior of Shear Connectors in Reinforced Concrete Infill Walls,” February 1999. Co-Advisor with A. Schultz and C. Shield.
Patrick F. Carlson	“The Behavior of Earthquake Resistant, Composite Steel Moment Resisting Frame Connections,” February 1998. Co-Advisor with C. Shield.
Quoc Le	“Transverse Cracking in Bridge Decks: Parametric Study,” February 1998. Co-Advisor with C. French.
Michael A. Gustafson	“Experimental Study of Composite Moment-Resisting Frame Connections Subjected to Cyclic Loading,” August 1997. Co-Advisor with C. Shield. <i>Received the (b)(6) from the James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, for excellence in college-level research and design in structural engineering.</i>

- Alexander O. Molodan “A Cyclic Distributed Plasticity Model for Three-Dimensional Rectangular Concrete-Filled Steel Tube Beam-Columns and Composite Frames,” August 1997.
- Paul H. Schiller “A Distributed Plasticity Formulation for Three-Dimensional Rectangular Concrete-Filled Steel Tube Beam-Columns and Composite Frames,” November 1996.
- Matthew C. Olson “Cyclic Stress-Resultant Plasticity Behavior of Steel Cross-Sections,” August 1996.
- Robert D. Zofkie “Non-Iterative Calculation of Steel Beam-Column Inelastic Axial Design Strength,” August 1996.
- Brett C. Gourley “Cyclic Nonlinear Analysis of Three-Dimensional Concrete-Filled Steel Tube Beam-Columns and Composite Frames,” June 1995.
- Completed M.S. Plan B Degrees, University of Minnesota*
- Steven Gartner “Design and Evaluation of Rectangular Concrete-Filled Tube (RCFT) Frames for Seismic Demand Assessment,” May 2006.
- Christine Freisinger “Testing Strategy for Load Testing of a Horizontally Curved Composite Steel Girder Bridge,” June 2004. Co-Advisor with R. Dexter.
- Cenk Tort “Damage Assessment of Concrete-Filled Steel Tube Members and Frames,” April 2003.
- Joel D. Ray “Live Load Stresses in Steel Curved Girder Bridges,” December 2001.
- Magnus L. R. Carlsson “Stresses in Steel Curved Girder Bridges,” May 2000.
- Xiangdong Tong “Prototype Design and Plastic Analysis of Steel Frames with Composite Reinforced Concrete Infill Walls,” February 1999. Co-Advisor with A. Schultz.
- Katsuyoshi Nozaka “Design of an Experimental Test Facility to Study the Cyclic Behavior of Steel Frames with Reinforced Concrete Infill Walls,” February 1999. Co-Advisor with A. Schultz.
- Seokkwon Jang “Design of an Experimental Test Facility to Study Concrete-Filled Steel Tube Beam-Columns Subjected to Nonproportional, Nonuniform Bending Moment Plus Axial Force,” July 1995.

Gabriel Jimenez “Design of a Ten-Story Two-Way Unbraced Frame Structure using Steel Reinforced Concrete Beam-Columns,” June 1995. Co-Advisor with R. Leon.

Jose Zamudio “Design of a Ten-Story Two-Way Unbraced Frame Structure using Concrete-Filled Tube Beam-Columns,” June 1995. Co-Advisor with R. Leon.

Michael J. Squarzini “An Evaluation of Proposed Techniques for Predicting Column Capacity,” September 1993.

Completed M.C.E. Degrees (Project), University of Minnesota

Laurice Eppers “Transverse Cracking in Bridge Decks: Field Study,” June 1998. Co-Advisor with C. French.

Brian Pulver “Measured Stresses in a Steel Curved Girder Bridge System,” July 1996. Co-Advisor with T. V. Galambos. *Received the (b)(6) from the James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, for excellence in college-level research and design in structural engineering.*

Completed M.C.E. Degrees (Coursework Only), University of Minnesota

(b)(6) May 2005.

(b)(6) June 2004.

(b)(6) December 2003.

(b)(6) May 2002.

(b)(6) September 2001.

(b)(6) December 2000.

(b)(6) February 1999.

(b)(6) March 1998. Co-Advisor with A. Schultz.

Post-Doctoral Associates, Northeastern University

(b)(6) August 2015 to February 2018. Current Position: (b)(6)
 (b)(6), (b)(6), (b)(6)

(b)(6) June 2014 to August 2016. Current Position: Assistant Professor, Department of Civil and Environmental Engineering, University (b)(6) (b)(6).

(b)(6) August 2015 to August 2016. Co-Advisor with A. Myers. Current Position: Associate Professor, Department of Bridge Engineering, (b)(6) University, (b)(6).

(b)(6) September 2010 to August 2013. Co-Advisor with J. Song. Current Position: Senior Structural Engineer, (b)(6) (b)(6).

(b)(6) September 2010 to August 2012. Johns Hopkins University. Co-Advisor with B. Schafer. Current Position: Assistant Professor, Department of Engineering, (b)(6), (b)(6) U.K.

Post-Doctoral Associates, University of Illinois at Urbana-Champaign

(b)(6) July 2009 to June 2011.

Post-Doctoral Associates, University of Minnesota

(b)(6) September 2001 to August 2002 and August 2003 to December 2003. Co-Advisor with R. Dexter. Current Position: Research Engineer, (b)(6) (b)(6), (b)(6).

(b)(6) April 2001 to August 2002. Co-Advisor with A. Schultz and C. Shield. Current Position: Associate Professor, Department of Civil and Environmental Engineering and Construction Management, University (b)(6) (b)(6), (b)(6).

(b)(6) September 1994 to May 1995. Co-Advisor with R. Leon. Current Position: Senior Connection Engineer, (b)(6) (b)(6), (b)(6).

Post-Graduate Researchers, Northeastern University

(b)(6) June 2013 to August 2013. Assistant Professor, Department of Civil Engineering, Hacettepe Üniversitesi, Ankara, Turkey.

Visiting Scholars, Northeastern University

(b)(6) May 2020 to August 2020. M.S. student, Charles Edward Via, Jr. Department of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

(b)(6)

January 2018 to May 2018. Ph.D. student, Department of Civil and Environmental Engineering, Hong Kong Polytechnic University, Hong Kong, China.

(b)(6)

January 2017 to January 2018. Lecturer, College of Civil Engineering, Xi'an University of Architecture and Technology, Xi'an, China.

(b)(6)

July 2017 to October 2017. Ph.D. student, Department of Civil Engineering, Tsinghua University, Beijing, China.

(b)(6)

September 2016 to December 2016. Ph.D. candidate, Department of Architecture and Building Engineering, Tokyo Institute of Technology, Tokyo, Japan

(b)(6)

September 2015 to September 2016. Assistant Professor, College of Civil Engineering, Hainan University, Haikou, Hainan Province, China.

(b)(6)

June 2015 to September 2015. Ph.D. student, Department of Civil Engineering, Tsinghua University, Beijing, China.

(b)(6)

June 2013 to August 2013. Assistant Professor, School of Architecture, Universitat Politècnica de Catalunya, Barcelona, Spain.

(b)(6)

September 2012 to May 2013. Ph.D. candidate, Faculty of Civil Engineering, University of Zagreb, Zagreb, Croatia.

Visiting Scholars, University of Illinois at Urbana-Champaign

(b)(6)

September 2009 to September 2010. Professor, Department of Civil Engineering, Tsinghua University, Beijing, China.

(b)(6)

February 2009 to March 2009. M.S. candidate, Department of Architectural and Building Engineering, Tokyo Institute of Technology, Tokyo, Japan.

(b)(6)

December 2007 to May 2009. Ph.D. candidate, Department of Structural Engineering, Tongji University, Shanghai, China.

(b)(6)

September 2007 to August 2009. Assistant Professor, School of Civil Engineering, Universidad Politécnica de Valencia, Valencia, Spain.

(b)(6) August 2007 to September 2007 and February 2009 to March 2009. Ph.D. candidate, Department of Architectural and Building Engineering, Tokyo Institute of Technology, Tokyo, Japan.

MUST-SIM Laboratory Research Engineer Supervision

(b)(6) February 2007 to July 2008.

(b)(6) February 2006 to February 2007.

MAST Laboratory Research Fellow and Research Coordinator Supervision

(b)(6) April 2003 to August 2005.

(b)(6) October 2001 to August 2005.

Department of Civil and Environmental Engineering Staff Supervision

(b)(6), Office Support Specialist April 2008 to May 2009.

(b)(6), Program Coordinator June 2006 to April 2008.

Undergraduate Student Supervision

Dr. Hajjar has supervised 100 undergraduate research assistants, including over 100 Civil Engineering majors, and 5 Electrical and Computer Engineering majors at Northeastern University, the University of Illinois at Urbana-Champaign, and the University of Minnesota. These students included 33 women and 6 students from underrepresented minorities. He worked directly with the students, supervising them in the performance of computational research, laboratory tests, or field studies. Several of these students received funding from the National Science Foundation (NSF) as part of Research Experiences for Undergraduates, from the American Institute of Steel Construction, from the Minnesota Department of Transportation, or from other funding agencies; three of the students received funding from the University of Illinois Information Trust Institute or the University of Minnesota Supercomputer Center, and several received funding from the University of Minnesota Undergraduate Research Opportunities Program. Subsequently, several of the students won nationally competitive scholarships for which a description of their research activities played a crucial part, including awards from the Barry M. Goldwater Foundation, the American Society of Civil Engineers, the American Institute of Steel Construction, and the Structural Engineers Association of Illinois. Several of the students continued on to graduate schools around the country. As an example, one student worked on one NSF project for two years, conducting a parametric study of the behavior of composite steel/concrete building structures which incorporate concrete-filled steel tube beam-columns. The student contributed to two conference proceeding papers. Subsequently, the student was awarded a multi-year NSF Graduate Fellowship, and did graduate work at Stanford University.

Student Organizations

- 2014- Advisor to the Earthquake Engineering Research Institute Student Chapter at Northeastern University
- 2000-2005 Advisor to the Earthquake Engineering Research Institute Student Chapter at the University of Minnesota
- Invited earthquake engineering practitioners to speak to the Structural Engineering graduate students and faculty.
 - Student chapter made models for a pair of small shake tables and conducted presentations and demonstrations with the shake tables at secondary schools throughout the region.
- 1993-1997 Advisor to the American Society of Civil Engineers Student Chapter at the University of Minnesota
- Student chapter hosted the ASCE Student Chapter Midwest Regional Conference and Steel Bridge Competition, February 20-22, 1997, with nine colleges and universities attending.
 - Student chapter received ASCE/National Certificate of Commendation for outstanding performance, 1994-1995.
 - Student chapter received ASCE/National Certificate of Significant Improvement for showing outstanding improvement in activities from previous year, 1994-1995.
 - Received certificate of appreciation for service to the ASCE Minnesota Section as student chapter faculty advisor, May 18, 1994.

RESEARCH AND SCHOLARLY CONTRIBUTIONS

Publications

U.S. Patents

1. Ayers, J. A., Patterson, M. R., Hajjar, J. F., Stojanovic, M., Mueller, A., Meyer, M. H., and Sagalow, S. (2020). "Robotic Aquaculture System and Methods," Publication No. US 2020/0068858 A1, March 5, 2020, U.S. Patent and Trademark Office, patent application publication.

Books Authored or Co-Authored

1. **Hajjar, J. F.**, White, D. W., Clarke, M. J., Bridge, R. Q., Lui, E. M., Leon, R. T., and Sheikh, T. M. (1997). *Effective Length and Notional Load Approaches for Assessing Frame Stability: Implications for American Steel Design*, American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI) Task Committee on Effective

Length and the ASCE SEI Technical Committee on Load and Resistance Factor Design, ASCE, New York, New York, ISBN 0-7844-0230-2, 442 pp.
(<https://ascelibrary.org/doi/book/10.1061/9780784402306>)

Books Edited or Co-Edited

1. Rassati, G. A., **Hajjar, J. F.**, and Leon, R. T. (eds.) (2020). *Composite Construction in Steel and Concrete VIII*, Proceedings of the United Engineering Foundation Conference on Composite Construction in Steel and Concrete VIII, Jackson Hole, Wyoming, July 29-August 2, 2017, American Institute of Steel Construction, Chicago, Illinois, ISBN 0-7844-0616-2, 1013 pp. (<https://www.aisc.org/globalassets/product-files-not-searched/publications/conference-proceedings/p705-20w.pdf>)
2. Carter, C. J. and **Hajjar, J. F.** (eds.) (2017). *Connections in Steel Structures VIII, Proceedings of the Eighth International Workshop on Connections in Steel Structures*, May 25-28, 2016, American Institute of Steel Construction, Chicago, Illinois, ISBN 978-1-56424-062-0, 828 pp. (https://www.aisc.org/education/continuingeducation/education-archives/connections-in-steel-structures-viii/#.WsqqiK_rtEY)
3. **Hajjar, J. F.**, Hosain, M., Easterling, W. S., and Shahrooz, B. M. (eds.) (2002). *Composite Construction in Steel and Concrete IV*, Proceedings of the United Engineering Foundation Conference on Composite Construction in Steel and Concrete IV, Banff, Alberta, Canada, May 28-June 2, 2000, American Society of Civil Engineers, Reston, Virginia, ISBN 0-7844-0616-2, 1013 pp. (<https://ascelibrary.org/doi/book/10.1061/9780784406168>)
4. **Hajjar, J. F.** and Leon, R. T. (eds.) (1997). *Innovations in Structural Design: Strength, Stability, Reliability. A Symposium Honoring Theodore V. Galambos*, Structural Stability Research Council, Bethlehem, Pennsylvania, ISBN 1-879749-63-7, 228 pp.

Book Chapters

1. Bhatia, U., Traylor, A., Moskos, C., Blumenfeld, L., Bressler, L., Hall, T. Clark, K., Deng, N., Kumar, D., Kodra, E., **Hajjar, J. F.**, Flynn, S. E., Koutsopoulos, H., and Ganguly, A. R. (2017). "Climate Hazards and Critical Infrastructures Resilience," Chapter 3, Section: Climate Change Adaptation, *Encyclopedia of GIS*, Shekhar, S., Xiong, H., and Zhou, X. (eds.), Springer Link. (http://dx.doi.org/10.1007/978-3-319-23519-6_1634-3)

Refereed Papers in Journals

1. Peterman, K., Webster, M. D., D'Aloisio, J. A., and **Hajjar, J. F.** (2020). "Creep Response of Fiber Reinforced Polymers in Flatwise Compression," *Journal of Composites in Construction*, ASCE, submitted for publication.

2. Yan, Y., Uthaman, A., and **Hajjar, J. F.** (2020). “Towards Automated Detection and Quantification of Concrete Cracks using Integrated RGB Images and Lidar Data from Unmanned Aircraft System,” *Automation in Construction*, accepted for publication.
3. Peterman, K., Kordas, J., Webster, M. D., D’Aloisio, J. A., and **Hajjar, J. F.** (2020). “Structural Performance of Axially- and Laterally-Loaded Cantilevers with Thermally-Improved Detailing,” *Journal of Constructional Steel Research*, ASCE, accepted for publication.
4. Yan, Y., Uthaman, A., and **Hajjar, J. F.** (2020). “Automated Extraction of Structural Elements of Steel Girder Bridges from Laser Point Clouds,” *Automation in Construction*, accepted for publication.
5. Güldür Erkal, B. and **Hajjar, J. F.** (2020). “Laser-based Concrete Defect Detection and Classification with Artificial Neural Network Classifier,” *Engineering Structures*, accepted for publication.
6. Peterman, K., Kordas, J., Webster, M. D., D’Aloisio, J. A., and **Hajjar, J. F.** (2020). “Structural Performance of Steel Shelf Angles with Thermally-Improved Detailing,” *Journal of Structural Engineering*, ASCE, 146(10), Paper No. 04020218. [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002778](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002778)
7. Güldür Erkal, B. and **Hajjar, J. F.** (2020). “Using Extracted Member Properties for Laser-Based Surface Damage Detection and Quantification,” *Structural Control and Health Monitoring*, 27(11), Paper No. e2616. <https://doi.org/10.1002/stc.2616>
8. Bai, R., **Hajjar, J. F.**, Liu, S.-W., and Chan, S.-L. (2020). “A Mixed-Field Timoshenko Beam-Column Element for Direct Analysis of Tapered I-Sections Members,” *Journal of Constructional Steel Research*, 172, Paper No. 106157. (<https://doi.org/10.1016/j.jcsr.2020.106157>)
9. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2020). “Design for Deconstruction Using Sustainable Composite Beams with Precast Concrete Planks and Clamping Connectors,” *Journal of Structural Engineering*, ASCE, 146(8), Paper No. 04020158-1. ([https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002659](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002659))
10. Zhang, R., **Hajjar, J. F.**, and Sun, H. (2020). “A Machine Learning Approach for Sequence Clustering with Applications to Ground Motion Selection,” *Journal of Engineering Mechanics*, ASCE, 146(6), Paper No. 04020040. ([https://doi.org/10.1061/\(ASCE\)EM.1943-7889.0001766](https://doi.org/10.1061/(ASCE)EM.1943-7889.0001766))
11. Saykin, V. V., Nguyen, T. H., **Hajjar, J. F.**, Deniz, D., and Song, J. (2020). “The Effect of Triaxiality on Finite Element Deletion Strategies for Simulating Fracture in Steel Structures,” *Engineering Structures*, 220, Paper No. 110364. (<https://doi.org/10.1016/j.engstruct.2020.110364>)

12. Wang, J.-J., Liu, C., Fan, J. S., **Hajjar J. F.**, and Nie, X. (2019). "Triaxial Concrete Constitutive Model for Simulation of Composite Plate Shear Wall-Concrete Encased: THUC3," *Journal of Structural Engineering*, ASCE, 145(9), Paper No. 04019088-1. ([https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002355](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002355))
13. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2019). "Pushout Tests on Deconstructable Steel-Concrete Shear Connections in Sustainable Composite Beams," *Journal of Constructional Steel Research*, 153, 618-637. (<https://doi.org/10.1016/j.jcsr.2018.10.020>)
14. Deniz, D., Song, J., and **Hajjar, J. F.** (2018). "Energy-based Sidesway Collapse Fragilities for Ductile Structural Frames under Earthquake Loadings," *Engineering Structures*, 174, 282-294. (<https://doi.org/10.1016/j.engstruct.2018.07.019>)
15. Eckelman, M. J., Brown, C., Troup, L. N., Wang, L., Webster, M. D., and **Hajjar, J. F.** (2018). "Life Cycle Energy and Environmental Benefits of Novel Design-for-Deconstruction Structural Systems in Steel Buildings," *Building and Environment*, 143, 421-430. (<https://doi.org/10.1016/j.buildenv.2018.07.017>)
16. Hallowell, S. T., Myers, A. T., Arwade, S. R., Pang, W., Rawal, P., Hines, E., **Hajjar, J. F.**, Qiao, C., Valamanesh, V., Wei, K., Carswell, W., Fontana, C. (2018). "Hurricane Risk Assessment of Offshore Wind Turbines," *Renewable Energy*, 125, 234-249. (<https://doi.org/10.1016/j.renene.2018.02.090>)
17. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2018). "Elastic Flexural Rigidity of Steel-Concrete Composite Columns," *Engineering Structures*, 160, 293-303. (<https://doi.org/10.1016/j.engstruct.2018.01.044>)
18. Steelman, J. S., Fahnestock, L. A., **Hajjar, J. F.**, and LaFave, J. M. (2018). "Cyclic Experimental Behavior of Nonseismic Elastomeric Bearings with Stiffened Angle Side Retainer Fuses for Quasi-Isolated Seismic Bridge Response," *Journal of Bridge Engineering*, ASCE, 23(1), Paper No. 04017120. ([http://dx.doi.org/10.1061/\(ASCE\)BE.1943-5592.0001170](http://dx.doi.org/10.1061/(ASCE)BE.1943-5592.0001170))
19. Güldür Erkal, B. and **Hajjar, J. F.** (2017). "Laser-Based Surface Damage Detection and Quantification Using Predicted Surface Properties," *Automation in Construction*, 83, 285-302. (<http://dx.doi.org/10.1016/j.autcon.2017.08.004>)
20. Saykin, V. V., Nguyen, T. H., **Hajjar, J. F.**, Deniz, D., and Song, J. (2017). "Material Characterization Using Finite Element Deletion Strategies for Collapse Modeling of Steel Structures," *Engineering Structures*, 147, 125-133. (<http://dx.doi.org/10.1016/j.engstruct.2017.05.059>)
21. Nguyen, T. H., Le, C. H., and **Hajjar, J. F.** (2017). "Topology Optimization Using the P-version of the Finite Element Method," *Structural and Multidisciplinary Optimization*, 56(3), 571-586. (<http://dx.doi.org/10.1007/s00158-017-1675-7>)

22. Deniz, D., Song, J., and **Hajjar, J. F.** (2017). "Energy-based Seismic Collapse Criterion for Ductile Planar Structural Frames," *Engineering Structures*, 141, 1-13. (<http://dx.doi.org/10.1016/j.engstruct.2017.02.051>)
23. Zhou, M., Tao, M.-X., Fan, J.-S., **Hajjar, J. F.**, and Nie, J.-G. (2017). "Experimental Study on Confining-Strengthening, Confining-Stiffening, and Fractal Cracking of Circular Concrete Filled Steel Tubes under Axial Tension," *Engineering Structures*, 133, 186-199. (<http://dx.doi.org/10.1016/j.engstruct.2016.12.008>)
24. Wei, K., Arwade, S. R., Myers, A. T., Hallowell, S., **Hajjar, J. F.**, Hines, E. M., and Pang, W. (2016). "Toward Performance-based Evaluation for Offshore Wind Turbine Jacket Support Structures," *Renewable Energy*, 97, 701-721. (<http://dx.doi.org/10.1016/j.renene.2016.06.028>)
25. Valamanesh, V., Myers, A. T., Arwade, S. R., **Hajjar, J. F.**, Hines, E. M., and Pang, W. (2016). "Wind-wave Prediction Equations for Probabilistic Offshore Hurricane Hazard Analysis," *Natural Hazards*, 83(1), 1-22. (<http://dx.doi.org/10.1007/s11069-016-2331-z>)
26. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2016). "Seismic Performance Factors for Moment Frames with Steel-Concrete Composite Columns and Steel Beams," *Earthquake Engineering and Structural Dynamics, Special Issue on Earthquake-Induced Collapse of Structural Systems*, 45(10), 1685-1703. (<http://dx.doi.org/10.1002/eqe.2737>)
27. Denavit, M. R., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2016). "Cross-Section Strength of Circular Concrete-Filled Steel Tube Beam-Columns," *Engineering Journal*, AISC, 53(2), Paper No. 2015-21, 99-105.
28. Denavit, M. R., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2016). "Stability Analysis and Design of Composite Structures," *Journal of Structural Engineering*, ASCE, 142(3), Paper No. 04015157. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001434](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001434))
29. Steelman, J. S., Fahnestock, L. A., **Hajjar, J. F.**, and LaFave, J. M. (2016). "Performance of Non-Seismic PTFE Sliding Bearings when Subjected to Seismic Demands," *Journal of Bridge Engineering*, ASCE, 21(1), Paper No. 04015028. ([http://dx.doi.org/10.1061/\(ASCE\)BE.1943-5592.0000777](http://dx.doi.org/10.1061/(ASCE)BE.1943-5592.0000777))
30. Eatherton, M. R., Ma, X., Krawinkler, H., Deierlein, G. G., and **Hajjar, J. F.** (2014). "Quasi-Static Behavior of Controlled Rocking Steel Frames," *Journal of Structural Engineering*, ASCE, 140(11), Paper No. 04014083. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001005](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001005))
31. Eatherton, M. R., Ma, X., Krawinkler, H., Mar, D., Billington, S., **Hajjar, J. F.**, and Deierlein, G. G. (2014). "Design Concepts for Controlled Rocking of Self-Centering Steel-Braced Frames," *Journal of Structural Engineering*, ASCE, 140(11), Paper No. 04014082. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001047](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001047))

32. Eatherton, M. R. and **Hajjar, J. F.** (2014). “Hybrid Simulation Testing of a Self-Centering Rocking Steel Braced Frame System,” *Earthquake Engineering and Structural Dynamics*, 43(11), 1725-1741. (<http://dx.doi.org/10.1002/eqe.2419>)
33. Perea, T., Leon, R. T., **Hajjar, J. F.**, and Denavit, M. D. (2014). “Full-Scale Tests of Slender Concrete-Filled Steel Tubes: Interaction Behavior,” *Journal of Structural Engineering*, ASCE, 140(9), Paper No. 04014054. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0000949](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0000949))
34. Liu, X.-G., Tao, M.-X., Fan, J.-S., and **Hajjar, J. F.** (2014). “Comparative Study of Design Procedures for CFST-to-Steel Girder Panel Zone Shear Strength,” *Journal of Constructional Steel Research*, 94, 114-121. (<http://dx.doi.org/10.1016/j.jcsr.2013.11.010>)
35. Szyniszewski, S., Smith, B. H., **Hajjar, J. F.**, Schafer, B. W., and Arwade, S. R. (2014). “The Mechanical Properties of a Sintered, Hollow Sphere, Steel Foam,” *Materials and Design*, 54, 1083-1094. (<http://dx.doi.org/10.1016/j.matdes.2013.08.045>)
36. Steelman, J. S., Filipov, E. T., Fahnestock, L. A., Revell, J. R., LaFave, J. M., **Hajjar, J. F.**, and Foutch, D. A. (2014). “Experimental Behavior of Steel Fixed Bearings and Implications for Seismic Bridge Response,” *Journal of Bridge Engineering, Special Issue: Recent Advances in Seismic Design, Analysis and Protection of Highway Bridges*, ASCE, 19(8), Paper No. A4014007. ([http://dx.doi.org/10.1061/\(ASCE\)BE.1943-5592.0000540](http://dx.doi.org/10.1061/(ASCE)BE.1943-5592.0000540))
37. Walsh, S. B., Borello, D. J., Güldür, B., and **Hajjar, J. F.** (2013). “Data Processing of Point Clouds for Object Detection for Structural Engineering Applications,” *Computer-Aided Civil and Infrastructure Engineering*, 28(7), 495-508. (<http://dx.doi.org/10.1111/mice.12016>)
38. Filipov, E. T., Fahnestock, L. A., LaFave, J. M., **Hajjar, J. F.**, Foutch, D. A., and Steelman, J. S. (2013). “Seismic Performance of Highway Bridges with Fusing Bearing Components for Quasi-Isolation,” *Earthquake Engineering and Structural Dynamics*, 42(9), 1375–1394. (<http://dx.doi.org/10.1002/eqe.2277>)
39. Steelman, J. S., Fahnestock, L. A., Filipov, E. T., LaFave, J. M., **Hajjar, J. F.**, Foutch, D. A. (2013). “Shear and Friction Response of Non-Seismic Laminated Elastomeric Bridge Bearings Subject to Seismic Demands,” *Journal of Bridge Engineering*, ASCE, 18(7), 612-623. ([http://dx.doi.org/10.1061/\(ASCE\)BE.1943-5592.0000406](http://dx.doi.org/10.1061/(ASCE)BE.1943-5592.0000406))
40. Perea, T., Leon, R. T., **Hajjar, J. F.**, and Denavit, M. D. (2013). “Full-Scale Tests of Slender Concrete-Filled Steel Tubes: Axial Behavior,” *Journal of Structural Engineering, Special Issue: NEES I. Advances in Earthquake Engineering*, ASCE, 139(7), 1249-1262. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0000784](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0000784))
41. Filipov, E. T., Fahnestock, L. A., Steelman, J. S., **Hajjar, J. F.**, LaFave, J. M., Foutch, D. A. (2013). “Evaluation of Quasi-isolated Seismic Bridge Behavior using Nonlinear Bearing

- Models,” *Engineering Structures*, 49(1), 168-181.
(<http://dx.doi.org/10.1016/j.engstruct.2012.10.011>)
42. Takeuchi, T., **Hajjar, J. F.**, Matsui, R., Nishimoto, K., and Aiken, I. (2012). “Effect of Local Buckling Core Plate Restraint in Buckling Restrained Braces,” *Engineering Structures*, 44, 304-411. (<http://dx.doi.org/10.1016/j.engstruct.2012.05.026>).
 43. Smith, B. H., Szyniszewski, S., **Hajjar, J. F.**, Schafer, B. W., and Arwade, S. R. (2012). “Characterization of Steel Foams for Structural Components” *Metals*, Vol. 2(4), 399-410. (<http://dx.doi.org/10.3390/met2040399>)
 44. Zhang, J., Denavit, C. **Hajjar, J. F.**, and Lu, X. (2012). “Bond Behavior of Concrete-Filled Steel Tube (CFT) Structures,” *Engineering Journal*, AISC, 49(4) 169-185. *Errata*: 50(3), 201-203.
 45. Denavit, M. D. and **Hajjar, J. F.** (2012). “Nonlinear Seismic Analysis of Circular Concrete-Filled Steel Tube Members and Frames,” *Journal of Structural Engineering*, ASCE, 138(9), 1089-1098. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0000544](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0000544))
 46. Szyniszewski, S., Smith, B. H., **Hajjar, J. F.**, Arwade, S. R., and Schafer, B. W. (2012). “Local Buckling Strength of Steel Foam Sandwich Panels,” *Thin-Walled Structures*, 59, 11-19. (<http://dx.doi.org/10.1016/j.tws.2012.04.014>)
 47. Hashash, Y., Mwafy, A., Elnashai, A., and **Hajjar, J. F.** (2012). “Development of a Multi-Disciplinary Graduate Course on Consequence-Based Earthquake Risk Management,” *International Journal of Continuing Engineering Education and Life-Long Learning*, 22(1/2), 127-147. (<http://dx.doi.org/10.1504/IJCEELL.2012.047039>)
 48. Smith, B. H., Szyniszewski, S., **Hajjar, J. F.**, Schafer, B. W., Arwade, S. R. (2012). “Steel Foam for Structures: a Review of Applications, Manufacturing, Material Properties and Modeling,” *Journal of Constructional Steel Research*, 71, 1-10. (<http://dx.doi.org/10.1016/j.jcsr.2011.10.028>)
 49. Deierlein, G. G., Krawinkler, H., Ma, X., Eatherton, M., **Hajjar, J. F.**, Takeuchi, T., Kasai, K., and Midorikawa, M. (2011). “Earthquake Resilient Steel Braced Frames with Controlled Rocking and Energy Dissipating Fuses,” *Steel Construction: Design and Research*, 4(3), 171-175. (<http://dx.doi.org/10.1002/stco.201110023>)
 50. Eatherton, M. and **Hajjar, J. F.** (2011). “Residual Drifts of Self-Centering Systems Including Effects of Ambient Building Resistance,” *Earthquake Spectra*, 27(3), 719-744. (<http://dx.doi.org/10.1193/1.3605318>)
 51. Denavit, M. D., Borello, D. J., and **Hajjar, J. F.** (2011). “Behavior of Bolted Steel Slip-Critical Connections with Fillers. II. Behavior,” *Journal of Constructional Steel Research*, 67(3), 398-406. (<http://dx.doi.org/10.1016/j.jcsr.2010.10.001>)

52. Borello, D. J., Denavit, M. D., and **Hajjar, J. F.** (2011). "Behavior of Bolted Steel Slip-Critical Connections with Fillers. I. Performance," *Journal of Constructional Steel Research*, 67(3), 379-388. (<http://dx.doi.org/10.1016/j.jcsr.2010.10.003>)
53. Tort, C. and **Hajjar, J. F.** (2010). "A Mixed Finite Element for Three-Dimensional Nonlinear Dynamic Analysis of Rectangular Concrete-Filled Steel Tube Beam-Columns," *Journal of Engineering Mechanics*, ASCE, 136(11), 1329-1339. ([http://dx.doi.org/10.1061/\(ASCE\)EM.1943-7889.0000179](http://dx.doi.org/10.1061/(ASCE)EM.1943-7889.0000179))
54. Borello, D. J., Andrawes, B., **Hajjar, J. F.**, Olson, S. M., and Hansen, J. (2010). "Experimental and Analytical Investigation of Bridge Timber Piles under Eccentric Loads," *Engineering Structures*, 32(8), 2237-2246. (<http://dx.doi.org/10.1016/j.engstruct.2010.03.026>)
55. Tort, C. and **Hajjar, J. F.** (2010). "Mixed Finite Element Modeling of Rectangular Concrete-Filled Steel Tube (RCFT) Members and Frames under Static and Dynamic Loads," *Journal of Structural Engineering*, ASCE, 136(6), 654-664. ([http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0000158](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0000158))
56. **Hajjar, J. F.**, Krzmarzick, D., and Pallarés, L. (2010). "Measured Behavior of Curved Composite I-Girder Bridges," *Journal of Constructional Steel Research*, 66(3), 351-368. (<http://dx.doi.org/10.1016/j.jcsr.2009.10.001>)
57. Pallarés, L. and **Hajjar, J. F.** (2010). "Headed Steel Stud Anchors in Composite Structures: Part II. Tension and Interaction," *Journal of Constructional Steel Research*, 66(2), 213-228. (<http://dx.doi.org/10.1016/j.jcsr.2009.08.008>)
58. Pallarés, L. and **Hajjar, J. F.** (2010). "Headed Steel Stud Anchors in Composite Structures: Part I. Shear," *Journal of Constructional Steel Research*, 66(2), 198-212. (<http://dx.doi.org/10.1016/j.jcsr.2009.08.009>)
59. Takeuchi, T., **Hajjar, J. F.**, Matsui, R., Nishimoto, K., and Aiken, I. (2010). "Local Buckling Restraint Condition for Core Plates in Buckling Restrained Braces," *Journal of Constructional Steel Research*, 66(2), 139-149. (<http://dx.doi.org/10.1016/j.jcsr.2009.09.002>)
60. Steelman, J. S. and **Hajjar, J. F.** (2009). "Influence of Inelastic Seismic Response Modeling on Regional Loss Estimation," *Engineering Structures*, 31(12), 2976-2987. (<http://dx.doi.org/doi:10.1016/j.engstruct.2009.07.026>)
61. Leon, R. T. and **Hajjar, J. F.** (2008). "Limit State Response of Composite Columns and Beam Columns: Part II. Application of Design Provisions for the 2005 AISC Specification," *Engineering Journal*, AISC, 45(1), 21-46.

62. Leon, R. T., Kim, D. J., and **Hajjar, J. F.** (2007). "Limit State Response of Composite Columns and Beam Columns: Part I. Formulation of Design Provisions for the 2005 AISC Specification," *Engineering Journal*, AISC, 44(4), 341-358.
63. Lee, D., Cotton, S. C., **Hajjar, J. F.**, Dexter, R. J., and Ye, Y. (2005). "Cyclic Behavior of Steel Moment-Resisting Connections Reinforced by Alternative Column Stiffener Details: I. Connection Performance and Continuity Plate Detailing," *Engineering Journal*, AISC, 42(4), 189-214.
64. Lee, D., Cotton, S. C., **Hajjar, J. F.**, Dexter, R. J., and Ye, Y. (2005). "Cyclic Behavior of Steel Moment-Resisting Connections Reinforced by Alternative Column Stiffener Details: II. Panel Zone Behavior and Doubler Plate Detailing," *Engineering Journal*, AISC, 42(4), 215-238.
65. Bruneau, M., Engelhardt, M. D., Filiatrault, A., Goel, S. C., Itani, A., **Hajjar, J. F.**, Leon, R. T., Ricles, J. M., Stojadinovic, B., Uang, C.-M. (2005). "Review of Selected Recent Research on U.S. Seismic Design and Retrofit Strategies for Steel Structures," *Progress in Structural Engineering and Materials*, 7, 103-114. (<http://dx.doi.org/doi:10.1002/pse.192>)
66. Nozaka, K., Shield, C. K., and **Hajjar, J. F.** (2005). "Design of a Test Specimen to Assess the Effective Bond Length of Carbon Fiber Reinforced Polymer Strips Bonded to Fatigued Steel Bridge Girders," *Journal of Composites for Construction*, ASCE, 9(4), 304-312. ([http://dx.doi.org/10.1061/\(ASCE\)1090-0268\(2005\)9:4\(304\)](http://dx.doi.org/10.1061/(ASCE)1090-0268(2005)9:4(304)))
67. Nozaka, K., Shield, C. K., and **Hajjar, J. F.** (2005). "Effective Bond Length of Carbon Fiber Reinforced Polymer Strips Bonded to Fatigued Steel Bridge I-Girders," *Journal of Bridge Engineering*, ASCE, 10(2), 195-205. ([http://dx.doi.org/10.1061/\(ASCE\)1084-0702\(2005\)10:2\(195\)](http://dx.doi.org/10.1061/(ASCE)1084-0702(2005)10:2(195)))
68. Tong, X., **Hajjar, J. F.**, Schultz, A. E., and Shield, C. K. (2005). "Cyclic Behavior of Composite Steel Frame-Reinforced Concrete Infill Wall Structural System," *Journal of Constructional Steel Research*, 61(4), 531-552. (<http://dx.doi.org/10.1016/j.jcsr.2004.10.002>)
69. Tort, C. and **Hajjar, J. F.** (2004). "Damage Assessment of Rectangular Concrete-Filled Steel Tubes for Performance-Based Design," *Earthquake Spectra*, 20(4), 1317-1348. ([http://dx.doi.org/10.1061/40826\(186\)37](http://dx.doi.org/10.1061/40826(186)37))
70. Saari, W., **Hajjar, J. F.**, Schultz, A. E., and Shield, C. K. (2004). "Behavior of Shear Studs in Steel Frames with Reinforced Concrete Infill Walls," *Journal of Constructional Steel Research*, 60(10), 1453-1480. (<http://dx.doi.org/10.1016/j.jcsr.2004.03.003>)
71. **Hajjar, J. F.**, Dexter, R. J., Ojard, S. D., Ye, Y., and Cotton, S. C. (2003). "Continuity Plate Detailing for Steel Moment-Resisting Connections," *Engineering Journal*, AISC, 40(4), 189-211.

72. **Hajjar, J. F.** (2003). "Evolution of Stress-Resultant Loading and Limit Surfaces in Cyclic Plasticity of Steel Wide-Flange Cross Sections," *Journal of Constructional Steel Research*, 59(6), 713-750. ([http://dx.doi.org/10.1016/S0143-974X\(02\)00063-9](http://dx.doi.org/10.1016/S0143-974X(02)00063-9))
73. **Hajjar, J. F.** (2002). "Composite Steel and Concrete Structural Systems for Seismic Engineering," *Journal of Constructional Steel Research*, 58(5-8), 703-723. ([http://dx.doi.org/10.1016/S0143-974X\(01\)00093-1](http://dx.doi.org/10.1016/S0143-974X(01)00093-1))
74. Galambos, T. V., **Hajjar, J. F.**, Huang, W.-H., Pulver, B. E., Leon, R. T., and Rudie, B. J. (2000). "Comparison of Measured and Computed Stresses in a Steel Curved Girder Bridge," *Journal of Bridge Engineering*, ASCE, 5(3), 191-199. ([http://dx.doi.org/10.1061/\(ASCE\)1084-0702\(2000\)5:3\(191\)](http://dx.doi.org/10.1061/(ASCE)1084-0702(2000)5:3(191)))
75. **Hajjar, J. F.** (2000). "Concrete-Filled Steel Tube Columns under Earthquake Loads," *Progress in Structural Engineering and Materials*, 2(1), 72-82. ([http://dx.doi.org/10.1002/\(SICI\)1528-2716\(200001/03\)2:1<72::AID-PSE9>3.0.CO;2-E](http://dx.doi.org/10.1002/(SICI)1528-2716(200001/03)2:1<72::AID-PSE9>3.0.CO;2-E))
76. White, D. W. and **Hajjar, J. F.** (2000). "Stability of Steel Frames: The Cases for Simple Elastic and Rigorous Inelastic Analysis/Design Procedures," *Engineering Structures*, 22(2), 155-167. ([http://dx.doi.org/10.1016/S0141-0296\(98\)00105-9](http://dx.doi.org/10.1016/S0141-0296(98)00105-9))
77. French, C. W., Eppers, L. J., Le, Q., and **Hajjar, J. F.** (1999). "Transverse Cracking in Concrete Bridge Decks," *Transportation Research Record*, TRB, 1688, 1-29. (<http://dx.doi.org/10.3141/1688-03>)
78. **Hajjar, J. F.**, Gourley, B. C., O'Sullivan, D. P., and Leon, R. T. (1998). "Analysis of Mid-Rise Steel Frame Damaged in Northridge Earthquake," *Journal of Performance of Constructed Facilities*, ASCE, 12(4), 221-231. ([http://dx.doi.org/10.1061/\(ASCE\)0887-3828\(1998\)12:4\(221\)](http://dx.doi.org/10.1061/(ASCE)0887-3828(1998)12:4(221)))
79. O'Sullivan, D. P., **Hajjar, J. F.**, and Leon, R. T. (1998). "Repairs to Mid-Rise Steel Frame Damaged in Northridge Earthquake," *Journal of Performance of Constructed Facilities*, ASCE, 12(4), 213-220. ([http://dx.doi.org/10.1061/\(ASCE\)0887-3828\(1998\)12:4\(213\)](http://dx.doi.org/10.1061/(ASCE)0887-3828(1998)12:4(213)))
80. **Hajjar, J. F.**, Leon, R. T., Gustafson, M. A., and Shield, C. K. (1998). "Seismic Response of Composite Moment-Resisting Connections. II. Behavior," *Journal of Structural Engineering*, ASCE, 124(8), 877-885. ([http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(1998\)124:8\(877\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(1998)124:8(877)))
81. Leon, R. T., **Hajjar, J. F.**, and Gustafson, M. A. (1998). "Seismic Response of Composite Moment-Resisting Connections. I. Performance," *Journal of Structural Engineering*, ASCE, 124(8), 868-876. ([http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(1998\)124:8\(868\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(1998)124:8(868)))
82. **Hajjar, J. F.**, Schiller, P. H., and Molodan, A. (1998). "A Distributed Plasticity Model for Concrete-Filled Steel Tube Beam-Columns with Interlayer Slip," *Engineering Structures*, 20(8), 663-676. ([http://dx.doi.org/doi:10.1016/S0141-0296\(97\)00107-7](http://dx.doi.org/doi:10.1016/S0141-0296(97)00107-7))

83. **Hajjar, J. F.**, Molodan, A., and Schiller, P. H. (1998). "A Distributed Plasticity Model for Cyclic Analysis of Concrete-Filled Steel Tube Beam-Columns and Composite Frames," *Engineering Structures*, 20(4-6), 398-412. ([http://dx.doi.org/10.1016/S0141-0296\(97\)00020-5](http://dx.doi.org/10.1016/S0141-0296(97)00020-5))
84. White, D. W. and **Hajjar, J. F.** (1997). "Design of Steel Frames Without Consideration of Effective Length," *Engineering Structures*, 19(10), 797-810. ([http://dx.doi.org/10.1016/S0141-0296\(97\)00161-2](http://dx.doi.org/10.1016/S0141-0296(97)00161-2))
85. White, D. W. and **Hajjar, J. F.** (1997). "Accuracy and Simplicity of Calculations for Stability Design of Steel Frames," *Journal of Constructional Steel Research*, 42(3), 209-261. ([http://dx.doi.org/10.1016/S0143-974X\(97\)00015-1](http://dx.doi.org/10.1016/S0143-974X(97)00015-1))
86. White, D. W. and **Hajjar, J. F.** (1997). "Buckling Models and Stability Design of Steel Frames – A Unified Approach," *Journal of Constructional Steel Research*, 42(3), 171-207. ([http://dx.doi.org/10.1016/S0143-974X\(97\)00014-X](http://dx.doi.org/10.1016/S0143-974X(97)00014-X))
87. **Hajjar, J. F.**, Gourley, B. C., and Olson, M. C. (1997). "A Cyclic Nonlinear Model for Concrete-Filled Tubes. II. Verification," *Journal of Structural Engineering*, ASCE, 123(6), 745-754. ([http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(1997\)123:6\(745\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(1997)123:6(745)))
88. **Hajjar, J. F.** and Gourley, B. C. (1997). "A Cyclic Nonlinear Model for Concrete-Filled Tubes. I. Formulation," *Journal of Structural Engineering*, ASCE, 123(6), 736-744. ([http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(1997\)123:6\(736\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(1997)123:6(736)))
89. **Hajjar, J. F.** and Gourley, B. C. (1996). "Representation of Concrete-Filled Steel Tube Cross-Section Strength," *Journal of Structural Engineering*, ASCE, 122(11), 1327-1336. ([http://dx.doi.org/10.1061/\(ASCE\)0733-9445\(1996\)122:11\(1327\)](http://dx.doi.org/10.1061/(ASCE)0733-9445(1996)122:11(1327)))
90. **Hajjar, J. F.** and White, D. W. (1994). "The Accuracy of Column Stability Calculations in Unbraced Frames and the Influence of Columns with Effective Length Factors Less Than One," *Engineering Journal*, AISC, 31(3), 81-97.
91. White, D. W. and **Hajjar, J. F.** (1991). "Application of Second-Order Elastic Analysis in LRFD: Research to Practice," *Engineering Journal*, AISC, 28(4), 133-148.
92. **Hajjar, J. F.** and Abel, J. F. (1989). "On the Accuracy of Some Domain-by-Domain Algorithms for Parallel Processing of Transient Structural Dynamics," *International Journal for Numerical Methods in Engineering*, 28(8), 1855-1874. (<http://dx.doi.org/10.1002/nme.1620280811>)
93. **Hajjar, J. F.** and Abel, J. F. (1989). "Parallel Processing of Central Difference Transient Analysis for Three-Dimensional Nonlinear Framed Structures," *Communications in Applied Numerical Methods*, 5(1), 39-46. (<http://dx.doi.org/10.1002/cnm.1630050107>)

94. **Hajjar, J. F.** and Abel, J. F. (1988). "Parallel Processing for Transient Nonlinear Structural Dynamics of Three-Dimensional Framed Structures using Domain Decomposition," *Computers and Structures*, Pergamon Press, 30(6), 1237-1254. ([http://dx.doi.org/10.1016/0045-7949\(88\)90189-7](http://dx.doi.org/10.1016/0045-7949(88)90189-7))
95. **Hajjar, J. F.**, Martha, L. F., O'Conner, T., and Abel, J. F. (1988). "On Some Recent Evolutions in Personal Supercomputing and Workstation Graphics," *Communications in Applied Numerical Methods*, 4(3), 373-378. (<http://dx.doi.org/10.1002/cnm.1630040312>)
96. Bailey, B. C., **Hajjar, J. F.**, and Abel, J. F. (1986). "Towards Effective Interactive Three-Dimensional Colour Postprocessing," *Engineering Computations*, 3(2), 90-98. (<http://dx.doi.org/10.1108/eb023645>)

Refereed Papers in Special Publications

1. Takeuchi, T., Yamamoto, Y., Midorikawa, M., Kasai, K., **Hajjar, J. F.**, Hikino, T., Matsui, R., and Kishiki, S. (2011). "Response Prediction of Controlled Rocking Frame Using Buckling Restrained Brace: Shaking Table Tests on Controlled Rocking Steel Frames Using Multipurpose Inertial Mass System: Part II," *Journal of Structural and Construction Engineering*, Architectural Institute of Japan, 76(667), 1695-1704 (in Japanese).
2. Takeuchi, T., Matsui, R., **Hajjar, J. F.**, Nishimoto, K., and Aiken, I. (2008). "Local Buckling Restraint Conditions for Core Plate in Buckling Restrained Braces," *Journal of Structural and Construction Engineering*, Architectural Institute of Japan, 73(634), 2231-2238 (in Japanese).
3. **Hajjar, J. F.** (1993). "Advanced Inelastic Analysis for LRFD Design: Guidelines for Development and Use," *Plastic Hinge Based Methods for Advanced Inelastic Analysis and Design of Steel Frames: An Assessment of the State-of-the-Art*, White, D. W. and Chen, W.-F. (eds.), Structural Stability Research Council, Bethlehem, Pennsylvania, 191-210.

Refereed Discussions

1. Leon, R. T., Perea, T. and **Hajjar, J. F.** (2010). "Closure to Discussion of Limit State Response of Composite Columns and Beam-Columns. Part II: Application of Design Provisions for the 2005 AISC Specification," *Engineering Journal*, AISC, 47(2), 141-142.
2. **Hajjar, J. F.** and Abel, J. F. (1988). "Discussion of 3D Beam-Column Element with Generalized Plastic Hinges," *Journal of Engineering Mechanics*, ASCE, 14(2), 367-369.

Papers in Journals

1. Peterman, K., Wang, L., Webster, M. D., D'Aloisio, J. A., and **Hajjar, J. F.** (2018). "Double Impact," *Modern Steel Construction*, AISC, November.
2. Jacobson, S. H., **Hajjar, J. F.**, Johnson, A., Moreno-Centeno, E., and Shen, S. (2018). "Future Directions for Broader Impacts at the National Science Foundation," *OR/MS Today*, February.
3. Gilsanz, R., Saadat, S., Fenves, S. J., Goverdhan, A., and **Hajjar, J. F.** (2017). "Structural Integrity – and Reorganization," *Modern Steel Construction*, AISC, September.
4. Kuchma, D. A., Cash, D. W., Courtney, F., **Hajjar, J. F.**, Hines, E. M., Kirincich, A., Lohrenz, S. E., Manwell, J. F., and Niezrecki, C. (2017). "New England Energy Market ... and Higher Ed ... Look to Catch a Second Wind," *New England Journal of Higher Education*, New England Board of Higher Education, Boston, Massachusetts, July 25, 2017.

Refereed Papers in Conference Proceedings

1. Briggs, N. E., Coleman, K., Schafer, B. W., Eatherton, M. R., Easterling, W. S., and **Hajjar, J. F.** (2021). "Cyclic Behavior of Composite Connections in Composite Floor Diaphragms," *Composite Construction in Steel and Concrete IX*, submitted for publication.
2. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2020). "Behavior of a Sustainable Composite Floor System with Deconstructable Clamping Connectors," *Composite Construction in Steel and Concrete VIII*, Rassati, G. A., Hajjar, J. F., and Leon, R. T. (eds.), American Institute of Steel Construction, Chicago, Illinois, pp. 251-262.
3. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2016). "Seismic Behavior of Steel-Concrete Composite Frame Structures and Design Practice in the United States," *Composite Construction in Steel and Concrete VII*, Bradford, M. and Uy, B. (eds.), American Society of Civil Engineers, Reston, Virginia, pp. 534-547. (<http://dx.doi.org/10.1061/9780784479735.041>)
4. Perea, T., Leon, R. T., Denavit, M. D., and **Hajjar, J. F.** (2016). "Problems in Determining Buckling Loads of Slender Full-Scale Concrete-Filled Tube Specimens," *Composite Construction in Steel and Concrete VII*, Bradford, M. and Uy, B. (eds.), American Society of Civil Engineers, Reston, Virginia, pp. 93-107. (<http://dx.doi.org/10.1061/9780784479735.007>)
5. Tort, C. and **Hajjar, J. F.** (2010). "A Mixed-Finite Element Approach for Performance-Based Design of Rectangular Concrete-Filled Steel Tube (RCFT) Frames," *Composite Construction in Steel and Concrete VI*, Leon, R. T., Perea, T., Rassati, G. A., and Lange, J. (eds.), United Engineering Foundation, American Society of Civil Engineers, Reston, Virginia, 591-603.

6. Tort, C. and **Hajjar, J. F.** (2005). “Damage Assessment for Performance-Based Design of Rectangular Concrete-Filled Steel Tubes,” *Composite Construction in Steel and Concrete V*, Leon, R. T. and Lange, J. (eds.), United Engineering Foundation, American Society of Civil Engineers, Reston, Virginia, 390-401.
7. **Hajjar, J. F.**, Tong, X., Schultz, A. E., Shield, C. K., and Saari, W. K. (2002). “Cyclic Behavior of Steel Frames with Composite Reinforced Concrete Infill Walls,” *Composite Construction in Steel and Concrete IV*, Hajjar, J. F., Hosain, M., Easterling, W. S., and Shahrooz, B. M. (eds.), United Engineering Foundation, American Society of Civil Engineers, Reston, Virginia, 983-994.
8. **Hajjar, J. F.**, Gourley, B. C., Schiller, P. H., Molodan, A., and Stillwell, K. A. (1997). “Seismic Analysis of Concrete-Filled Steel Tube Beam-Columns and Three-Dimensional Composite Frames,” *Composite Construction in Steel and Concrete III*, Buckner, D. C. and Shahrooz, B. M. (eds.), Engineering Foundation, American Society of Civil Engineers, New York, New York 75-88.
9. Leon, R. T., **Hajjar, J. F.**, and Shield, C. K. (1997). “The Effect of Composite Floor Slabs on the Behavior of Steel Moment-Resisting Frames in the Northridge Earthquake,” *Composite Construction in Steel and Concrete III*, Buckner, D. C. and Shahrooz, B. M. (eds.), Engineering Foundation, American Society of Civil Engineers, New York, New York 735-751.

Papers in Conference Proceedings

1. Eatherton, M. R. Schafer, B. W., **Hajjar, J. F.**, Easterling, W. S., Avellaneda Ramirez, R. E., Wei, G., Foroughi, H., Torabian, S., Fischer, A. W., Briggs, N. E., Madhavan, M. B., Coleman, K. (2021). “Considering Ductility in the Design of Bare Deck and Concrete on Metal Deck Diaphragms,” Proceedings of the 17th World Conference on Earthquake Engineering, Sendai, Japan, September 27-October 2, 2021.
2. Du, X. and **Hajjar, J. F.** (2021). “Hurricane Fragility Analysis of Electrical Transmission Towers,” Proceedings of the 2021 Electrical Transmission & Substation Conference, Orlando, Florida, September 19-23, 2021.
3. **Hajjar, J. F.** (2019). “New Strategies for Sustainable and Resilient Structural Systems,” *Keynote Plenary Presentation*, Proceedings of the 12th Pacific Structural Steel Conference, Tokyo Institute of Technology, Tokyo, Japan, November 9-11, 2019.
4. Mao, Z., Yan, Y., Wu, J., **Hajjar, J. F.**, and Padir, T. (2019). “Automated Damage Assessment of Critical Infrastructure Using Online Mapping Technique with Small Unmanned Aircraft Systems,” 2019 IEEE International Conference on Technologies for Homeland Security, Woburn, Massachusetts, November 5-6, 2019.

5. Deniz, D., Song, J., and **Hajjar, J. F.** (2019). "Collapse Risk Assessment of Ductile Frames under Earthquake Loadings using Energy-based Performance Descriptors," Proceedings of the International Conference on Natural Hazards and Infrastructure (ICONHIC2019), Chania, Greece, June 23-26, 2019.
6. Avellaneda, R., Easterling, W. S., Schafer, B. W., **Hajjar, J. F.**, Eatherton, M. R. (2019). "Cyclic Testing of Composite Concrete on Metal Deck Diaphragms Undergoing Diagonal Tension Cracking," Proceedings of the Canadian Conference on Earthquake Engineering, Quebec City, Quebec, Canada, June 17-20, 2019, Canadian Association for Earthquake Engineering.
7. Mao, Z., Yan, Y., Wu, J., **Hajjar, J. F.**, and Padir, T. (2018). "Towards Automated Post-Disaster Damage Assessment of Critical Infrastructure with Small Unmanned Aircraft Systems," 2018 IEEE International Conference on Technologies for Homeland Security, Waltham, Massachusetts, October 23-24, 2018.
8. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2018). "Design for Deconstruction for Sustainable Composite Steel-Concrete Floor Systems," Advances in Steel-Concrete Composite Structures, Valencia, Spain, June 27-29, 2018.
9. Padilla-Llano, D., **Hajjar, J. F.**, Eatherton, M. R., Easterling, W. S., and Schafer, B. W. (2018). "Cyclic Fracture Simulation Framework for Modeling Collapse in Steel Structures," Proceedings of the Eleventh U.S. National Conference on Earthquake Engineering, Los Angeles, California, June 25-29, 2018, Earthquake Engineering Research Institute, Oakland, California.
10. Thiagarajan, K. P., Lackner, M., Manwell, J. F., Breger, D., Arwade, S., Myers, A., **Hajjar, J. F.**, Courtney, F., Hines, E., Niezrecki, C., Kirincich, A., Lohrenz, S., Cash, D. (2018). "The Massachusetts Research Partnership (MRP) and the Partnership for Offshore Wind Energy in the US (Power-US): Implications for the Development of the Offshore Wind Energy Industry in the Commonwealth and the Nation," Proceedings of the Offshore Technology Conference, Houston, Texas, April 30-May 3, 2018.
11. Padilla-Llano, D., **Hajjar, J. F.**, Eatherton, M. R., Easterling, W. S., and Schafer, B. W. (2018). "Cyclic Fracture Simulation Framework for Stability and Collapse Simulation in Steel Structures," Proceedings of the Structural Stability Research Council Annual Stability Conference, Baltimore, Maryland, April 10-13, 2018, Structural Stability Research Council, Chicago, Illinois.
12. Perea, T., Leon, R. T., **Hajjar, J. F.**, Denavit, M. D. (2018). "Determination of the Buckling Critical Load for Composite Concrete-Filled Steel Tube Columns from Experimental Data: A Southwell Plot Technique," Proceedings of the Structural Stability Research Council Annual Stability Conference, Baltimore, Maryland, April 10-13, 2018, Structural Stability Research Council, Chicago, Illinois.

13. Peterman, K. D., Webster, M. D., D'Aloisio, J., and **Hajjar, J. F.** (2018). "Cyclic Response of Steel Cladding Details with Fiber-Reinforced Polymer Shims," Proceedings of the 9th International Conference on Behavior of Steel Structures in Seismic Areas (STESSA 2018), Christchurch, New Zealand, February 14-17, 2018, University of Canterbury, Christchurch, New Zealand.
14. Qiao, C., Myers, A. T., **Hajjar, J. F.**, Arwade, S. R., and Pang, W. (2017). "Metamodeling of Hurricane-induced Conditions for Offshore Multi-Hazard Assessment," Proceedings of the 12th International Conference on Structural Safety and Reliability (ICOSSAR 2017), Vienna, Austria, August 6-10, 2017, TU Vienna, Vienna, Austria.
15. Fontana, C. M., Arwade, S. R., DeGroot, D. J., Hallowell, S., Aubeny, C., Landon, M., Myers, A. T., **Hajjar, J. F.**, and Ozmultu, S. (2017). "Multiline Anchor System for the OC4 Semisubmersible Floating Platform," Proceedings of the 27th Ocean and Polar Engineering Conference (ISOPE-2017), San Francisco, California, June 25-30, 2017.
16. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2017). "Experimental Investigation of Deconstructable Steel-Concrete Shear Connections in Sustainable Composite Beams," Proceedings of the 2017 SEI Structures Congress, Denver, Colorado, April 5-7, 2017, American Society of Civil Engineers, Reston, Virginia.
17. Yan, Y. Güldür, B., and **Hajjar, J. F.** (2017). "Automated Structural Modelling of Bridges from Laser Scanning," Proceedings of the 2017 SEI Structures Congress, Denver, Colorado, April 5-7, 2017, American Society of Civil Engineers, Reston, Virginia.
18. Peterman, K., Webster, M. D., D'Aloisio, J. A., and **Hajjar, J. F.** (2017). "End Plate Stability in Thermally-Improved Steel Cladding Details," Proceedings of the Structural Stability Research Council Annual Stability Conference, San Antonio, Texas, March 21-24, 2017, Structural Stability Research Council, Chicago, Illinois.
19. Peterman, K., Moradei, J., D'Aloisio, J. A., Webster, M. D., and **Hajjar, J. F.** (2016). "Thermal and Structural Response of Thermal Break Strategies in Steel Building Structures," Proceedings of the Composites and Advanced Materials Expo (CAMX 2016), Anaheim, California, September 26-29, 2016, American Composites Manufacturing Association, Tuckahoe, New York.
20. Güldür, B. and **Hajjar, J. F.** (2016). "Automated Classification of Detected Surface Damage from Point Clouds with Supervised Learning," Proceedings of the 33rd International Symposium on Automation and Robotics in Construction (ISARC 2016), Auburn, Alabama, July 18-21, 2016, Auburn University, Auburn, Alabama.
21. Wei, K., Myers, A. T., Arwade, S. R., **Hajjar, J. F.**, and Spencer, M. A. (2016). "Performance-based Design and the Load-deformation of Welded Tubular Connections in Offshore Jacket Structures," Proceedings of the Eighth International Workshop on Connections in Steel Structures, Boston, Massachusetts, May 24-26, 2016, American Institute of Steel Construction, Chicago, Illinois.

22. Peterman, K., Moradei, J., D'Aloisio, J. A., Webster, M. D., and **Hajjar, J. F.** (2016). "Thermal Break Strategies for Cladding Systems in Building Structures," Proceedings of the Eighth International Workshop on Connections in Steel Structures, Carter, C. J. and Hajjar, J. F. (eds.), Boston, Massachusetts, May 24-26, 2016, American Institute of Steel Construction, Chicago, Illinois.
23. Yan, Y., Güldür, B., Yoder, L., Kasireddy, V., Huber, D., Scherer, S., Akinci, B., and **Hajjar, J. F.** (2016). "Automated Damage Detection and Structural Modelling with Laser Scanning," Proceedings of the Structural Stability Research Council Annual Stability Conference, Orlando, Florida, April 12-15, 2016, Structural Stability Research Council, Chicago, Illinois.
24. Güldür, B. and **Hajjar, J. F.** (2015). "Laser-based Condition Assessment Assistant for Bridges," Proceedings of the 2015 International Symposium on Non-Destructive Testing in Civil Engineering, Berlin, Germany, September 15-17, 2015.
25. Leon, R. T., **Hajjar, J. F.**, Perea, T. (2015). "Seismic Design of Composite Structures: The AISC 2016 Seismic Provisions," Proceedings of the Steel Innovations Conference 2015, Auckland, New Zealand, September 3-4, 2015, Steel Construction New Zealand, Manukau City, New Zealand.
26. Deniz, D., Song, J., and **Hajjar, J. F.** (2015). "Energy-based Seismic Collapse Risk Assessment of Structures," Proceedings of the 12th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP12)," Vancouver, Canada, July 12-15, 2015.
27. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2015). "Diaphragm Behavior of Deconstructable Composite Floor Systems," Proceedings of the 8th International Conference on Behavior of Steel Structures in Seismic Areas (STESSA 2015), Shanghai, China, July 1-3, 2015, China Architecture & Building Press, Beijing, China.
28. Güldür, B., Yan, Y., and **Hajjar, J. F.** (2015). "Condition Assessment of Bridges Using Terrestrial Laser Scanners," Proceedings of the 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015, ASCE, Reston, Virginia.
29. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2015). "Behavior of Deconstructable Steel-Concrete Shear Connections in Composite Beams," Proceedings of the 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015, ASCE, Reston, Virginia.
30. Wei, K., Arwade, S., Myers, A., Hallowell, S., **Hajjar, J. F.**, and Hines, E. M. (2015). "Performance Levels and Fragility for Offshore Wind Turbine Support Structures During Extreme Events," Proceedings of the 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015, ASCE, Reston, Virginia.

31. Denavit, M., **Hajjar, J. F.**, Leon, R. T., and Perea, T. (2015). "Advanced Analysis and Seismic Design of Concrete-Filled Steel Tube Structures," Proceedings of the 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015, ASCE, Reston, Virginia.
32. Güldür, B. and **Hajjar, J. F.** (2014). "Automated Damage Assessment from 3-D Laser Scans," Proceedings of the 2014 Istanbul Bridge Conference, Istanbul, Turkey, August 11-13, 2014, Middle East Technical University, Ankara, Turkey.
33. Eatherton, M. R., **Hajjar, J. F.**, and Deierlein, G. G. (2014). "Application of Hybrid Simulation for Evaluating Design of a Rocking Steel Frame System," Proceedings of the 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014, Earthquake Engineering Research Institute, Oakland, California.
34. Steelman, J. S., **Hajjar, J. F.**, LaFave, J. M., and Fahnestock, L. A. (2014). "Quantification and Calibration of Fuse Capacity for Elastomeric Bridge Bearings in Regions with High-Magnitude Earthquakes at Long Recurrence Intervals," Proceedings of the 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 21-25, 2014, Earthquake Engineering Research Institute, Oakland, California.
35. Güldür, B. and **Hajjar, J. F.** (2014). "Damage Detection on Structures Using Texture Mapped Laser Point Clouds," Proceedings of the 2014 ASCE/SEI Structures Congress, Boston, Massachusetts, April 3-5, 2014.
36. Saykin, V. V., Nguyen, T. H., **Hajjar, J. F.**, Deniz, D., and Song, J. (2014). "Validation of a Finite Element Approach to Modeling of Structural Collapse of Steel Structures," Proceedings of the ASCE/SEI Structures Congress 2014, Boston, Massachusetts, April 3-5, 2014.
37. Denavit, M. D., **Hajjar, J. F.**, Leon, R. T., and Perea, T. (2014). "Analysis and Design of Steel-Concrete Composite Frame Systems," Proceedings of the ASCE/SEI Structures Congress 2014, Boston, Massachusetts, April 3-5, 2014.
38. Valamanesh, V., Myers, A. T., Arwade, S. R., and **Hajjar, J. F.** (2014). "The Impact of Peak Spectral Period as A Random Variable in the Design of Offshore Wind Turbines," Proceedings of the ASCE/SEI Structures Congress 2014, Boston, Massachusetts, April 3-5, 2014.
39. Steelman, J. S., **Hajjar, J. F.**, LaFave, J. M., and Fahnestock, L. A. (2014). "Quantification of Fuse Capacity for Elastomeric and Low-Profile Steel Fixed Bridge Bearings in Regions with High-Magnitude Earthquakes at Long Recurrence Intervals," Proceedings of the ASCE/SEI Structures Congress 2014, Boston, Massachusetts, April 3-5, 2014.
40. Güldür, B. and **Hajjar, J. F.** (2013). "Laser-based Automatic Cross-Sectional Change Detection for Steel Frames," Proceedings of the 9th International Workshop on Structural Health Monitoring 2013, Stanford, California, September 10-12, 2013, Stanford University, Stanford, California.

41. Valamanesh, V., Myers, A. T., **Hajjar, J. F.**, and Arwade, S. R. (2013). "Probabilistic Modeling of Joint Hurricane-induced Wind and Wave Hazards to Offshore Wind Farms on the Atlantic Coast," Proceedings of the 11th International Conference on Structural Safety and Reliability (ICOSSAR 2013), New York, New York, June 16-20, 2013, Columbia University, New York, New York.
42. Carswell, W., Arwade, S.R., Myers, A.T. and **Hajjar, J.F.** (2013). "Reliability Analysis of Monopile Offshore Wind Turbine Support Structures," Proceedings of the 11th International Conference on Structural Safety and Reliability (ICOSSAR 2013), New York, New York, June 16-20, 2013, Columbia University, New York, New York.
43. Deniz, D., Song, J., **Hajjar, J. F.**, and Nguyen, T. H. (2013). "Probabilistic Assessment of Dynamic Instability of Frame Structures Under Seismic Excitations," Mini-Symposium on Resilient Structures, Infrastructures and Communities under Natural and Man-Made Hazards, Proceedings of the 11th International Conference on Structural Safety and Reliability (ICOSSAR 2013), New York, New York, June 16-20, 2013, Columbia University, New York, New York.
44. Steelman, J. S., Filipov, E. T., Revell, J. R., Fahnestock, L. A., **Hajjar, J. F.**, Foutch, D. A. (2013). "Achieving Bridge Resilience through Economical Seismic 'Quasi-Isolation' Design using Common Bearing Component," Proceedings of the Seventh National Seismic Conference on Bridges and Highways: Bridge Resilience for Earthquakes and Other Natural Hazards, Oakland, California, May 20-22, 2013, Transportation Research Board, Washington, D.C.
45. Nguyen, T., H., Le, C. H., and **Hajjar, J. F.** (2013). "High-Order Finite Elements for Topology Optimization," Proceedings of the 10th World Congress on Structural and Multidisciplinary Optimization, Orlando, Florida, May 19-24, 2013.
46. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2013). "Seismic Safety and United States Design Practice for Steel-Concrete Composite Frame Structures," Proceedings of the 10th Conference on Urban Earthquake Engineering, Tokyo, Japan, March 1-2, 2013, Tokyo Institute of Technology, Tokyo, Japan.
47. Szyniszewski, S., Smith, B. H., Zeinoddini, V. M., **Hajjar, J. F.**, Arwade, S. R., and Schafer, B. W. (2012). "Towards the Design of Cold-Formed Steel Foam Sandwich Columns," Proceedings of the 21st International Specialty Conference on Cold-Formed Steel Structures, St. Louis, Missouri, October 24-25, 2012, Center for Cold-Formed Steel Structures, Missouri University of Science and Technology, Rolla, Missouri.
48. Filipov, E. T., Revell, J. R., Steelman, J. S., Fahnestock, L. A., LaFave, J. M., Foutch, D. A., **Hajjar, J. F.** (2012). "Sensitivity of Quasi-isolated Bridge Seismic Response to Variations in Bearing and Backwall Elements," Paper No. 2978, Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 24-28, 2012.

49. Eatherton, M. R., Deierlein, G. G., Ma, X., Krawinkler, H., and **Hajjar, J. F.** (2012). "Toward a Performance-Based Design Framework For Self-Centering Rocking Braced-Frame Spine Systems," Paper 5388, Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 24-28, 2012.
50. Liu, X., Fan, J., Tao, M., and **Hajjar, J. F.** (2012). "Comparison and Analysis of Design Procedures for CFST-to-Steel Girder Composite Connection Panel Zone Shear Strength," Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 24-28, 2012.
51. Szyniszewski, S., Smith, B. H., **Hajjar, J. F.**, Arwade, S. R., and Schafer, B. W. (2012). "Tensile and Shear Element Erosion in Metal Foams," Proceedings of the 12th International LS-DYNA[®] Users Conference, Dearborn, Michigan, June 3-6, 2012, DYNAmore, Karlsruhe, Germany.
52. Denavit, M. D., **Hajjar, J. F.**, and Leon, R. T. (2012). "Stability Analysis and Design of Steel-Concrete Composite Columns," Proceedings of the Structural Stability Research Council Annual Stability Conference, Grapevine, Texas, April 17-20, 2012, SSRC, Rolla, Missouri. *Received the 2012 SSRC Vinnakota Award for the best paper presented by a student (M. Denavit).*
53. Szyniszewski, S., Smith, B. H., **Hajjar, J. F.**, Arwade, S. R., and Schafer, B. W. (2012). "Local Buckling Strength of Steel Foam Sandwich Panels," Proceedings of the Structural Stability Research Council Annual Stability Conference, Grapevine, Texas, April 17-20, 2012, SSRC, Rolla, Missouri.
54. Smith, B. H., Szyniszewski, S., **Hajjar, J. F.**, Schafer, B. W., and Arwade, S. R. (2012). "Material Characterization and Microstructural Simulation of Hollow Spheres and PCM Steel Foams," Proceedings of the Structural Stability Research Council Annual Stability Conference, Grapevine, Texas, April 17-20, 2012, SSRC, Rolla, Missouri.
55. Deierlein, G. G., Eatherton, M., Ma, X., and **Hajjar, J. F.** (2012). "Design Features and Criteria for Controlled Rocking Braced-Frame Systems," Proceedings of the 9th Conference on Urban Earthquake Engineering, Tokyo, Japan, March 6-8, 2012, Tokyo Institute of Technology, Tokyo, Japan.
56. **Hajjar, J. F.**, Denavit, M. D., Perea, T., and Leon, R. T. (2012). "Seismic Design and Stability Assessment of Composite Framing Systems," Proceedings of the 9th Conference on Urban Earthquake Engineering, Tokyo, Japan, March 6-8, 2012, Tokyo Institute of Technology, Tokyo, Japan.
57. Leon, R. T., Perea, T., **Hajjar, J. F.**, and Denavit, M. D. (2011). "Concrete-filled Tubes Columns and Beam-Columns: A Database for the AISC 2005 and 2010 Specifications," *Festschrift Gerhard Hanswille*, Wuppertal, Germany, October 1-3, 2011, IKIB, Wuppertal, Germany, pp. 203-212.

58. Smith, B. H., Szyniszewski, S., **Hajjar, J. F.**, Schafer, B. W., and Arwade, S. R. (2011). "Characterization of Steel Foams for Structural Components," Proceedings of the 7th International Conference on Porous Metals and Metallic Foams (MetFoam 2011), BEXCO, Busan, South Korea, September 18-21, 2011.
59. Deierlein, G. G., Ma, X., Eatherton, M. R., **Hajjar, J. F.**, Krawinkler, H., Takeuchi, T., Midorikawa, M., and Hikino, T. (2011). "Earthquake Resilient Steel Braced Frames with Controlled Rocking and Energy Dissipating Fuses," Proceedings of the 6th European Conference on Steel and Composite Structures (Eurosteel 2011), Budapest, Hungary, August 31-September 2, 2011.
60. Takeuchi, T., Midorikawa, M., Kasai, K., Yamamoto, Y., Deierlein, G. G., Ma, X., **Hajjar, J. F.**, and Hikino, T. (2011). "Shaking Table Test of Controlled Rocking Frames using Multipurpose Test Bed," Proceedings of the 6th European Conference on Steel and Composite Structures (Eurosteel 2011), Budapest, Hungary, August 31-September 2, 2011.
61. Pallarés, L. and **Hajjar, J. F.** (2011). "Design of Headed Steel Stud Anchors in Composite Structures," Proceedings of the 6th European Conference on Steel and Composite Structures (Eurosteel 2011), Budapest, Hungary, August 31-September 2, 2011.
62. Denavit, M. D., Borello, D. J., and **Hajjar, J. F.** (2011). "Behavior and Design of Bolted Steel Slip-Critical Connections with Fillers," Proceedings of the 6th European Conference on Steel and Composite Structures (Eurosteel 2011), Budapest, Hungary, August 31-September 2, 2011.
63. **Hajjar, J. F.** and Denavit, M. D. (2011). "New Trends for Seismic Engineering of Steel and Composite Structures," Third International Symposium on Innovative Design of Steel Structures, Singapore and Hong Kong, June 28-30, 2011, University of Hong Kong, Hong Kong, pp. 41-56.
64. Smith, B. H., Arwade, S. R., Szyniszewski, S., Schafer B. W., and **Hajjar, J. F.** (2011). "Computational Modeling of Cellular Metals with Random Microstructures," 2011 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Northeastern University, Boston, Massachusetts, June 2-4, 2011, Northeastern University, Boston, Massachusetts.
65. Denavit, M. D., **Hajjar, J. F.**, and Leon, R. T. (2011). "Seismic Behavior of Steel Reinforced Concrete Beam-Columns and Frames," Proceedings of the ASCE/SEI Structures Congress 2011, Las Vegas, Nevada, April 14-16, 2011, ASCE, Reston, Virginia.
66. Filipov, E. T., **Hajjar, J. F.**, Steelman, J. S., Fahnestock, L. A., LaFave, J. M., and Foutch, D.A. (2011). "Computational Analyses of Quasi-Isolated Bridges with Fusing Bearing Components," Proceedings of the ASCE/SEI Structures Congress 2011, Las Vegas, Nevada, April 14-16, 2011, ASCE, Reston, Virginia.

67. Steelman, J. S., Fahnestock, L. A., LaFave, J. M., **Hajjar, J. F.**, Filipov, E. T., and Foutch, D.A. (2011). "Seismic Response of Bearings for Quasi-Isolated Bridges – Testing and Component Modeling," Proceedings of the ASCE/SEI Structures Congress 2011, Las Vegas, Nevada, April 14-16, 2011, ASCE, Reston, Virginia.
68. Song, J., Deniz, D., **Hajjar, J. F.**, and Nguyen, T. H. (2011). "An Integrated Platform for Validated Prediction of Collapse of Structures," *Engineering for Sustainability and Prosperity*, Proceedings of the National Science Foundation CMMI Research and Innovation Conference 2011, Atlanta, Georgia, January 4-7, 2011, National Science Foundation, Arlington, Virginia.
69. Arwade, S. R., **Hajjar, J. F.**, Schafer, B. W., Moradi, M., Smith, B. H., and Szyniszewski, S. (2011). "Steel Foam Material Processing, Properties, and Potential Structural Applications," *Engineering for Sustainability and Prosperity*, Proceedings of the National Science Foundation CMMI Research and Innovation Conference 2011, Atlanta, Georgia, January 4-7, 2011, National Science Foundation, Arlington, Virginia.
70. Eatherton, M., **Hajjar, J. F.**, Deierlein, G. G., Ma, X., and Krawinkler, H. (2010). "Hybrid Simulation Testing of a Controlled Rocking Steel Braced Frame System," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.
71. Ma, X., Deierlein, G. G., Eatherton, M., Krawinkler, H., **Hajjar, J. F.**, Takeuchi, T., Kasai, K., Midorikawa, M., and Hikino, T. (2010). "Large-Scale Shaking Table Test of Steel Braced Frame with Controlled Rocking and Energy-Dissipating Fuses," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.
72. Perea, T., Leon, R. T., Denavit, M., and **Hajjar, J. F.** (2010). "Experimental Tests on Cyclic Beam-Column Interaction Strength of Concrete-Filled Steel Tubes," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.
73. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2010). "Cyclic Evolution of Damage and Beam-column Interaction Strength of Concrete-Filled Steel Tube Beam-Columns," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.
74. Steelman, J. S. and **Hajjar, J. F.** (2010). "Systemic Uncertainties and Decision Support Applications in Regional Seismic Loss Analyses," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.

75. Steelman, J. S., **Hajjar, J. F.**, LaFave, J. M., Fahnestock, L. A., and Filipov, E. T. (2010). "Bridge Bearing Fuse Systems for Regions with High-magnitude Earthquakes at Long Recurrence Intervals," Proceedings of the 9th National Conference on Earthquake Engineering, Rathje, E. M. and Atkinson, G. A. (eds.), Toronto, Canada, July 12-14, 2010, Earthquake Engineering Research Institute, Oakland, California.
76. **Hajjar, J. F.**, Eatherton, M., Ma, X., Krawinkler, H., and Deierlein, G. G. (2010). "Seismic Design and Behavior of Steel Frames with Controlled Rocking – Part I: Concepts and Quasi-Static Subassembly Testing," Proceedings of the ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-15, 2010, ASCE, Reston, Virginia.
77. Ma, X., Eatherton, M., **Hajjar, J. F.**, Krawinkler, H. and Deierlein, G. G., (2010). "Seismic Design and Behavior of Steel Frames with Controlled Rocking – Part II: Large Scale Shake Table Testing and System Collapse Analysis," Proceedings of the ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-15, 2010, ASCE, Reston, Virginia.
78. Borello, D. J., Andrawes, B., **Hajjar, J. F.**, and Olson, S. M. (2010). "Experimental and Analytical Forensic Investigation of Bridge Timber Piles under Eccentric Loads," Proceedings of the ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-15, 2010, ASCE, Reston, Virginia.
79. Jacobs, W. P. and **Hajjar, J. F.** (2010). "Load Transfer in Composite Construction," Proceedings of the ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-15, 2010, ASCE, Reston, Virginia.
80. **Hajjar, J. F.**, Eatherton, M., Ma, X., Deierlein, G. G., and Krawinkler, H. (2010). "Seismic Resilience of Self-Centering Steel Braced Frames with Replaceable Energy-Dissipating Fuses – Part I: Large-Scale Cyclic Testing," Proceedings of the Seventh International Conference on Urban Earthquake Engineering, Tokyo, Japan, March 3-5, 2010, Center for Urban Earthquake Engineering, Tokyo Institute of Technology, Tokyo, Japan.
81. Deierlein, G. G., Ma, X., **Hajjar, J. F.**, Eatherton, M., Krawinkler, H., Takeuchi, T., Midorikawa, M., Hikino, T., and Kasai, K. (2010). "Seismic Resilience of Self-Centering Steel Braced Frames with Replaceable Energy-Dissipating Fuses – Part 2: E-Defense Shake Table Test," Proceedings of the Seventh International Conference on Urban Earthquake Engineering, Tokyo, Japan, March 3-5, 2010, Center for Urban Earthquake Engineering, Tokyo Institute of Technology, Tokyo, Japan.
82. Tobias, D. H., **Hajjar, J. F.**, Anderson, R. E., LaFave, J. M., Hodel, C. E., Fahnestock, L. A., Kramer, W. M., Steelman, J. S., Claussen, P. D., Riechers, K. L., and Shaffer, M. D. (2009). "Development and Refinement of Illinois' Earthquake Resisting System Strategy," Proceedings of the 25th U.S.-Japan Bridge Engineering Workshop, PWRI Report No. 4172, Tsukuba, Japan, October 17-20, 2009, pp. 331-344.

83. Leon, R. T., Perea, T., **Hajjar, J. F.**, and Denavit, M. D. (2009). "Determination of Buckling Loads from Triaxial Load Tests of Slender Concrete-Filled Steel Tube Beam-Columns," Proceedings of the Third International Conference on Advances in Experimental Structural Engineering, San Francisco, California, October 15-16, 2009, Pacific Earthquake Engineering Research Center, University of California, Berkeley, California.
84. Denavit, M., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2009). "Seismic Multi-Axial Behavior of Concrete-Filled Steel Tube Beam-Columns," Proceedings of the Asian-Pacific Network of Centers for Earthquake Engineering Research, Department of Civil and Environmental Engineering, Urbana, Illinois, August 13-14, 2009, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois.
85. Deierlein, G. G., **Hajjar, J. F.**, Eatherton, M., Billington, S., Krawinkler, H. , Ma, X. (2009). "Seismically Resilient Steel Braced Frame Systems with Controlled Rocking and Energy Dissipating Fuses," Proceedings of the 7th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Honolulu, Hawaii, June 23-26, 2009, NEES, Inc., Davis, California.
86. Eatherton, M., **Hajjar, J. F.**, Deierlein, G. G., Ma, X., Billington, S., and Krawinkler, H. (2009). "Steel-Framed Rocking Structural Systems for Moderate Seismic Zones," Proceedings of the ASCE/SEI Structures Congress 2009, Austin, Texas, April 30-May 2, 2009, ASCE, Reston, Virginia.
87. Steelman, J. S. and **Hajjar, J. F.** (2009). "Mitigation Strategies for Regional Loss Assessment," Proceedings of the Sixth International Conference on Urban Earthquake Engineering, Tokyo, Japan, March 3-4, 2009, Center for Urban Earthquake Engineering, Tokyo Institute of Technology, Tokyo, Japan, pp. 665-670.
88. Deierlein, G. G., Ma, X., Eatherton, M. Krawinkler, H., Billington, S., and **Hajjar, J. F.** (2009). "Collaborative Research on Development of Innovative Steel Braced Frame Systems with Controlled Rocking and Replaceable Fuses," Proceedings of the Sixth International Conference on Urban Earthquake Engineering, Tokyo, Japan, March 3-4, 2009, Center for Urban Earthquake Engineering, Tokyo Institute of Technology, Tokyo, Japan, pp. 413-417.
89. Matsui, R., Takeuchi, T., **Hajjar, J. F.**, Nishimoto, K., and Aiken, I. (2008). "Local Buckling Restraint Conditions for Core Plates in Buckling Restrained Braces," Proceedings of the 14th World Conference on Earthquake Engineering, Beijing, China, October 12-17, 2008.
90. Eatherton, M., **Hajjar, J. F.**, Deierlein, G. G., Krawinkler, H., Billington, S., and Ma, X. (2008). "Controlled Rocking of Steel-Framed Buildings with Replaceable Energy-Dissipating Fuses," Proceedings of the 14th World Conference on Earthquake Engineering, Beijing, China, October 12-17, 2008.

91. Tort, C. and **Hajjar, J. F.** (2008). "Seismic Design and Analysis of Rectangular Concrete Filled Steel Tube (RCFT) Members and Frames," Proceedings of the 14th World Conference on Earthquake Engineering, Beijing, China, October 12-17, 2008.
92. **Hajjar, J. F.**, Eatherton, M., Deierlein, G. G., Ma, X., Pena, A., Krawinkler, H., and Billington, S. (2008). "Controlled Rocking of Steel Framed Buildings as a Sustainable New Technology for Seismic Resistance in Buildings," *Creating and Renewing Urban Structures*, Chicago, Illinois, September 17-19, 2008, International Association for Bridge and Structural Engineering, Zurich, Switzerland.
93. Tort, C. and **Hajjar, J. F.** (2007). "A Mixed Finite Element Approach for Nonlinear Dynamic Analysis of Composite Rectangular Concrete-Filled Steel Tube (RCFT) Frames," Proceedings of Computational Methods in Structural Dynamics and Earthquake Engineering, Rethymno, Greece, June 13-16, 2007, National Technical University of Athens, Athens, Greece.
94. Deierlein, G. G., Cordova, P., Borchers, E., Hall, K., **Hajjar, J. F.**, Billington, S., Krawinkler, H., and Mar, D. (2007). "Seismic Performance of Braced Frames with Controlled Rocking and Energy Dissipating Fuses," Proceedings of the ASCE/SEI Structures Congress 2007, Long Beach, California, May 17-19, 2007, ASCE, Reston, Virginia.
95. Tort, C. and **Hajjar, J. F.** (2007). "A Performance-Based Design Approach for Rectangular Concrete-Filled Steel Tube (RCFT) Frames under Seismic Loading," Proceedings of the ASCE/SEI Structures Congress 2007, Long Beach, California, May 17-19, 2007, ASCE, Reston, Virginia.
96. Surovek, A., White, D., Ziemian, R. Camotim, D., **Hajjar, J.**, and Teh, L., (2007). "Recommendations for the Use of Direct Second-Order Inelastic Analysis for the Design of Steel Structures," Proceedings of the Structural Stability Research Council Annual Stability Conference, New Orleans, Louisiana, April 18-21, 2007, SSRC, Rolla, Missouri, 301-315.
97. Tort, C. and **Hajjar, J. F.** (2006). "Seismic Demand and Capacity Evaluation of Rectangular Concrete-Filled Steel Tube (RCFT) Members and Frames," Proceedings of the

- Fifth Behaviour of Steel Structures in Seismic Areas (STESSA 2006), Mazzolani, F. M. (ed.), Yokohama, Japan, August 14-17, 2006, Taylor and Francis, London, 651-656.
98. Krzmarzick, D. and **Hajjar, J. F.** (2006). "Load Rating of Curved Composite Steel I-Girder Bridges through Load Testing with Heavy Trucks," ASCE Structures Congress 2006, St. Louis, Missouri, May 18-20, 2006, ASCE, Reston, Virginia.
 99. Surovek, A., Camotim, D., **Hajjar, J.**, Teh, L., White, D., and Ziemian, R. (2006). "Direct Second-Order Analysis for the Design of Steel Structures," ASCE Structures Congress 2006, St. Louis, Missouri, May 18-20, 2006, ASCE, Reston, Virginia.
 100. Tort, C. and **Hajjar, J. F.** (2006). "Development of Seismic Demand and Capacity Assessment Methodology for Rectangular Concrete-Filled Steel Tube (RCFT) Members and Frames," Eighth National Conference on Earthquake Engineering, San Francisco, California, April 18-22, 2006, Earthquake Engineering Research Institute, Oakland, California.
 101. Elnashai, A. S. and **Hajjar, J. F.** (2006). "Mid-America Earthquake (MAE) Center Program in Consequence-Based Risk Management," Eighth National Conference on Earthquake Engineering, San Francisco, California, April 18-22, 2006, Earthquake Engineering Research Institute, Oakland, California.
 102. **Hajjar, J. F.** and Elnashai, A. S. (2006). "Models for Seismic Vulnerability in the Mid-America Earthquake Center," Eighth National Conference on Earthquake Engineering, San Francisco, California, April 18-22, 2006, Earthquake Engineering Research Institute, Oakland, California.
 103. Elnashai, A. S. and **Hajjar, J. F.** (2005). "Mid-America Earthquake (MAE) Center Program in Seismic Risk Management," HAZTURK-2005: Strategies for an Earthquake Loss Estimation Program for Turkey, Sahin, M., Karaca, M., and Ormeci, C. (eds.), Istanbul, Turkey, December 1-2, 2005, Istanbul Technical University, Istanbul, Turkey, 65-73.
 104. **Hajjar, J. F.** and Elnashai, A. S. (2005). "Vulnerability Modeling in the MAE Center," HAZTURK-2005: Strategies for an Earthquake Loss Estimation Program for Turkey, Sahin, M., Karaca, M., and Ormeci, C. (eds.), Istanbul, Turkey, December 1-2, 2005, Istanbul Technical University, Istanbul, Turkey, 97-110.
 105. French, C. W., Shield, C. K., **Hajjar, J. F.**, Schultz, A. E., Bergson, P. M., Daugherty, D. J., Wan, C. P., Ernie, D. W., Du, D. H.-C., and Nesvold, S. (2005). "Multiaxial Subassemblage Testing (MAST) System," *Grand Challenges in Earthquake Engineering 250 Years after the 1755 Lisbon Earthquake*, Proceedings of the First U.S.-Portugal International Workshop, Barros, J. and Silva, P. (eds.), Lamego City, Portugal, July 11-14, 2005, 23.1-23.10.

106. Tort, C. and **Hajjar, J. F.** (2005). "Capacity Assessment of Rectangular Concrete-Filled Steel Tube (RCFT) Members and Connections in Composite Frames," Proceedings of the American Society of Civil Engineering Structures Congress '05, New York, New York, April 20-24, 2005, ASCE, Reston, Virginia.
107. **Hajjar, J. F.** and Dexter, R. J. (2005). "Column Reinforcement Design for Seismic and Non-Seismic Moment-Resisting Connections in Steel Frame Structures," T. R. Higgins Lectureship Award Presentation, Proceedings of the North American Steel Construction Conference, April 6-9, 2005, Montreal, Canada, American Institute of Steel Construction, Chicago, Illinois.
108. French, C. W., Schultz, A. E., **Hajjar, J. F.**, Shield, C. K., Ernie, D. W., Dexter, R. J., Du, D. H.-C., Olson, S. A., Daugherty, D. J., and Wan, C. P. (2004). "Multi-Axial Subassemblage Testing (MAST) System: Description And Capabilities," Paper No. 2146, Proceedings of the 13th World Conference on Earthquake Engineering, Vancouver, British Columbia, Canada, August 1-6, 2004, Canadian Association for Earthquake Engineering, Ottawa, Ontario, Canada.
109. Dexter, R. J., **Hajjar, J. F.**, and Lee, D. (2004). "Effect of Column Stiffener Detailing and Weld Fracture Toughness on the Performance of Welded Moment Connections," *Connections in Steel Construction V: Innovations in Steel Connections*, Amsterdam, the Netherlands, June 3-4, 2004, European Convention for Constructional Steelwork, Amsterdam, the Netherlands.
110. **Hajjar, J. F.**, Dexter, R. J., Lee, D., Cotton, S. C., Ojard, S. D., and Ye, Y. (2004). "Column Stiffener Detailing for Non-Seismic and Seismic Design," Proceedings of the North American Steel Construction Conference, Long Beach, California, March 24-27, 2004, American Institute of Steel Construction, Chicago, Illinois.
111. Tort, C. and **Hajjar, J. F.** (2003). "Damage Measures for Performance-Based Design of Rectangular Concrete-Filled Steel Tube Members and Connections," International Workshop on Steel and Concrete Composite Construction (IWSCCC-2003), National Center for Research on Earthquake Engineering, Taipei, Taiwan, October 8-9, 2003, National Center for Research on Earthquake Engineering, Taipei, Taiwan, 35-46.
112. Rassati, G. A., **Hajjar, J. F.**, Schultz, A. E., and Shield, C. K. (2003). "Cyclic Analysis of PR Steel Frames with Composite Reinforced Concrete Infill Walls," Proceedings of Advances in Structures: Steel, Composite and Aluminum (ASSCA) '03, Sydney, Australia, June 23-25, 2003, Association for International Cooperation and Research in Steel-Concrete Composite Structures, Sydney, Australia, 1259-1265.
113. **Hajjar, J. F.**, Dexter, R. J., Lee, D., Cotton, S. C., Ojard, S. D., and Ye, Y. (2003). "Seismic Detailing of Column Stiffeners in Steel Moment-Resisting Connections," Proceedings of the Fourth International Conference on the Behaviour of Steel Structures in Seismic Areas (STESSA 2003), Mazzolani, F. M. (ed.), Naples, Italy, June 9-12, 2003, A. A. Balkema Publishers, the Netherlands, 307-312.

114. **Hajjar, J. F.** and Leon, R. T. (2003). "Proposed Revisions to Composite Column Provisions (Chapter I) of the AISC Specification," Paper No. 356, Proceedings of the American Society of Civil Engineers Structures Congress '03, Lowes, L. N. and Miller, G. R. (eds.), Seattle, Washington, May 29-June 1, 2003, ASCE, Reston, Virginia.
115. Leon, R. T. and **Hajjar, J. F.** (2003). "Proposed Revisions to Composite Flexural Member Provisions (Chapter I) of the AISC Specification," Paper No. 396, Proceedings of the American Society of Civil Engineers Structures Congress '03, Lowes, L. N. and Miller, G. R. (eds.), Seattle, Washington, May 29-June 1, 2003, ASCE, Reston, Virginia.
116. Schultz, A. E., French, C. W., **Hajjar, J. F.**, Shield, C. K., Dexter, R. J., Ernie, D. W., Du., D. H.-C., Polley, C., and Daugherty, D. (2003). "Implementation of a Multi-Axial Subassemblage Testing (MAST) Laboratory System," Paper No. 559, Proceedings of the American Society of Civil Engineers Structures Congress '03, Lowes, L. N. and Miller, G. R. (eds.), Seattle, Washington, May 29-June 1, 2003, ASCE, Reston, Virginia.
117. French, C. W., Schultz, A. E., **Hajjar, J. F.**, Shield, C. K., Ernie, D. W., Dexter, R. J., Du., D. H.-C., and Bergson, P. M. (2002). "A System for Multi-Axial Subassemblage Testing (MAST): Design Concepts and Capabilities," Paper No. NS-1a, Proceedings of the Seventh National Conference on Earthquake Engineering, Boston, Massachusetts, July 21-25, 2002, Earthquake Engineering Research Institute, Oakland, California.
118. Deierlein, G. D., **Hajjar, J. F.**, Yura, J. A., White, D. W., and Baker, W. F. (2002). "Proposed New Requirements for Frame Stability using Second-Order Analysis," Proceedings of the Structural Stability Research Council Annual Stability Conference, Seattle, Washington, April 24-27, 2002, SSRC, Gainesville, Florida, 1-20.
119. **Hajjar, J. F.**, French, C. W., Schultz, A. E., Shield, C. K., Ernie, D. W., Dexter, R. J., Du., D. H.-C., and Bergson, P. M. (2002). "A System for Multi-Axial Subassemblage Testing (MAST): Initial Developments," *Performance of Structures – from Research to Design*, Proceedings of the American Society of Civil Engineers Structures Congress '02, Denver, Colorado, April 4-6, 2002, ASCE, Reston, Virginia, 313-314.
120. **Hajjar, J. F.** and Ray, J. D. (2002). "Correlation of Measured and Computed Dead and Live Load Stresses in a Steel Curved Girder Bridge," *Performance of Structures – from Research to Design*, Proceedings of the American Society of Civil Engineers Structures Congress '02, Denver, Colorado, April 4-6, 2002, ASCE, Reston, Virginia, 241-242.
121. French, C. W., **Hajjar, J. F.**, Eppers, L. J., and Le, Q. (2002). "Transverse Cracking in Concrete Bridge Decks," *Performance of Structures – from Research to Design*, Proceedings of the American Society of Civil Engineers Structures Congress '02, Denver, Colorado, April 4-6, 2002, ASCE, Reston, Virginia, 359-360.
122. Tong, X., **Hajjar, J. F.**, Schultz, A. E., and Shield, C. K. (2002). "Cyclic Behavior of Composite Steel Frame-Reinforced Concrete Infill Wall Structural System," *Performance of*

Structures – from Research to Design, Proceedings of the American Society of Civil Engineers Structures Congress '02, Denver, Colorado, April 4-6, 2002, ASCE, Reston, Virginia, 269-270.

123. Prochnow, S. D., Ye, Y., Dexter, R. J., **Hajjar, J. F.**, and Cotton, S. C. (2002). “Local Flange Bending and Local Web Yielding Limit States in Steel Moment-Resisting Connections,” *Connections in Steel Structures IV*, Roanoke, Virginia, October 22-24, 2000, American Institute of Steel Construction, Chicago, Illinois, 318-328.
124. Nozaka, K., Shield, C. K., and **Hajjar, J. F.** (2001). “Rehabilitation of Fatigued Steel Bridge Girders with Carbon Fiber Strips,” Proceedings of the Fifth National Science Foundation Workshop on Bridge Research in Progress, Minneapolis, Minnesota, October 8-10, 2001, 271-276.
125. **Hajjar, J. F.** (2001). “Composite Construction for Wind and Seismic Engineering,” Proceedings of the Structural Stability Research Council Annual Technical Session and Meeting, Fort Lauderdale, Florida, May 9-12, 2001, SSRC, Gainesville, Florida, 209-228.
126. Dexter, R. J., **Hajjar, J. F.**, Prochnow, S. D., Graeser, M. D., Galambos, T. V., and Cotton, S. C. (2001). “Evaluation of the Design Requirements for Column Stiffeners and Doubler and the Variation in Properties of A992 Shapes,” Proceedings of the North American Steel Construction Conference, Fort Lauderdale, Florida, May 9-12, 2001, AISC, Chicago, Illinois, 14.1-14.21.
127. Cotton, S. C., Prochnow, S. D., Ye, Y., **Hajjar, J. F.**, and Dexter, R. J. (2000). “Seismic Detailing of Continuity Plates and Web Doubler Plates in Steel Moment-Resisting Connections,” Proceedings of the Fourth Workshop on Fracture Issues in Steel Buildings Subjected to Earthquakes, U.S.-Japan Partnership for Advanced Steel Structures, San Francisco, California, February 28-29, 2000.
128. Schultz, A. E., **Hajjar, J. F.**, Shield, C. K., Saari, W. K., and Tong, X. (2000). “Study of the Cyclic Interaction In Steel Frames with Composite RC Infill Walls,” Paper No. 2727, Proceedings of the Twelfth World Congress on Earthquake Engineering, Auckland, New Zealand, January 30-February 4, 2000, New Zealand Society of Earthquake Engineering, Auckland, New Zealand.
129. **Hajjar, J. F.**, Galambos, T. V., Huang, W.-H., Pulver, B. E., Leon, R. T., and Rudie, B. J. (1999). “Measured vs. Computed Stresses in a Curved Steel Bridge,” *Structural Engineering in the 21st Century*, Proceedings of the American Society of Civil Engineers Structures Congress '99, Avent, R. R. and Alawady, M. (eds.), New Orleans, Louisiana, April 18-21, 1999, ASCE, Reston, Virginia, 231-234.
130. Schultz, A. E., **Hajjar, J. F.**, Shield, C. K., Saari, W., and Tong, X. (1998). “RC Infills in Steel Frames as Composite Systems for Seismic Resistance,” Paper No. T186-2, Proceedings of the First Structural Engineers World Congress, San Francisco, California, July 19-23, 1998, Elsevier Science Ltd., Oxford, U.K.

131. Zofkie, R. D. and **Hajjar, J. F.** (1998). "Non-Iterative Calculation of Steel Beam-Column Inelastic Axial Design Strength," Paper No. T203-3, Proceedings of the First Structural Engineers World Congress, San Francisco, California, July 19-23, 1998, Elsevier Science Ltd., Oxford, U.K.
132. **Hajjar, J. F.**, Leon, R. T., Shield, C. K., and Dexter, R. J. (1998). "Structural Behavior and Weld Joint Performance in Steel Moment-Resisting Frame Connections," Proceedings of the Third U.S.-Japan Workshop on Steel Fracture Issues, U.S.-Japan Partnership for Advanced Steel Structures, Tokyo, Japan, April 20-22, 1998, Building Research Institute, Tsukuba, Japan, September, 419-428.
133. Leon, R. T., **Hajjar, J. F.**, Shield, C. K., and Gustafson, M. A. (1998). "The Effect of Composite Floor Behavior on the Failure of Steel Moment-Resisting Connections," Proceedings of the NEHRP Conference and Workshop on Research on the Northridge, California Earthquake of January 17, 1994, Los Angeles, California, August 20-23, 1997, California Universities for Research in Earthquake Engineering, Richmond, California, 1998, Volume III-B, *Engineering*, 629-636.
134. Schiller, P. H., **Hajjar, J. F.**, and Molodan, A. (1997). "Nonlinear Analysis of Composite Concrete-Filled Steel Tube Frames," *Composite Construction -- Conventional and Innovative*, Innsbruck, Austria, September 16-18, 1997, International Association for Bridge and Structural Engineering, Zurich, Switzerland, 283-288.
135. Earls, C. J., Galambos, T. V., and **Hajjar, J. F.** (1997). "On Inelastic Buckling of High Strength Steel Beams Under Moment Gradient," Proceedings of the Structural Stability Research Council Annual Technical Session and Meeting, Toronto, Canada, June 9-11, 1997, Structural Stability Research Council, Bethlehem, Pennsylvania, 553-568.
136. White, D. W. and **Hajjar, J. F.** (1997). "Stability of Steel Frames: The Cases for Simple Elastic and Rigorous Inelastic Analysis/Design Procedures," *Innovations in Structural Design: Strength, Stability, Reliability. Proceedings of the Symposium Honoring Theodore V. Galambos*, Hajjar, J. F. and Leon, R. T. (eds.), Minneapolis, Minnesota, June 6-7, 1997, Structural Stability Research Council, Bethlehem, Pennsylvania, 111-122.
137. Leon, R. T. and **Hajjar, J. F.** (1997). "Effect of Floor Slabs on Behavior of Full Moment Steel Connections," *Building to Last*, Proceedings of the American Society of Civil Engineers Structures Congress '97, Kempner, L. and Brown, C. B. (eds.), Portland, Oregon, April 13-16, 1997, ASCE, New York, 772-776.
138. Schultz, A. E., French, C. F., Galambos, T. V., **Hajjar, J. F.**, Shield, C. K., and Stolarski, H. K. (1997). "Recent Developments and Future Directions in Assessment Technology and Earthquake Engineering," *Civil Infrastructure Systems for the Next Century: A Global Partnership in Research*, Proceedings of the First US/Eastern European Joint Seminar on Assessment Technology and Earthquake Engineering, Saiidi, M. S., Brandt, A. M., and

Cyrul, T. (eds.), Warsaw, Poland, October 2-4, 1996, National Science Foundation, Arlington, Virginia, 181-186.

139. **Hajjar, J. F.** and Leon, R. T. (1996). "Effect of Floor Slabs on the Performance of SMR Connections," Paper No. 656, Proceedings of the Eleventh World Congress on Earthquake Engineering, Sociedad Mexicana de Ingenieria, Sismica, A. C. (ed.), Acapulco, Mexico, June 23-28, 1996, Elsevier Science Publishers, New York. One of only 10% of all papers in the proceedings that were accepted for oral presentation.
140. **Hajjar, J. F.**, Gourley, B. C., and Stillwell, K. (1996). "Cyclic Analysis of Concrete-Filled Tubes and Design of Composite Frames," *Analysis and Computation*, Proceedings of the Twelfth Conference held in Conjunction with the American Society of Civil Engineers Structures Congress '96, Cheng, F. Y. (ed.), Chicago, Illinois, April 15-18, 1996, ASCE, New York, 43-54.
141. **Hajjar, J. F.** and White, D. W. (1995). "Stability Provisions in the 1993 AISC LRFD Specification," *Restructuring: America and Beyond*, Proceedings of the American Society of Civil Engineers Structures Congress '95, Sanayei, M. (ed.), Boston, Massachusetts, April 2-5, 1995, ASCE, New York, 726-729.
142. **Hajjar, J. F.** and White, D. W. (1995). "Effective Length and Equivalent Imperfection Approaches for Assessing Frame Stability," *Restructuring: America and Beyond*, Proceedings of the American Society of Civil Engineers Structures Congress '95, Sanayei, M. (ed.), Boston, Massachusetts, April 2-5, 1995, ASCE, New York, 1785-1788.
143. Abdelrazaq, A., Baker, W., **Hajjar, J. F.**, and Sinn, W. (1993). "Column Buckling Considerations in High-Rise Buildings with Mega-Bracing," *Is Your Structure Suitably Braced?*, Proceedings of the Structural Stability Research Council Annual Technical Session and Meeting, Milwaukee, Wisconsin, April 6-7, 1993, SSRC, Bethlehem, Pennsylvania, 155-169.
144. **Hajjar, J. F.** and White, D. W. (1992). "On the Need for the Effective Length Concept in LRFD," Proceedings of the American Society of Civil Engineers Structures Congress '92, Morgan, J. (ed.), San Antonio, Texas, April 13-16, 1992, ASCE, New York, 334-337.
145. White, D. W. and **Hajjar, J. F.** (1990). "Application of Second-Order Elastic Analysis in LRFD: Research to Practice," Proceedings of the American Institute of Steel Construction National Steel Construction Conference, Kansas City, Missouri, March 14-17, 1990, AISC, Chicago, Illinois, 11.1-11.22.
146. **Hajjar, J. F.** and Abel, J. F. (1989). "Parallel Processing of Nonlinear Dynamic Analysis of Steel Frame Structures using Domain Decomposition," Proceedings of the Ninth World Conference on Earthquake Engineering, Vol. V, Tokyo-Kyoto, Japan, August 2-9, 1988, Japan Association for Earthquake Disaster Prevention, Tokyo, Japan, 381-386.

147. Hilmy, S. I., **Hajjar, J. F.**, and Abel, J. F. (1987). “Practical Aspects of Implementation of Force-Space Bounding-Surface Plasticity for Dynamics of Steel Frames,” *International Conference on Constitutive Laws for Engineering Materials: Theory and Applications*, Desai, C. S. (ed.), University of Arizona, Tucson, Arizona, January 5-8, 1987, Elsevier Science Publishers, New York, 1205-1212.
148. Abel, J. F., Ingraffea, A. R., Perucchio, R., Han, T.-Y., and **Hajjar, J. F.** (1984). “Interactive Computer Graphics for Finite Element, Boundary Element, and Finite Difference Methods,” *Unification of Finite Element Methods*, Kardestuncer, H. (ed.), University of Connecticut, Storrs, Connecticut, May 4, 1984, North-Holland, Amsterdam, 47-62.

National Reports

1. Hall, K., Linzell, D., Minsker, B., Saviz, C. M., and Hajjar, J. F. (2020). “Civil Engineering Education Summit: Mapping the Future of Civil Engineering Education,” American Society of Civil Engineers, Reston, Virginia, 54 pp.
2. Peterman, K. D., Kordas, J., Moradei, J., Coleman, K., Der Ananian, J., Webster, M. D., D’Aloisio, J. A., and **Hajjar, J. F.** (2017). “Thermal Break Strategies for Cladding Systems in Building Structures,” Report to the Charles Pankow Foundation, Charles Pankow Foundation, Vancouver, Washington, May, 356 pp.
3. Jacobson, S. H., **Hajjar, J. F.**, Tilbury, D., Johnson, A., Centeno-Moreno, E., and Shen, S. (2017). “Setting a Broader Impacts Innovation Roadmap,” Final Report to the National Science Foundation, National Science Foundation, Arlington, Virginia, 17 pp.
4. Sabelli, R., Roeder, C. W. and **Hajjar, J. F.** (2013). “Seismic Design of Steel Special Concentrically Braced Frame Systems,” Report No. NIST GCR 13-917-24, NEHRP Seismic Design Technical Brief No. 8, National Institute of Standards and Technology, Gaithersburg, Maryland, 32 pp.
5. Malley, J. O., Carter, C. J., **Hajjar, J. F.**, Lignos, D., Roeder, C. W., and Saunders, M. (2011). “Research Plan for the Study of Seismic Behavior and Design of Deep, Slender Wide Flange Structural Steel Beam-Column Members,” Report No. NIST GCR 11-917-13, National Institute of Standards and Technology, Gaithersburg, Maryland, 166 pp.
6. Surovek, A. E., Camotim, D. R. Z., **Hajjar, J. F.**, Teh, L., White, D. W., and Ziemian, R. D. (2011). “Guidelines for the Use of Direct Second-Order Inelastic Analysis in Steel Frame Design,” American Society of Civil Engineers (ASCE) Structural Engineering Institute (SEI) Special Project Committee on Advanced Analysis, ASCE SEI Technical Committee on Compression and Flexural Members, ASCE, Reston, Virginia, 51 pp.
7. Fenves, G. L., Poland, C. D., Crewe, A. J., Eguchi, R., T., **Hajjar, J. F.**, Lynch, J. P., and Nakashima, M. (2011). “Grand Challenges in Earthquake Engineering,” National Research Council, National Academies Press, Washington, D.C., 90 pp.

8. **Hajjar, J. F.**, Fenves, G. L., Myers, J. D., Bielak, J., Lea, J., Elgamel, A., Bobbitt, J., Samalam, V. J., and Roblee, C. (2007). "Information Technology within the George E. Brown, Jr. Network for Earthquake Engineering Simulation: A Vision for an Integrated Community," NEES, Inc., Davis, California, 133 pp.
9. Galambos, T. V., **Hajjar, J. F.**, Earls, C. J., and Gross, J. L. (1997). "Required Properties of High-Performance Steels," Report No. NISTIR 6004, National Institute of Standards and Technology, Gaithersburg, Maryland, May, 91 pp.
10. **Hajjar, J. F.**, O'Sullivan, D. P., Leon, R. T., and Gourley, B. C. (1995). "Evaluation of the Damage to the Borax Corporate Headquarters Building as a Result of the Northridge Earthquake," Report No. SAC 95-07, SAC Joint Venture (Structural Engineers Association of California, Applied Technology Council, and California Universities for Research in Earthquake Engineering), Sacramento, California, December, 76 pp.

Technical Reports

Dr. Hajjar has published over seventy technical reports, most co-authored with his graduate students at Northeastern University, the University of Illinois at Urbana-Champaign, and the University of Minnesota based upon their dissertation research, on a range of topics. Selected technical reports include:

1. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2018). "Deconstructable Systems for Sustainable Design of Steel and Composite Structures," Report No. NEU-CEE-2020-01, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, August, 599 pp.
2. Schafer, B.W., Easterling, W.S., Sabelli, R., Eatherton, M.R., and **Hajjar, J.F.** (2019). "Steel Diaphragm Innovation Initiative Workshop Report." Report No. CFSRC-R-2019-03. Department of Civil Engineering, Johns Hopkins University, Baltimore Maryland.
3. POWER-US: Courtney, F., Hines, E. M., Kuchma, D., Manwell, J., Lackner, M., Arwade, S., Myers, A., **Hajjar, J. F.**, Niezrecki, C., Borkland, J., Kirincich, A., Lohrenz, S., and Cash, D. (2018). "Reaching Convergence in United States Offshore Wind Energy Research: A Multidisciplinary Framework for Innovation," Massachusetts Research Partnership, Partnership for Offshore Wind Energy Research (POWER-US), Boston, Massachusetts, September. (<http://dx.doi.org/10.1575/1912/10537>)
4. Torabian, S., Eatherton, M. R., Easterling, W. S., **Hajjar, J. F.**, and Schafer, B. W. (2017). "SDII Building Archetype Design v1.0," Report No. CFSRC R-2017-04, Department of Civil Engineering, Johns Hopkins University, Baltimore, Maryland, <http://jhir.library.jhu.edu/handle/1774.2/40638>.

5. O'Brien, P., Eatherton, M. R., Easterling, W. S., Schafer, B. W., and **Hajjar, J. F.** (2017). "Steel Deck Diaphragm Test Database v1.0," Report No. CFSRC R-2017-03, Department of Civil Engineering, Johns Hopkins University, Baltimore, Maryland, <http://jhir.library.jhu.edu/handle/1774.2/40634>.
6. Güldür, B. and **Hajjar, J. F.** (2014). "Laser-Based Structural Sensing and Surface Damage Detection," Report No. NEU-CEE-2014-03, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, August, 375 pp.
7. Saykin, V. V., Song, J., and **Hajjar, J. F.** (2014). "A Validated Approach to Modeling Collapse of Steel Structures," Report No. NEU-CEE-2014-02, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, August, 538 pp.
8. Denavit, M. D. and **Hajjar, J. F.** (2014). "Characterization of Behavior of Steel-Concrete Composite Members and Frames with Applications for Design, ," Report No. NSEL-034, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, August, 683 pp.
9. Gray, D., Moradei, J., Mirzaee, S., Ruth, M., Boynton, P., and **Hajjar, J. F.** (2014). "Massport Disaster and Infrastructure Resilience Planning: State-Of-Practice for Flood and Storm Surge Protection," Report No. NEU-CEE-2014-01, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, June, 145 pp.
10. Denavit, M. D. and **Hajjar, J. F.** (2013). "Description of Geometric Nonlinearity for Beam-Column Analysis in OpenSees," Report No. NEU-CEE-2013-02, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, 12 pp.
11. LaFave, J. A., Fahnestock, L. A., Foutch, D. A., Steelman, J. S., Revell, J. R., Filipov, E., and **Hajjar, J. F.** (2013). "Seismic Performance of Quasi-isolated Highway Bridges in Illinois," Report No. FHWA-ICT-13-015, Illinois Center for Transportation, University of Illinois at Urbana-Champaign, Urbana, Illinois, June, 229 pp.
12. LaFave, J. A., Fahnestock, L. A., Foutch, D. A., Steelman, J. S., Revell, J. R., Filipov, E., and **Hajjar, J. F.** (2013). "Experimental Investigation of the Seismic Response of Bridge Bearings," Report No. FHWA-ICT-13-002, Illinois Center for Transportation, University of Illinois at Urbana-Champaign, Urbana, Illinois, May, 130 pp.
13. **Hajjar, J. F.**, Sesen, A., Jampole, E., and Wetherbee, A. (2013). "A Synopsis of Sustainable Structural Systems with Rocking, Self-Centering, and Articulated Energy-Dissipating Fuses," Report No. NEU-CEE-2013-01, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, June, 202 pp.

14. Leon, R. T., Perea, T., **Hajjar, J. F.**, and Denavit, M. D. (2011). “Towards System Behavior Factors for Composite Frames: Experimental and Analytical Studies,” Final Report, American Institute of Steel Construction, Chicago, Illinois, February, 35 pp.
15. **Hajjar, J. F.**, Güldür, B., and Sesen, A. (2011). “Northeastern Laboratory for Structural Testing of Resilient and Sustainable Systems (STReSS Laboratory): Features and Specifications,” Report No. NEU-CEE-2011-01, Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts, September, 93 pp.
16. Hall, K. S., Eatherton, M. R., and **Hajjar, J. F.** (2010). “Nonlinear Behavior of Controlled Rocking Steel-Framed Building Systems with Replaceable Energy Dissipating Fuses,” Report No. NSEL-026, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, October, 45 pp.
17. Eatherton, M. R. and **Hajjar, J. F.** (2010). “Large-Scale Cyclic and Hybrid Simulation Testing and Development of a Controlled-Rocking Steel Building System with Replaceable Fuses,” Report No. NSEL-025, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, August, 803 pp.
18. Denavit, M. D. and **Hajjar, J. F.** (2010). “Nonlinear Seismic Analysis of Circular Concrete-Filled Steel Tube Members and Frames,” Report No. NSEL-023, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, March, 145 pp.
19. Borello, D. B., Denavit, M. D., and **Hajjar, J. F.** (2009). “Behavior of Bolted Steel Slip-critical Connections with Fillers,” Report No. NSEL-017, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, August, 357 pp.
20. Walsh, S. B. and **Hajjar, J. F.** (2009). “Data Processing of Laser Scans Towards Applications in Structural Engineering,” Report No. NSEL-015, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, June, 53 pp.
21. Pallarés, L. and **Hajjar, J. F.** (2009). “Headed Steel Stud Anchors in Composite Structures: Part II. Tension and Interaction,” Report No. NSEL-014, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, April, 44 pp.
22. Pallarés, L. and **Hajjar, J. F.** (2009). “Headed Steel Stud Anchors in Composite Structures: Part I. Shear,” Report No. NSEL-013, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, April, 35 pp.

23. Borello, D. J., Andrawes, B., **Hajjar, J. F.**, Olson, S. M., Hansen, J. and Buenker, J. (2009). "Forensic Collapse Investigation of a Concrete Bridge with Timber Piers," FHWA Report No. FHWA-ICT-09-042, Illinois Center for Transportation, University of Illinois at Urbana-Champaign, Urbana, Illinois, 60 pp.
24. Steelman, J. S. and **Hajjar, J. F.** (2008). "Capstone Scenario Applications of Consequence-Based Risk Management for the Memphis Testbed," Mid-America Earthquake Center, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, September, 142 pp.
25. Steelman, J. S. and **Hajjar, J. F.** (2008). "Systemic Validation of Consequence-Based Risk Management for Seismic Regional Losses," Mid-America Earthquake Center, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, September, 79 pp.
26. Gourley, B. C., Tort, C., Denavit, M. D., Schiller, P. H., and **Hajjar, J. F.** (2008). "A Synopsis of Studies of the Monotonic and Cyclic Behavior of Concrete-Filled Steel Tube Beam-Columns," Report No. NSEL-008, Newmark Structural Laboratory Report Series (ISSN 1940-9826), Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, April, Version 4.0, 371 pp.
27. Tort, C. and **Hajjar, J. F.** (2007). "Reliability-Based Performance-Based Design of Rectangular Concrete-Filled Steel Tube (RCFT) Members and Frames," Structural Engineering Report No. ST-07-1, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, August, 401 pp.
28. Leon, R. T. and **Hajjar, J. F.** (2007). "Background to Composite Column Design Changes in the 2005 AISC Specification," SEMM Report No. 07-12, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia.
29. Steelman, J. S., Song, J., and **Hajjar, J. F.** (2007). "Integrated Data Flow and Risk Aggregation for Consequence-Based Risk Management of Seismic Regional Losses," Mid-America Earthquake Center, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, January, 242 pp.
30. Krzmarzick, D. and **Hajjar, J. F.** (2006). "Load Rating of Composite Steel Curved I-Girder Bridges through Load Testing with Heavy Trucks," Report No. MN/RC-2006-40, Minnesota Department of Transportation, St. Paul, Minnesota, October, 546 pp.
31. Ocel, J. M., Dexter, R. J., and **Hajjar, J. F.** (2006). "Fatigue-Resistant Design for Overhead Signs, Mast-Arm Signal Poles, and Lighting Standards," Report No. MN/RC-2006-07, Minnesota Department of Transportation, St. Paul, Minnesota, March, 190 pp.
32. Grauvilardell, J., Lee, D., **Hajjar, J. F.**, and Dexter, R. J. (2005). "Synthesis of Design, Testing, and Analysis Research on Steel Column Base Plate Connections in High Seismic

- Zones,” Structural Engineering Report No. ST-04-02, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, October, 171 pp.
33. Freisinger, C. M., Krzmarzick, D., **Hajjar, J. F.**, and Dexter, R. J. (2004). “Testing Strategy for Load Testing of a Horizontally Curved Composite Steel Girder Bridge,” Structural Engineering Report No. ST-04-01, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, June, 174 pp.
 34. Nozaka, K., Shield, C. K., and **Hajjar, J. F.** (2003). “Repair of Fatigued Steel Bridge Girders with Carbon Fiber Strips,” Report No. MN/RC-2004-02, Minnesota Department of Transportation, St. Paul, Minnesota, December, 163 pp.
 35. Tort, C. and **Hajjar, J. F.** (2003). “Damage Assessment of Concrete-Filled Steel Tube Members and Frames,” Structural Engineering Report No. ST-03-1, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, April, 318 pp.
 36. Daugherty, D. J., **Hajjar, J. F.**, Ernie, D. W., Du, D. H.-C., Shield, C. K., Beyer, J. C., and Polley, C. (2002). “Multi-Axial Subassembly Testing System (MAST) Data Collection and Telepresence Systems Specification,” Report No. MAST-02-01, MAST Laboratory, University of Minnesota, Minneapolis, Minnesota, June, 24 pp.
 37. Lee, D., Cotton, S. C., Dexter, R. J., **Hajjar, J. F.**, Ye, Y., and Ojard, S. D. (2002). “Column Stiffener Detailing and Panel Zone Behavior of Steel Moment Frame Connections,” Structural Engineering Report No. ST-01-3.2, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, June, 435 pp.
 38. Gourley, B. C., Tort, C., **Hajjar, J. F.**, and Schiller, P. H. (2001). “A Synopsis of Studies of the Monotonic and Cyclic Behavior of Concrete-Filled Steel Tube Beam-Columns,” Structural Engineering Report No. ST-01-4, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, Version 3.0, December, 263 pp.
 39. **Hajjar, J. F.**, Ray, J. D., Wyffels, T. A., and Carlsson, M. L. R. (2001). “Live Load Stresses in Steel Curved Girder Bridges,” Report No. MN/RC-2002-08, Minnesota Department of Transportation, St. Paul, Minnesota, September, 401 pp.
 40. Cotton, S. C., Dexter, R. J., **Hajjar, J. F.**, Ye, Y., and Prochnow, S. D. (2001). “Column Stiffener Detailing and Panel Zone Behavior of Steel Moment Frame Connections,” Structural Engineering Report No. ST-01-3, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, August, 257 pp.
 41. Tong, X., Schultz, A. E., **Hajjar, J. F.**, and Shield, C. K. (2001). “Seismic Behavior of Composite Steel Frame-Reinforced Concrete Infill Wall Structural System,” Structural Engineering Report No. ST-01-2, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, April, 333 pp.

42. Prochnow, S. D., Dexter, R. J., **Hajjar, J. F.**, Ye, Y., and Cotton, S. C. (2000). "Local Flange Bending and Local Web Yielding Limit States in Steel Moment-Resisting Connections," Structural Engineering Report No. ST-00-4, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, November, 247 pp.
43. Prochnow, S. D., Dexter, R. J., **Hajjar, J. F.**, Ye, Y., and Cotton, S. C. (2001). "Local Flange Bending and Local Web Yielding Limit States in Steel Moment-Resisting Connections," Report No. UMSI 2000/210, Minnesota Supercomputer Institute, University of Minnesota, Minneapolis, Minnesota, October, 11 pp.
44. Ye, Y., **Hajjar, J. F.**, Dexter, R. J., Prochnow, S. D., and Cotton, S. C. (2000). "Nonlinear Analysis of Continuity Plate and Doubler Plate Details in Steel Moment Frame Connections," Structural Engineering Report No. ST-00-3, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, August, 156 pp.
45. Carlsson, M. L. R. and **Hajjar, J. F.** (2000). "Stresses in Steel Curved Girder Bridges," A Synopsis of Experimental Results and Design Recommendations," Structural Engineering Report No. ST-99-4, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, August, 142 pp.
46. Carlsson, M. L. R. and **Hajjar, J. F.** (2000). "Fatigue of Stud Shear Connectors in the Negative Moment Region of Steel Girder Bridges: CTS 00-03, Center for Transportation Studies, University of Minnesota, Minneapolis, Minnesota, June, 108 pp.
47. Saari, W. K., Schultz, A. E., **Hajjar, J. F.**, and Shield, C. K. (1999). "Behavior of Shear Connectors in Steel Frames with Reinforced Concrete Infill Walls," Structural Engineering Report No. ST-99-1, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, February, 206 pp.
48. French, C. W., Eppers, L. J., Le, Q. and **Hajjar, J. F.** (1999). "Transverse Cracks in Bridge Decks," Report No. MN/RC-1999-05, Minnesota Department of Transportation, St. Paul, Minnesota, January, 37 pp.
49. Dexter, R. J., O'Connell, H. M., **Hajjar, J. F.**, and Bergson, P. M. (1998). "Fatigue Evaluation of Stillwater Bridge (Bridge 4654)," Report No. MN/RC-P99/1, Minnesota Department of Transportation, St. Paul, Minnesota, December, 38 pp.
50. Le, Q., French, C. W. and **Hajjar, J. F.** (1998). "Transverse Cracking in Bridge Decks: Parametric Study," Minnesota Department of Transportation, Final Report, July.
51. Eppers, L. J., French, C. W., and **Hajjar, J. F.** (1998). "Transverse Cracking in Bridge Decks: Field Study," Minnesota Department of Transportation, Final Report, July.
52. **Hajjar, J. F.**, Leon, R. T., Gustafson, M. A., and Shield, C. K. (1998). "Full-Scale Cyclic Experiments of Composite Moment-Resisting Frame Connections," Structural Engineering Report No. ST 98-02, Department of Civil Engineering, University of Minnesota,

- Minneapolis, Minnesota, and Report No. SEM 98-02, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, Georgia, March, 426 pp.
53. Molodan, A. and **Hajjar, J. F.** (1997). "A Cyclic Distributed Plasticity Model for Three-Dimensional Concrete-Filled Steel Tube Beam-Columns and Composite Frames," Structural Engineering Report No. ST-96-6, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, August, 123 pp.
 54. Schiller, P. H. and **Hajjar, J. F.** (1996). "A Distributed Plasticity Formulation for Three-Dimensional Rectangular Concrete-Filled Steel Tube Beam-Columns and Composite Frames," Structural Engineering Report No. ST-96-5, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, November, 230 pp.
 55. Galambos, T. V., **Hajjar, J. F.**, Leon, R. T., Huang, W.-H., Pulver, B. E., and Rudie, B. J. (1996). "Stresses in Steel Curved Girder Bridges," Report No. MN/RC-96/28, Minnesota Department of Transportation, St. Paul, Minnesota, 345 pp.
 56. Olson, M. C. and **Hajjar, J. F.** (1996). "Cyclic Stress-Resultant Plasticity Behavior of Steel Cross-Sections," Structural Engineering Report No. ST-96-4, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, July, 288 pp.
 57. Zofkie, R. D. and **Hajjar, J. F.** (1996). "Non-Iterative Calculation of Steel Beam-Column Inelastic Axial Design Strength," Structural Engineering Report No. ST-96-1, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, July, 191 pp.
 58. Gourley, B. C. and **Hajjar, J. F.** (1994). "Cyclic Nonlinear Analysis of Three-Dimensional Concrete-Filled Steel Tube Beam-Columns and Composite Frames," Structural Engineering Report No. ST-94-3, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, November, 216 pp.
 59. Gourley, B. C. and **Hajjar, J. F.** (1994). "Representation of Cross-Section Strength for Low and High Strength Rectangular Concrete-Filled Steel Tubes," Structural Engineering Report No. ST-94-1, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota, February, 93 pp.
 60. Gourley, B. C. and **Hajjar, J. F.** (1993). "A Synopsis of Studies of the Monotonic and Cyclic Behavior of Concrete-Filled Steel Tube Beam-Columns," Structural Engineering Report No. ST-93-5.1, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota, Version 1.0, October, 101 pp.
 61. **Hajjar, J. F.** and White, D. W. (1993). "The Accuracy of Column Stability Calculations in Unbraced Frames and the Influence of Columns with Effective Length Factors Less Than One," Structural Engineering Report No. ST-93-4, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota, October, 58 pp.

62. Squarzini, M. J. and **Hajjar, J. F.** (1993). "An Evaluation Of Proposed Techniques For Predicting Column Capacity," Structural Engineering Report No. ST-93-3, Department of Civil and Mineral Engineering, University of Minnesota, Minneapolis, Minnesota, September, 195 pp.
63. **Hajjar, J. F.** and White, D. W. (1993). "Influence of Columns with K Less Than One on the Accuracy of Effective Length Calculations in Unbraced Frames," Technical Report No. CE-STR-93-3, School of Civil Engineering, Purdue University, West Lafayette, Indiana, January 1993, 40 pp.
64. **Hajjar, J. F.** and White, D. W. (1992). "On the Use of Effective Length Factors Less Than One in Unbraced Frames," Technical Report No. CE-STR-92-23, School of Civil Engineering, Purdue University, West Lafayette, Indiana, June, 29 pp.
65. White, D. W. and **Hajjar, J. F.** (1990). "Application of Second Order Elastic Analysis in LRFD: Research to Practice," Technical Report No. CE-STR-90-28, School of Civil Engineering, Purdue University, West Lafayette, Indiana, October, 60 pp.

Invited Lectures

Dr. Hajjar has given over one hundred invited lectures on his research at university departmental seminars, national and international committee meetings, engineering companies, and private and non-profit organizations. Selected invited lectures include:

1. "Urban Engineering: New Strategies for a Resilient and Sustainable Future," Department of Civil and Environmental Engineering, Notre Dame University Louaize, Beirut, Lebanon, November 18, 2020 (virtual).
2. "Urban Engineering: New Strategies for a Resilient and Sustainable Future," Department of Civil and Environmental Engineering, University of California, Davis, Davis, California, November 15, 2019.
3. "Cyclic Fracture Simulation Framework Modeling Collapse in Steel and Composite Structures," Department of Architecture and Building Engineering, Tokyo Institute of Technology, Tokyo, Japan, November 8, 2019.
4. "Urban Engineering: New Solutions for a Resilient and Sustainable Future," 54th Annual Robert D. Klein Lectureship Award Presentation, Northeastern University, Boston, Massachusetts, March 19, 2018.
5. "Damage and Collapse Assessment of Steel and Composite Structures," Department of Civil and Environmental Engineering, Oregon State University, Corvallis, Oregon, October 11, 2017.

6. "Damage and Collapse Assessment of Steel and Composite Structures," Department of Civil and Environmental Engineering, University of Houston, Houston, Texas, March 31, 2017.
7. "Urban Engineering Strategies in Civil and Environmental Engineering," Department of Civil & Environmental Engineering and Earth Sciences, Notre Dame University, Notre Dame, Indiana, October 27, 2016.
8. "Damage and Collapse Assessment of Steel and Composite Structures," Department of Civil and Environmental Engineering, University of Buffalo, Buffalo, New York, October 14, 2016.
9. "Resilient and Sustainable Design of Structural Systems: Ideas for a Changing World," Autodesk, Boston, Massachusetts, September 1, 2016.
10. "New Strategies for Resilient and Sustainable Structural Systems," National Institute of Standards and Technologies, Gaithersburg, Maryland, May 9, 2016.
11. "Urban Engineering Strategies in Civil and Environmental Engineering," Department of Civil and Environmental Engineering, Colorado State University, Fort Collins, Colorado, April 25, 2016.
12. "Collapse Assessment of Steel and Composite Structures," Simpson, Gumpertz & Heger, Inc., July 30, 2015.
13. "Damage and Collapse Assessment of Steel and Composite Structures," Department of Civil and Environmental Engineering, University of Washington, Seattle, Washington, April 28, 2015.
14. "Damage and Collapse Assessment of Steel and Composite Structures," North American Steel Construction Conference, Nashville, Tennessee, March 26, 2015.
15. "ARIA: Aerial Robotic Infrastructure Analyst Laser-based Structural Sensing and Surface Damage Assessment," Simpson, Gumpertz & Heger, Inc., December 18, 2014.
16. "New Strategies for Resilient and Sustainable Urban Infrastructure," CDM Smith Professor of Civil Engineering Inaugural Lecture, Northeastern University, Boston, Massachusetts, November 14, 2014.
17. "New Developments in Structural Steel in the Northeast," 33rd Annual Steel Conference, Steel Fabricators of New England, Worcester, Massachusetts, June 5, 2014.
18. "Post-Northridge Advances in Composite and Hybrid Structural Systems," 2014 North American Steel Construction Conference, Toronto, Canada, March 25-27, 2014.

19. "Post-Northridge Advances in Composite and Hybrid Structural Systems," Northridge 20 Symposium: The 1994 Northridge Earthquake: Impact, Outcomes, and Next Steps, Los Angeles, California, January 16-17, 2014.
20. "Resilient and Sustainable Design of Structural Systems: Ideas for a Changing World," Boston Association of Structural Engineers, Boston, Massachusetts, March 20, 2013.
21. "Sustainable Engineering of Steel Structures: Self-Centering Rocking Systems with Replaceable Energy-Dissipating Fuses," Department of Civil and Environmental Engineering, Worcester Polytechnic Institute, Worcester, Massachusetts, November 2, 2012.
22. "New Developments in Resilient and Sustainable Systems," Reinforced Concrete Construction Committee, Boston, Massachusetts, June 7, 2012.
23. "New Developments in Resilient and Sustainable Systems," Structural Engineers Association of Massachusetts, Boston, Massachusetts, May 30, 2012.
24. "Summary of Stability Studies for Composite Systems," American Institute of Steel Construction Specification Task Committee on Composite Construction and Task Committee 10 on Stability, Chicago, Illinois, November 17, 2011.
25. "Sustainable Engineering of Steel Structures: Self-Centering Rocking Systems with Replaceable Energy-Dissipating Fuses," Department of Advanced Structures, University of Cincinnati, Cincinnati, Ohio, November 4, 2011.
26. "Sustainable Engineering of Seismic Systems: Self-Centering Rocking Structures with Articulated Energy-Dissipating Fuses," Warren Lecture in Honor of Robert J. Dexter, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, October 1, 2010.
27. "Behavior and Design of Composite Column Systems: Recent Research and New Provisions," Structural Engineering Seminar Series, Department of Civil Engineering, University of Minnesota, Minneapolis, Minnesota, October 1, 2010.
28. "Seismic Resilience of Self-Centering Steel Frames with Replaceable Energy-Dissipating Fuses," American Institute of Steel Construction Specification Task Committee 9 on Seismic Design, Las Vegas, Nevada, July 7, 2010.
29. "Seismic Resilience of Self-Centering Steel Frames with Replaceable Energy-Dissipating Fuses," American Institute of Steel Construction Committee on Research, Orlando, Florida, May 11, 2010.
30. "Seismic Design of Steel Frames Using Fuses," Metal Building Manufacturers Association Researchers' Symposium, Dallas, Texas, February 10, 2010.

31. "Controlled Rocking of Steel Structures with Replaceable Energy-Dissipating Fuses," Structural Engineering Research Center, Tokyo Institute of Technology, Yokohama, Japan, July 29, 2009.
32. "Controlled Rocking of Steel Structures with Replaceable Energy-Dissipating Fuses," Steel Structure Development Center, Nippon Steel Corporation, Chiba, Japan, July 24, 2009.
33. "Behavioral Assessment of Concrete-Filled Steel Tube Structures for Seismic Excitation," Department of Architecture and Building Engineering, Tokyo Institute of Technology, Tokyo, Japan, July 22, 2009.
34. "Behavioral Assessment of Concrete-Filled Steel Tube Structures: Computational and Experimental Response for Performance-Based Design," Laboratoire de Genie Civil et Genie Mecanique, Génie Civil et Urbanisme, INSA de Rennes, Rennes, France, June 2, 2009.
35. "Controlled Rocking of Steel Structures with Replaceable Energy-Dissipating Fuses," Laboratoire de Genie Civil et Genie Mecanique, Génie Civil et Urbanisme, INSA de Rennes, Rennes, France, May 26, 2009.
36. "An Overview of Seismic Design of Steel Structures," Laboratoire de Genie Civil et Genie Mecanique, Génie Civil et Urbanisme, INSA de Rennes, Rennes, France, May 18, 2009.
37. "Mitigation Strategies for Regional Loss Assessment," Sixth International Conference on Urban Earthquake Engineering, Tokyo, Japan, March 4, 2009.
38. "DeKalb County Bridge SN019-5010 Collapse Investigation," 95th Annual Illinois Transportation and Highway Engineering Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois, February 25, 2009.
39. "Mitigating Disaster in the U.S. Infrastructure: What is the Government's Role in Keeping the Public Safe?," Institute of Government and Public Affairs, University of Illinois at Urbana-Champaign, Urbana, Illinois, November 5, 2008.
40. "New Developments in Earthquake Engineering of Steel and Composite Structures," School of Civil Engineering, Tsinghua University, Beijing, China, October 17, 2008.
41. "Regional Risk Assessment and Reduction: A Case Study in Shelby County, Tennessee," Damage Reduction Through Preparedness, Washington University, St. Louis, Missouri, August 19, 2008.
42. "Seismic Response of Steel Controlled Rocking Frames with Replaceable Energy-Dissipating Fuses," Sixth International Workshop on Connections in Steel Structures, Chicago, Illinois, June 24, 2008.

43. "Controlled Rocking of Steel Framed Buildings with Replaceable Energy Dissipating Fuses," 6th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Portland, Oregon, June 19, 2008.
44. "New Developments in Earthquake Engineering of Steel and Composite Structures," North American Steel Construction Conference, Nashville, Tennessee, April 3, 2008.
45. "Research and Practice on Steel Bridges: Load Rating of Bridges and the I-35W Bridge Collapse of August 1, 2007," United States Geological Survey, Champaign, Illinois, October 26, 2007.
46. "Behavioral Assessment of Concrete-Filled Steel Tube Members and Frames: Formulations for Performance-Based Design," Department of Civil and Environmental Engineering, Rensselaer Polytechnic Institute, Troy, New York, October 24, 2007.
47. "IT Achievements, Goals, and Opportunities within NEES: Preparing for 2009-2014," 5th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Snowbird, Utah, June 21, 2007.
48. "A Strategic Plan for IT in NEES," 5th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Snowbird, Utah, June 20, 2007.
49. "Information Technology within the George E. Brown, Jr. Network for Earthquake Engineering Simulation: A Vision for an Integrated Community," *Plenary Session*: 5th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Snowbird, Utah, June 20, 2007.
50. "Load Rating of Curved Composite Steel I-girder Bridges through Load Testing with Heavy Trucks," Transportation Research Conference, St. Paul, Minnesota, May 2, 2007.
51. "Behavioral Assessment of Concrete-Filled Steel Tube Members and Frames: Formulations for Performance-Based Design," Department of Civil Engineering, Purdue University, September 5, 2006.
52. "Load Rating of Curved Composite Steel I-girder Bridges through Load Testing with Heavy Trucks," Department of Civil Engineering, University of Tokyo, Tokyo, Japan, August 17, 2006.
53. "World Forum on Collaborative Research in Earthquake Engineering: Cyberinfrastructure," 4th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Washington, D.C., June 23, 2006.
54. "Information Technology as a Bridge for Research Collaboration over Distance and Time," 4th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Washington, D.C., June 22, 2006.

55. "Column Reinforcement Design for Seismic and Non-Seismic Moment-Resisting Connections in Steel Frame Structures," American Institute of Steel Construction T. R. Higgins Lecture Series: Worcester, Massachusetts, May 26, 2005; Denver, Colorado, June 16, 2005; San Francisco, California, September 6, 2005; Dallas, Texas, October 22, 2005; Portland, Oregon, November 2, 2005; Seattle, Washington, November 3, 2005, Lawrence, Kansas, March 1, 2006.
56. "MAE Center Reconnaissance: Pakistan Earthquake," The Pakistan Earthquake, A Wake-Up Call for Mid-America?, part of the series of forums on Megacatastrophes: Science, Policy, and Human Behavior, Center for Advanced Studies, University of Illinois at Urbana-Champaign, Urbana, Illinois, February 15, 2006.
57. "Column Reinforcement Design for Seismic and Non-Seismic Moment-Resisting Connections in Steel Frame Structures," American Institute of Steel Construction T. R. Higgins Lecture Series: *Keynote Plenary Presentation*: North American Steel Construction Conference, Montreal, Canada, April 8, 2005.
58. "Seismic Detailing of Moment-Resisting Connections in Steel Frame Structures After the 1994 Northridge Earthquake," Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, February 21, 2005.
59. "Seismic Detailing of Moment-Resisting Connections in Steel Frame Structures," Department of Civil Engineering, Johns Hopkins University, Baltimore, Maryland, November 8, 2004.
60. "Cyclic Behavior of Steel Frames with Composite Reinforced Concrete Infill Walls," Department of Civil and Environmental Engineering, Stanford University, Stanford, California, July 10, 2002.
61. "Structural Collapse of the World Trade Center: Impact on Building Design and Disaster Management in Minnesota," Building Design After September 11, 2001: Architecture, Structure, Safety – A Forum for the Minnesota Community, University of Minnesota, Minneapolis, Minnesota, January 30, 2002.
62. "Nonlinear Finite Element Analysis of Concrete-Filled Steel Tube Beam-Columns and Composite Frame Structures," Department of Civil and Environmental Engineering, University of California at Berkeley, Berkeley, California, April 23, 2001.
63. "Cyclic Analysis of Concrete-Filled Steel Tube Beam-Columns and Composite Frames: Distributed Plasticity Formulation," Department of Civil and Environmental Engineering, Stanford University, Stanford, California, October 16, 2000.
64. "Cyclic Analysis of Concrete-Filled Steel Tube Beam-Columns and Composite Frames: Concentrated Plasticity Formulation," Department of Civil and Environmental Engineering, Stanford University, Stanford, California, August 28, 2000.

65. “Nonlinear Finite Element Analysis of Concrete-Filled Steel Tubes and Composite Frames,” Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign, Illinois, April 26, 1999.
66. “The 1994 Northridge, California Earthquake: Causes of Damage to Steel Moment-Resisting Frame Connections,” Department of Architecture, Massachusetts Institute of Technology, Cambridge, Massachusetts, November 23, 1998.
67. “Effect of Composite Floor Slabs on the Behavior of Steel Moment-Resisting Frame Connections in the Northridge Earthquake,” International Association for Bridge and Structural Engineering Working Commission 2 on Steel Structures, *Composite Construction – Conventional and Innovative*, International Association for Bridge and Structural Engineering, Innsbruck, Austria, September 16, 1997.

Invited Workshop Presentations

Dr. Hajjar has made presentations on his research at over thirty workshops around the world. Selected invited workshop presentations include:

1. “Curricular Innovations in Civil and Environmental Engineering,” Future of Civil and Environmental Engineering Education Frontiers Forum, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, October 23, 2019.
2. “Infrastructure Resilience Trends,” International Symposium on Developing Standards for Disaster Resilience of Buildings, Infrastructure, and Communities, National Institute of Standards and Technology, Gaithersburg, Maryland, September 3, 2014.
3. “Sustainability of Steel Structures: Breakout Summary,” Innovations in Steel Design, Chicago, Illinois, March 28, 2012.
4. “Self-Centering Seismic-Resistant Systems: Next Steps Towards Codification,” Seminar on the Steps Towards Implementation and Codification of Self-Centering Seismic Resistant Systems, Toronto, Canada, July 29-30, 2010.
5. “Mitigating Catastrophes from Low-Probability, High-Consequence Seismic Events,” NEES/E-Defense Collaborative Research Program on Earthquake Engineering: Phase 2 Planning Meeting, National Science Foundation, Arlington, Virginia, January 12-13, 2009.
6. “Seismic Response of Steel Controlled Rocking Frames with Replaceable Energy-Dissipating Fuses,” Proceedings of the International Workshop on Connections in Steel Structures VI, Chicago, Illinois, June 23-25, 2008.

7. “Controlled Rocking of Steel-Framed Buildings with Replaceable Energy-Dissipating Fuses,” Planning Meeting for U.S./E-Defense Collaboration, Miki, Japan, September 27-29, 2007.
8. “A Vision for Information Technology in Earthquake Engineering,” World Forum on Collaborative Research in Earthquake Engineering, Ispra, Italy, March 26-27, 2007.
9. “World Forum on Collaborative Research in Earthquake Engineering: Cyberinfrastructure,” World Forum on Collaborative Research in Earthquake Engineering, San Francisco, California, March 16-18, 2006.
10. Discussion Forum, “Infrastructure after 9/11,” James L. Oberstar Forum, Center for Transportation Studies, University of Minnesota, Minneapolis, Minnesota, April 28-29, 2002.
11. “Reassessment of Continuity Plate and Doubler Plate Design: Current Research,” SAC Joint Venture 90% Draft Meeting on Connection Design, San Francisco, California, November 15-16, 1999.
12. “Composite Interaction of Steel Frame Members and Reinforced Concrete Walls under Seismic Loading: Computational and Experimental Research Program,” Fifth U.S.-Japan Joint Technical Coordination Conference, U.S.-Japan Cooperative Earthquake Engineering Program, Phase 5, Composite and Hybrid Structures, Tokyo, Japan, October 4-6, 1998.
13. “Cyclic Testing of Steel Moment-Resisting Frames with Composite Reinforced Concrete Infill Walls,” Third U.S.-Japan Joint Technical Coordination Conference, U.S.-Japan Cooperative Earthquake Engineering Program, Phase 5, Composite and Hybrid Structures, Hong Kong, December 12-14, 1996.
14. “Cyclic Analysis of Concrete-Filled Steel Tube Beam-Columns and Composite Frame Structures,” Third U.S.-Japan Joint Seminar on Innovations in Stability Concepts and Methods for Seismic Design in Structural Steel, Honolulu, Hawaii, July 15-18, 1996.

Conference Presentations

In addition to those presentations made for papers listed under “Refereed Papers in Special Publications,” “Refereed Papers in Conference Proceedings,” or “Papers in Conference Proceedings,” Dr. Hajjar has made over sixty conference presentations on his research. Selected conference presentations include:

1. Du, X. and **Hajjar, J. F.** (2021). “Hurricane Fragility Analysis of Electrical Transmission Towers,” 2021 Electrical Transmission & Substation Structures Conference, American Society of Civil Engineers, Orlando, Florida, September 19-23, 2021, submitted for presentation.

2. Bond, R. B., Schafer, B. W., Eatherton, M. R., Easterling, W. S., and **Hajjar, J. F.** (2021). "Design of Steel Headed Stud Anchors in Concrete-Filled Steel Composite Deck," Composite Construction in Steel and Concrete IX, Stromberg, Germany, July 26-30, 2021, submitted for publication.
3. Yan, Y. Ma, Z., Wu, J., Padir, T., and **Hajjar, J. F.** (2021). "Automated Concrete Crack Detection and Quantification using Integrated RGB Images and LiDAR Data from UAS," *Invited Presentation in the Mini-Symposium on Advances in Computer Vision and Visualization for Structural Health Monitoring*, 2020 Engineering Mechanics Institute Conference, American Society of Civil Engineers, New York, New York, May 25-28, 2021 (virtual).
4. Avellaneda, R., Wei, G., Eatherton, M. R., Easterling, W. S., Schafer, B. W., and **Hajjar, J. F.** (2020). "Lessons Learned from Cyclic Testing of Composite Concrete on Metal Deck Diaphragms, 2020 Wei-Wen Yu International Specialty Conference on Cold-Formed Steel Structures, Dallas, Texas, October 21-22, 2020 (virtual).
5. Ganguly, A. R. and **Hajjar, J. F.** (2020). "Vision CEE 2100: Empowering Civil and Environmental Engineering with Artificial Intelligence for Global Priorities," *Keynote Plenary Presentation*, Virtual Technical Conference (V-Tech), American Society of Civil Engineers, Reston, Virginia, September 14-18, 2020 (virtual).
6. Du, X. and **Hajjar, J. F.** (2020). "Three-dimensional Nonlinear Beam Element for Asymmetric Steel Sections Subjected to Dynamic Loading," *Invited Presentation in the Mini-Symposium on Robustness of Infrastructures*, 2020 Engineering Mechanics Institute Conference, American Society of Civil Engineers, New York, New York, May 26-29, 2020.
7. Perea, T. and **Hajjar, J. F.** (2020). "Session Title: Recent Developments in Seismic Performance of Composite Buildings," North American Steel Construction Conference, Atlanta, Georgia, April 22-24, 2020.
8. Yan, Y. and **Hajjar, J. F.** (2019). "Towards Automated Creation of As-is High-fidelity Structural Models of Deteriorated Bridges with UAV-assisted Visual Sensors," *Invited Presentation in the Mini-Symposium on Safety Assessment of Aging Infrastructure: From Data to Decision*, 2019 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Pasadena, California, June 18-21, 2019.
9. Avellaneda Ramirez, R., Easterling, W. S., Schafer, B. W., **Hajjar, J. F.**, and Eatherton, M. R. (2019). "Cyclic Testing of Composite Concrete on Metal Deck Diaphragms Undergoing Diagonal Tension Cracking," 12th Canadian Conference on Earthquake Engineering, Quebec, Canada, June 17-20, 2019.
10. Schafer, B. W., Eatherton, M. R., Easterling, W. S., and **Hajjar, J. F.** (2019). "Behavior and Design of Diaphragms, Chords, and Collectors for Steel Buildings," 2019 SEI Structures Congress, Orlando, Florida, April 24-27, 2019.

11. Padilla-Llano, D., Madhavan, M., Briggs, N., and **Hajjar, J. F.** (2019). “Cyclic Fracture Simulation for Steel and Concrete in Steel-Concrete Composite Diaphragms,” 2019 SEI Structures Congress, Orlando, Florida, April 24-27, 2019.
12. **Hajjar, J. F.**, Ganguly, A., Sasani, M., Kane, M., Wang, Q., Fannon, D., Chen, Q., and Eckelman, M. (2019). “Integrating Structural Engineering Resilience and Sustainability via Transdisciplinary Systems Perspectives,” 2019 SEI Structures Congress, Orlando, Florida, April 24-27, 2019.
13. Peterman, K., Kordas, J., Moradei, J., Coleman, K., Der Ananian, J., Webster, M. D., D’Alosio, J. A., and **Hajjar, J. F.** (2019). “Thermal Break Strategies for Steel Building Structures,” North American Steel Construction Conference, St. Louis, Missouri, April 3-5, 2019.
14. **Hajjar, J. F.** (2018). “Composite Construction in the U.S.: Current Design and Future Opportunities,” *Invited Keynote Presentation*, Advances in Steel-Concrete Composite Structures, Valencia, Spain, June 27-29, 2018.
15. Padilla-Llano, D. and **Hajjar, J. F.** (2018). “Cyclic Fracture Modeling for Structural Damage Simulation in Steel Structures,” *Invited Presentation in Mini-Symposium on Robustness of Infrastructures*, 2018 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Boston, Massachusetts, May 29-June 1, 2018.
16. Yan, Y. and **Hajjar, J. F.** (2018). “Automated Condition Assessment and Monitoring of Infrastructures with Visual Sensing Technologies,” *Invited Presentation in the Mini-Symposium on Structural Modeling and Identification for Performance and Resilience Assessment of Civil Structures*, 2018 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Boston, Massachusetts, May 29-June 1, 2018.
17. Güldür Erkal, B. and **Hajjar, J. F.** (2018). “Development of a Laser and Image-based Surface Damage Detection Software Application,” 2018 SEI Structures Congress, Fort Worth, Texas, April 19-21, 2018.
18. Yan, Y. and **Hajjar, J. F.** (2018). “Automated Creation of As-is Finite Element Models of Aging Infrastructures using UAV and Visual Sensing Technology of a Laser and Image-based Surface Damage Detection Software Application,” 2018 SEI Structures Congress, Fort Worth, Texas, April 19-21, 2018, American Society of Civil Engineers, Reston, Virginia.
19. Wang, L., Webster, M. D., and **Hajjar, J. F.** (2018). “Design for Deconstruction: Sustainable Composite Floor Systems with Deconstructable Clamping Connectors,” North American Steel Construction Conference 2018, Baltimore, Maryland, April 11-13, 2018.

20. **Hajjar, J. F.** (2017). “The Future of the AISC Composite Construction Specification,” *Invited Keynote Presentation, Composite Construction in Steel and Concrete VIII*, Jackson, Wyoming, July 30-August 2, 2017.
21. Padilla-Llano and **Hajjar, J. F.** (2017). “Automated Processing of Laser Point Clouds towards Structural Modelling of Bridges,” *Invited Presentation in the Mini-Symposium on Robustness of Infrastructures*, 2017 Engineering Mechanics Institute Conference, American Society of Civil Engineers, San Diego, California, June 4-7, 2017.
22. Yan, Y. and **Hajjar, J. F.** (2017). “Automated Processing of Laser Point Clouds towards Structural Modelling of Bridges,” *Invited Presentation in the Mini-Symposium on Structural Modeling and Identification for Performance and Resilience Assessment of Civil Structures*, 2017 Engineering Mechanics Institute Conference, American Society of Civil Engineers, San Diego, California, June 4-7, 2017.
23. Yan, Y. and **Hajjar, J. F.** (2017). “Automated Processing of Laser Point Clouds towards Structural Modelling of Bridges,” *Invited Presentation in the Mini-Symposium on Structural Modeling and Identification for Performance and Resilience Assessment of Civil Structures*, 2017 Engineering Mechanics Institute Conference, American Society of Civil Engineers, San Diego, California, June 4-7, 2017.
24. Qiao, C., Myers, A. T., Arwade, S. R., **Hajjar, J. F.**, Hines, E. M., and Kuchma, D. A. (2017). “The Spatio-Temporal Correlation of Multiple Offshore Hazards during Historical Hurricanes along the U.S. Atlantic Coast,” 2017 SEI Structures Congress, Denver, Colorado, April 5-7, 2017.
25. Peterman, K., Webster, M. D., D’Aloisio, J. A., and **Hajjar, J. F.** (2017). “Thermal Break Strategies for Cladding Systems in Building Structures,” 2017 ACMA North American Pultrusion Conference, Atlanta, Georgia, April 4-5, 2017.
26. Schafer, B.W., Eatherton, M., **Hajjar, J. F.**, Easterling, W.S., and Sabelli, R. (2017) “Steel Diaphragm Innovation Initiative.” MBMA Researcher Symposium, Nashville, Tennessee, February 22, 2017.
27. **Hajjar, J. F.**, Wang, L. and Webster, M. D. (2016). “Performance of Deconstructable Shear Connectors in Sustainable Composite Floor Systems,” 2016 GI-SEI Congress, Phoenix, Arizona, February 14-17, 2016.
28. Brown, C., Wang, L., Webster, M. D., Eckelman, M., and **Hajjar, J. F.** (2015). “Life Cycle Analysis of Deconstructable Floor Systems,” 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015.
29. **Hajjar, J. F.** (2015). “Advancing Structural Engineering through Better Integration of Practice, Education, and Research,” Panel Discussion, 2015 SEI Structures Congress, Portland, Oregon, April 23-25, 2015.

30. Peterman, K. D., D'Aloisio, J. A., Webster, M. D., and **Hajjar, J. F.** (2015). "An Introduction to Thermal and Structural Response of Thermal Break Strategies in Steel Building Systems," Engineering Sustainability 2015, Pittsburgh, Pennsylvania, April 19-21, 2015.
31. Peterman, K., Webster, M. D., D'Aloisio, J. A., and **Hajjar, J. F.** (2015). "Thermal Bridging in Cladding Systems," Building Energy 2015, Boston, Massachusetts, March 11-13, 2015.
32. Wang, L., Brown, C., Webster, M. D., and **Hajjar, J. F.** (2014). "Deconstructable Steel-Concrete Shear Connection for Sustainable Composite Floor Beams Systems," 2014 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Hamilton, Ontario, Canada, August 5-8, 2014.
33. Güldür, B. and **Hajjar, J. F.** (2014). "Texture Mapped Laser Point Clouds for Damage Detection and Documentation on Structures," 2014 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Hamilton, Ontario, Canada, August 5-8, 2014.
34. **Hajjar, J. F.** (2014). "Life in Academia, Life in the Profession," Panel Discussion, 2014 SEI Structures Congress, Boston, Massachusetts, April 3-5, 2014.
35. Nguyen, T., H., Le, C. H., and **Hajjar, J. F.** (2013). "Spectral Finite Elements for High-Resolution Topology Optimization," 2015 APCOM & ISCM Conference, Singapore, December 11-13, 2013.
36. Deniz, D., Song, J., **Hajjar, J. F.**, and Nguyen, T. H. (2013). "Probabilistic Assessment of Dynamic Instability of Frame Structures Under Seismic Excitations," 2013 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Evanston, Illinois, August 4-7, 2013.
37. **Hajjar, J. F.**, Denavit, M. D., Perea, T., and Leon, R. T., (2013). "New Strategies for Design of Steel-concrete Composite Members and Frames," Composite Construction in Steel and Concrete VII, Palm Cove, Australia, July 28-August 1, 2013.
38. Güldür, B. and **Hajjar, J. F.** (2013). "Automated Diagnostics for Coastal Systems: Damage Assessment," Sustaining Coastal Cities Conference, Boston, Massachusetts, May 22-23, 2013.
39. **Hajjar, J. F.**, Eatherton, M. R., Ma, X., and Deierlein, G. G., (2012). "Resilient Engineering of Steel Structures: Controlled Rocking Systems with Replaceable Energy-Dissipating Fuses," Fifth Kwang-Hua Forum: Innovations and Implementations in Earthquake Engineering Research, Shanghai, China, December 8-10, 2012.
40. Nguyen, T. H., **Hajjar, J. F.**, Song, J., and Deniz, D. (2012). "CZM-based Macro-model for Structural Progressive Collapse Analysis of Frame Structures," 2012 Engineering

Mechanics Institute Conference, American Society of Civil Engineers, Notre Dame University, South Bend, Indiana, June 17-20, 2012.

41. Deniz, D., Song, J., **Hajjar, J. F.**, and Nguyen, T. H. (2012). "Identification of Dynamic Instability Limit States for Structures under Stochastic Excitations," 2012 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Notre Dame University, South Bend, Indiana, June 17-20, 2012.
42. Szyniszewski, S., Smith, B. H., Arwade, S. R., Schafer, B. W., and **Hajjar, J. F.** (2012). "Reliability of Steel Foam Components," 2012 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Notre Dame University, South Bend, Indiana, June 17-20, 2012.
43. LaFave, J. M., Steelman, J. S., Fahnestock, L. A., Filipov, E. T., **Hajjar, J. F.**, and Foutch, D.A. (2012). "Seismic Bridge Bearing Tests and Systems Analyses for Refining IDOT Bridge Design Procedures," Proceedings of the ASCE/SEI Structures Congress 2012, Chicago, Illinois, March 29-31, 2012, ASCE, Reston, Virginia.
44. Borello, D. J., Denavit, M. D., and **Hajjar, J. F.** (2012). "Design of Bolted Steel Slip-Critical Connections with Fillers," Proceedings of the ASCE/SEI Structures Congress 2012, Chicago, Illinois, March 29-31, 2012, ASCE, Reston, Virginia.
45. Szyniszewski, S., Schafer B. W., **Hajjar, J. F.**, Smith, B. H., and Arwade, S. R. (2011). "Metal Foam Computational Models for New Class of Structural Applications," 2011 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Northeastern University, Boston, Massachusetts, June 2-4, 2011.
46. Arwade, S. R., Smith, B. H., Szyniszewski, S., Schafer B. W., and **Hajjar, J. F.** (2011). "Review of Steel Foams: Processing, Properties, and Applications," 2011 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Northeastern University, Boston, Massachusetts, June 2-4, 2011.
47. Denavit, M. D., **Hajjar, J. F.**, Perea, T., and Leon, R. T. (2011). "Cyclic Evolution of Beam-Column Interaction Strength of Concrete-Filled Steel Tube Beam-Columns," 2011 Engineering Mechanics Institute Conference, American Society of Civil Engineers, Northeastern University, Boston, Massachusetts, June 2-4, 2011.
48. **Hajjar, J. F.** (2011). "Sustainable Structural Systems: Designing Our Future," North American Steel Construction Conference 2011, Pittsburgh, Pennsylvania, May 11-14, 2011.
49. **Hajjar, J. F.** (2011). "Overview of Composite Construction in the 2010 AISC Seismic Provisions," North American Steel Construction Conference 2011, Pittsburgh, Pennsylvania, May 11-14, 2011.

50. **Hajjar, J. F.** (2011). “Sustainable Engineering of Steel Structures: Self-Centering Rocking Systems with Articulated Energy-Dissipating Fuses,” EDIFICA: Más Allá del Límite, Instituto Tecnológico y de Estudios Superiores de Monterrey, Monterrey, Mexico, November 4, 2010.
51. **Hajjar, J. F.** (2010). “Behavior and Design of Composite Column Systems: Recent Research and New Provisions,” North American Steel Construction Conference, Orlando, Florida, May 12-15, 2010.
52. **Hajjar, J. F.** (2010). “Overview of Composite Construction in the 2010 AISC Seismic Provisions,” ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-15, 2010.
53. **Hajjar, J. F.**, Varma, A. H., Bursi, O., and Hitaka, T. (2009). “Seismic Engineering of Composite Structures: A World Overview,” ASCE/SEI Structures Congress 2009, Austin, Texas, April 30-May 2, 2009.
54. **Hajjar, J. F.** and Eatherton, M. (2009). “Structural Fuses: A New Approach to Damage Tolerant Design,” 10th Annual Structures Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois, April 16, 2009.
55. Pallarés Rubio, L. and **Hajjar, J. F.** (2008). “Design of Shear Connectors Between Steel and Concrete In Composite Construction,” Composite Construction in Steel and Concrete VI, Engineering Conferences International, Tabernash, Colorado, July 20-24, 2008.
56. Perea, T., Leon, R. T., and **Hajjar, J. F.** (2008). “Behavior of Composite CFT Beam-Columns Based on Nonlinear Fiber Element Analysis,” Composite Construction in Steel and Concrete VI, United Engineering Foundation, Tabernash, Colorado, July 20-24, 2008.
57. **Hajjar, J. F.**, Eatherton, M., Deierlein, G. G., Krawinkler, H., Billington, S., and Ma, X. “Seismic Response of Steel Controlled Rocking Frames with Replaceable Energy-Dissipating Fuses,” Sixth International Workshop on Connections in Steel Structures, Chicago, Illinois, June 24, 2008.
58. Eatherton, M., **Hajjar, J. F.**, Deierlein, G. G., Krawinkler, H., Billington, S., and Ma, X. (2008). “Controlled Rocking of Steel-Framed Buildings with Replaceable Energy-Dissipating Fuses,” 6th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Portland, Oregon, June 19, 2008.
59. Tort, C. and **Hajjar, J. F.** (2006). “Behavior and Design of Concrete-Filled Steel Tube Members and Frames,” American Concrete Institute Concrete Conference: Bridging the Carolinas: Fast Track Innovations, Charlotte, North Carolina, March 26-30, 2006.
60. **Hajjar, J. F.** and Leon, R. T. (2003). “An Overview of the Facilities of the George E. Brown, Jr., Network for Earthquake Engineering Simulation,” Behaviour of Steel Structures in Seismic Areas, STESSA 2003, Naples, Italy, June 9-12, 2003.

61. **Hajjar, J. F.**, Schultz, A. E., Shield, C. K., and Saari, W. (2000). “Design Formulas for the Strength of Headed Stud Connections in Composite Infilled Frames,” Composite Construction in Steel and Concrete IV, United Engineering Foundation, Banff, Alberta, Canada, May 28-June 2, 2000.
62. **Hajjar, J. F.**, Tong, X., Schultz, A. E., and Shield, C. K. (2000). “Seismic Behavior and Design of Steel Frames with Composite Reinforced Concrete Infill Walls,” Sixth ASCCS International Conference on Steel-Concrete Composite Structures, Los Angeles, California, March 22-24, 2000.

Sponsored Projects

Current Sponsored Research

National Science Foundation

Principal Investigators: Sun, H. (PI), **Hajjar, J. F.**, and Wang, Y. (Co-PIs)
 Project: “Physics-Reinforced Deep Learning for Structural Metamodeling”
 Sponsor: National Science Foundation (CMMI-2013067)
 Amount: \$599,005
 Duration: June 1, 2020 to May 31, 2023

Principal Investigators: Sznaier, M. (PI), Abur, A., Barret, L., Boynton, P., Camps, O., Griffin, J., **Hajjar, J. F.**, Marsella, S., and Yeh, E. (Co-PIs)
 Project: “CRISP Type 2: Identification and Control of Uncertain, Highly Interdependent Processes Involving Humans with Applications to Resilient Emergency”
 Sponsor: National Science Foundation, Critical Resilient Interdependent Infrastructure Systems and Processes (CMMI-1638234)
 Amount: \$2,498,810
 Duration: August 1, 2016 to July 31, 2021

Principal Investigators: Schafer, B. W. (PI), Eatherton, M. R., Moen, C. D., and **Hajjar, J. F.** (Co-PIs)
 Project: “Collaborative Research: Transforming Building Structural Resilience Through Innovation in Steel Diaphragms”
 Sponsor: National Science Foundation (CMMI-1562490)
 Amount: \$540,000 plus \$16,000 Research Experience for Undergraduates
 Duration: September 1, 2016 to August 31, 2021

Industry Organizations

Principal Investigators: Schafer, B. (PI), Eatherton, M., **Hajjar, J. F.**, and Easterling, W. S. (Co-PIs)
 Project: “Steel Diaphragm Innovation Initiative”

Sponsor: American Institute of Steel Construction, American Iron and Steel Institute, Metal Building Manufacturers Association, Steel Deck Institute, and Steel Joist Institute
 Amount: \$1,100,000 plus in-kind materials
 Duration: September 1, 2016 to December 15, 2021

Previous Sponsored Research

National Science Foundation

Principal Investigators: Singh, S. (PI), Akinci, B., Huber, D., Scherer, S., and **Hajjar, J. F.** (Co-PIs)
 Project: “NRI: Large: Collaborative Research: Fast and Accurate Infrastructure Modeling and Inspection with Low-Flying Robots”
 Sponsor: National Science Foundation (IIS-1328816)
 Amount: \$2,210,000 plus \$16,800 Research Experience for Undergraduates
 Duration: September 15, 2013 to August 31, 2018

Principal Investigators: **Hajjar, J. F.** (PI) and Webster, M. D. (Co-PI)
 Project: “Deconstructable Systems for Sustainable Design of Steel and Composite Structures”
 Sponsor: National Science Foundation (CMMI-1200820)
 Amount: \$250,000 plus \$14,400 Research Experience for Undergraduates
 Duration: July 1, 2012 to June 30, 2017

Principal Investigators: Myers, A. T. (PI), Arwade, S. R., and **Hajjar, J. F.** (Co-PIs)
 Project: “Reliability-based Hurricane Risk Assessment for Offshore Wind Farms”
 Sponsor: National Science Foundation (CMMI-1234560)
 Amount: \$325,000
 Duration: July 1, 2012 to August 31, 2016

Principal Investigators: Bernstein, M. (PI), **Hajjar, J. F.**, Luzzi, D. E., Metghalchi, M., and Wadia-Fascetti, S. (Co-PIs)
 Project: “Northeastern University Proposal to Host CMMI 2012 Grantee Conference: Boston, Massachusetts, July 8-12, 2012; Engineering Transformation Through Partnerships”
 Sponsor: National Science Foundation (CMMI-1066138)
 Amount: \$289,369
 Duration: January 1, 2011 to December 31, 2015

Principal Investigators: Song, J. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “An Integrated Platform for Validated Prediction of Collapse of Structures”
 Sponsor: National Science Foundation (CMMI-1000666)
 Amount: \$280,000
 Duration: August 16, 2010 to July 31, 2013

Principal Investigators: Arwade, S. R. (PI), Schafer, B. W., and **Hajjar, J. F.** (Co-PIs)
 Project: “Reconfiguring Steel Structures: Energy Dissipation and Buckling Mitigation Through the Use of Steel Foams”
 Sponsor: National Science Foundation (CMMI-0970059)
 Amount: \$346,625 plus \$6,000 Research Experience for Undergraduates
 Duration: July 1, 2010 to June 30, 2013

Principal Investigator: Deierlein, G. G. (PI), **Hajjar, J. F.**, Billington, S., Midorakawa, M., Krawinkler, H. (Co-PIs)
 Project: “NEESR-SG: Controlled Rocking of Steel-Framed Buildings with Replaceable Energy Dissipating Fuses”
 Sponsor: National Science Foundation: George E. Brown, Jr. Network for Earthquake Engineering Simulation Research (NEESR) (CMMI-0530756)
 Amount: \$1,366,000 plus \$6,000 Research Experience for Undergraduates and \$100,000 in-kind matching funds provided by several corporations
 Duration: September 1, 2005 to August 31, 2011

Principal Investigators: Leon, R. T. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “NEESR-II: System Behavior Factors for Composite and Mixed Structural Systems”
 Sponsor: National Science Foundation: George E. Brown, Jr. Network for Earthquake Engineering Simulation Research (NEESR) (CMMI-0619047)
 Amount: \$374,998 plus \$50,000 in-kind matching funds provided by several corporations
 Duration: October 1, 2006 to September 30, 2010

Principal Investigators: **Hajjar, J. F.** (PI) and Goodno, B. (Co-PI)
 Project: “Memphis Testbed Validation and Capstone Scenarios”
 Sponsor: National Science Foundation: Mid-America Earthquake Center (EEC-9701785)
 Amount: \$195,000
 Duration: October 1, 2005 to September 30, 2008

Principal Investigators: Elnashai, A. S. (PI), Spencer, B. F., Kuchma, D., and **Hajjar, J. F.** (Co-PIs)
 Project: “Operations and Maintenance for MUST-SIM Facility”

Sponsor: National Science Foundation: George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) (CMS-0402490)
 Amount: \$3,977,851
 Duration: August 16, 2005 to August 15, 2008

Principal Investigators: **Hajjar, J. F.** (PI) and Elnashai, A. S. (Co-PI)
 Project: “Advanced Simulation Tools”
 Sponsor: National Science Foundation: Mid-America Earthquake Center (EEC-9701785)
 Amount: \$210,000
 Duration: October 1, 2005 to September 30, 2007

Principal Investigator: **Hajjar, J. F.**
 Project: “Performance Assessment and Performance-Based Design Methodology for Composite Construction with Application to Concrete-Filled Steel Tube Structural Systems”
 Sponsor: National Science Foundation (CMS-0084848)
 Amount: \$194,142 plus \$12,000 Research Experience for Undergraduates
 Duration: September 15, 2000 to August 31, 2006

Principal Investigators: French, C. W. (PI), Shield, C. K., **Hajjar, J. F.**, and Ernie, D. W. (Co-PIs)
 Project: “NSF NEES MAST Laboratory Augmentation: Development of PsD Capabilities and Enhanced Display”
 Sponsor: National Science Foundation: George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) (CMS-0429214)
 Amount: \$115,276
 Duration: October 1, 2004 to September 30, 2005

Principal Investigators: Shield, C. K. (PI), **Hajjar, J. F.**, and French, C. W. (Co-PIs)
 Project: “Operations and Maintenance for MAST Laboratory”
 Sponsor: National Science Foundation: George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) (CMS-0402490)
 Amount: \$4,637,689
 Duration: October 1, 2004 to August 15, 2005

Principal Investigators: French, C. W. (PI), Schultz, A. E., **Hajjar, J. F.**, Shield, C. K.,
Ernie, D. W., Du, D. H. C., and Dexter, R. J. (Co-PIs)
Project: “A System for Multi-Axial Subassemblage Testing (MAST)”
Sponsor: National Science Foundation: George E. Brown, Jr. Network for
Earthquake Engineering Simulation (NEES) (CMS-0086602)
Amount: \$6,791,585 plus \$875,000 internal matching funds and \$3,925,000 internal
funding for construction of new MAST Laboratory building
Duration: January 1, 2001 to September 30, 2004

Principal Investigators: **Hajjar, J. F.** (PI), Schultz, A. E., and Shield, C. K. (Co-PIs)
Project: “Composite Interaction of Steel Frame Members and Reinforced Concrete
Walls under Seismic Loading”
Sponsor: National Science Foundation: Research on Composite and Hybrid
Structures, A U.S.-Japan Cooperative Earthquake Engineering Program (CMS-
9810005)
Amount: \$109,935 plus \$5,000 Research Experience for Undergraduates
Duration: September 15, 1998 to August 31, 2002

Principal Investigator: **Hajjar, J. F.**
Project: “Conference: Composite Construction in Steel and Concrete IV”
Sponsor: National Science Foundation (CMS-9900355), submitted through the United
Engineering Foundation
Amount: \$15,000
Duration: July 1, 1999 to February 28, 2001

Principal Investigators: Schultz, A. E. (PI), **Hajjar, J. F.**, and Shield, C. K. (Co-PIs)
Project: “Seismic Behavior of Steel Moment-Resisting Frames with Composite
Reinforced Concrete Infill Walls”
Sponsor: National Science Foundation: Research on Composite and Hybrid
Structures, A U.S.-Japan Cooperative Earthquake Engineering Program (CMS-
9632506)
Amount: \$243,896 plus \$10,000 Research Experience for Undergraduates
Duration: September 15, 1996 to August 31, 2000

Principal Investigator: **Hajjar, J. F.**
Project: “Research Initiation Award: Three-Dimensional Nonlinear Cyclic Analysis
of Concrete-Filled Tube Beam-Columns and Composite Subassemblies”
Sponsor: National Science Foundation (CMS-9410473)
Amount: \$100,000 plus \$10,000 Research Experience for Undergraduates and
\$10,000 internal matching funds

Duration: September 15, 1994 to August 31, 1998

Principal Investigators: French, C. W. (PI), Galambos, T. V., Newcomb, D. E., Shield, C. K., Snyder, M. B., and **Hajjar, J. F.** (Co-PIs)

Project: “Data Acquisition and Control System and Actuators for Structural and Materials Engineering Research”

Sponsor: National Science Foundation (Engineering Research Equipment) (CMS-9500424)

Amount: \$50,000 plus \$50,000 internal matching funds

Duration: July 1, 1995 to June 30, 1997

Principal Investigators: Leon, R. T. and **Hajjar, J. F.** (Co-PIs)

Project: “The Effect of Composite Floor Behavior on the Failure of Steel Moment-Resisting Connections”

Sponsor: National Science Foundation: Northridge Earthquake Investigation Program (CMS-9416363)

Amount: \$65,000 plus \$20,000 in-kind matching funds provided by several corporations

Duration: September 15, 1994 to August 31, 1996

Other Federal Agencies

Principal Investigators: **Hajjar, J. F.** (PI), Padir, T., Boynton, P., and Flynn, S. (Co-PIs)

Project: “Automated Assessment of Damaged Environments due to Extreme Events using Unmanned Aerial Vehicles”

Sponsor: Department of Homeland Security (subaward from the Pacific Northwest Economic Region Foundation through the National Infrastructure Protection Plan program)

Amount: \$375,000 plus \$248,682 cost share

Duration: December 15, 2017 to December 31, 2018

Principal Investigators: Flynn, S. E. (PI), **Hajjar, J. F.**, Ganguly, A., Bliss, D., and Bendixen, L. (Co-PIs)

Project: “Disaster Resilience of Buildings, Infrastructure, and Communities”

Sponsor: National Institute of Standards and Technology

Amount: \$300,000

Duration: January 1, 2014 to December 31, 2014

Principal Investigators: Elnashai, A. S. (PI), **Hajjar, J. F.**, Spencer, B. F., Hashash, Y., Rix, G., French, S., and DesRoches, R. (Co-PIs)

Project: “IEMA Seismic Risk and Vulnerability Study”

Sponsor: Federal Emergency Management Agency through the Illinois Emergency Management Agency

Amount: \$295,006
 Duration: July 1, 2006 to December 31, 2007

Principal Investigators: Elnashai, A. S. (PI), Masud, A., **Hajjar, J. F.**, and Hashash, Y. (Co-PIs)
 Project: “Rebuilding Pakistan Schools and Hospitals”
 Sponsor: USAID
 Amount: \$87,232
 Duration: July 1, 2007 to August 31, 2007

Principal Investigators: Galambos, T. V. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “Required Inelastic Properties of High Yield Strength Steels”
 Sponsor: National Institute of Standards and Technology
 Amount: \$80,000
 Duration: September 1, 1995 to November 30, 1996

Principal Investigator: **Hajjar, J. F.**
 Project: “An Analytical and Forensic Evaluation of a Steel Moment Resisting Frame Subjected to the Northridge, California Earthquake”
 Sponsor: SAC Joint Venture (through the Federal Emergency Management Agency): Structural Engineers Association of California, Applied Technology Council, and California Universities for Research in Earthquake Engineering, Phase I
 Amount: \$7,448
 Duration: October 1, 1995 to December 31, 1995

State Agencies

Principal Investigators: **Hajjar, J. F.** (PI) and Myers, A. T. (Co-PI)
 Project: “Development of a National Offshore Wind Research Agenda”
 Sponsor: Massachusetts Clean Energy Center
 Amount: \$50,000 plus \$12,500 in matching funds from Northeastern University
 Duration: September 1, 2016 to September 1, 2018

Principal Investigators: Myers, A. T. (PI), Arwade, S. R., **Hajjar, J. F.**, and Hines, E. M. (Co-PIs)
 Project: “Risk and Decision Making for the Hurricane Threat to Offshore Wind Farms”
 Sponsor: Massachusetts Clean Energy Center
 Amount: \$125,802
 Duration: June 1, 2014 to May 31, 2016

Principal Investigators: **Hajjar, J. F.** (PI), Ganguly, A., Ruth, M., Boynton, P., and Flynn, S. (Co-PIs)
 Project: “Disaster and Infrastructure Resiliency Planning”
 Sponsor: Massachusetts Port Authority (via Kleinfelder)
 Amount: \$500,000
 Duration: July 1, 2013 to June 30, 2014

Principal Investigators: **Hajjar, J. F.** (PI), LaFave, J. M., and Fahnestock, L. A. (Co-PIs)
 Project: “Calibration and Refinement of Illinois’ Earthquake Resisting System Bridge Design Methodology”
 Sponsor: Illinois Department of Transportation
 Amount: \$769,000
 Duration: January 1, 2009 to June 30, 2013

Principal Investigators: Andrawes, B. (PI), **Hajjar, J. F.**, and Olson, S. (Co-PIs)
 Project: “Investigation of Dekalb County Bridge Collapse”
 Sponsor: Illinois Department of Transportation
 Amount: \$20,280
 Duration: September 10, 2008 to May 15, 2009

Principal Investigators: **Hajjar, J. F.** (PI) and Dexter, R. J. (Co-PI)
 Project: “Load Rating by Load Testing on Bridges”
 Sponsor: Minnesota Department of Transportation
 Amount: \$289,771
 Duration: January 1, 2003 to October 31, 2006

Principal Investigators: Shield, C. K. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “Repair of Fatigued Steel Girder Bridges with Composite Fiber Strips”
 Sponsor: Minnesota Department of Transportation
 Amount: \$100,000
 Duration: January 1, 1999 to September 30, 2002

Principal Investigator: **Hajjar, J. F.**
 Project: “Live Load Stresses in Steel Curved Girder Bridges”
 Sponsor: Minnesota Department of Transportation
 Amount: \$35,540
 Duration: February 1, 1997 to September 30, 2001

Principal Investigator: **Hajjar, J. F.**

Project: “Stresses in the Negative Moment Region of Composite Steel Girder Bridges”

Sponsor: Center for Transportation Studies

Amount: \$28,752

Duration: September 1, 1998 to August 31, 1999

Principal Investigators: Dexter, R. J. (PI) and **Hajjar, J. F.** (Co-PI)

Project: “Fatigue Evaluation of Bridge 4654”

Sponsor: Minnesota Department of Transportation

Amount: \$24,915

Duration: June 1, 1998 to December 31, 1998

Principal Investigators: French, C. W. (PI) and **Hajjar, J. F.** (Co-PI)

Project: “Cracking in Concrete Bridge Decks”

Sponsor: Minnesota Department of Transportation

Amount: \$70,000

Duration: November 1, 1994 to December 31, 1997

Principal Investigators: Galambos, T. V. (PI), **Hajjar, J. F.**, and Leon, R. T. (Co-PIs)

Project: “Stresses in Steel Curved Girder Bridges”

Sponsor: Minnesota Department of Transportation

Amount: \$71,606

Duration: July 1, 1994 to June 30, 1996

Industry Organizations

Principal Investigators: **Hajjar, J. F.**

Project: “Thermal Break Strategies in Steel Building Structures”

Sponsor: Schock

Amount: \$30,000 plus in-kind materials

Duration: July 1, 2015 to December 31, 2016

Principal Investigators: **Hajjar, J. F.**

Project: “Thermal Break Strategies in Steel Building Structures”

Sponsor: American Composite Manufacturers Association and Pultrusion Industry Council

Amount: \$50,000 plus in-kind materials

Duration: October 1, 2014 to December 31, 2016

Principal Investigators: **Hajjar, J. F.**

Project: “Thermal Break Strategies in Steel Building Structures”
 Sponsor: American Institute of Steel Construction
 Amount: \$100,000 plus in-kind materials
 Duration: October 1, 2013 to December 31, 2016

Principal Investigators: **Hajjar, J. F.** (PI) and Webster, M. D. (Co-PI)
 Project: “Design for Deconstruction in Steel Structures”
 Sponsor: American Institute of Steel Construction
 Amount: \$50,000 plus in-kind materials
 Duration: December 30, 2012 to October 31, 2016

Principal Investigators: **Hajjar, J. F.**
 Project: “Steel Diaphragm Innovation Initiative”
 Sponsor: American Iron and Steel Institute
 Amount: \$62,500 plus in-kind materials
 Duration: September 1, 2015 to August 31, 2016

Principal Investigators: **Hajjar, J. F.**
 Project: “Steel Diaphragm Innovation Initiative”
 Sponsor: American Institute of Steel Construction
 Amount: \$37,500 plus in-kind materials
 Duration: September 1, 2015 to August 31, 2016

Principal Investigators: **Hajjar, J. F.** (PI), Webster, M. D., and D’Aloisio, J. A. (Co-PIs)
 Project: “Thermal Break Strategies for Cladding Systems in Building Structures”
 Sponsor: Charles Pankow Foundation
 Amount: \$195,000 plus in-kind materials
 Duration: September 1, 2012 to December 31, 2016

Principal Investigators: **Hajjar, J. F.** (PI)
 Project: “Seismic Behavior and Design of Steel Fused-Based Controlled Rocking Spine Structures”
 Sponsor: Nippon Steel Engineering Co., Ltd.
 Amount: \$15,000
 Duration: July 1, 2012 to June 30, 2013

Principal Investigators: Leon, Roberto T. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “Behavior and Design of Composite Steel and Concrete Beam-Columns”
 Sponsor: American Institute of Steel Construction
 Amount: \$150,000
 Duration: October 1, 2007 to September 30, 2012

Principal Investigators: **Hajjar, J. F.** (PI)
 Project: “Controlled Rocking of Steel-Framed Buildings with Replaceable Energy
 Dissipating Fuses”
 Sponsor: American Institute of Steel Construction
 Amount: \$8,000
 Duration: September 1, 2005 to August 31, 2011

Principal Investigators: **Hajjar, J. F.** (PI)
 Project: “Cyclic Axial Testing of Buckling-Restrained Braces”
 Sponsor: Nippon Steel Engineering Co., Ltd.
 Amount: \$40,000 plus \$100,000 in-kind matching funds provided by Nippon Steel
 Engineering Co., Ltd.
 Duration: August 1, 2007 to December 31, 2009

Principal Investigators: **Hajjar, J. F.** (PI)
 Project: “Behavior of Bolted Steel Slip Critical Connections with Fillers”
 Sponsor: American Institute of Steel Construction
 Amount: \$81,000 plus \$120,000 in-kind matching funds provided by W&W Steel Co.
 Duration: October 15, 2007 to October 14, 2009

Principal Investigators: **Hajjar, J. F.** (PI) and Spencer B. F. (Co-PI)
 Project: “Multi-Hazard Loss Assessment for Memphis Light, Gas, and Water”
 Sponsor: Memphis Light, Gas, and Water (MLGW)
 Amount: \$50,000
 Duration: December 16, 2006 to May 15, 2007

Principal Investigators: **Hajjar, J. F.** (PI) and Dexter, R. J. (Co-PI)
 Project: “Design of Column Bases for Ductile Moment Frames and Ductile Braced
 Frames in High Seismic Zones”
 Sponsor: American Institute of Steel Construction
 Amount: \$40,000
 Duration: September 1, 2003 to May 31, 2004

Principal Investigators: Dexter, R. J. (PI) and **Hajjar, J. F.** (Co-PI)
 Project: “Reassessment of Design Criteria and New Alternatives for Column
 Transverse Stiffeners (Continuity Plates) and Web Doubler Plates”
 Sponsor: American Institute of Steel Construction
 Amount: \$299,946 plus \$60,000 in-kind matching funds provided by several
 corporations
 Duration: May 1, 1999 to June 30, 2002

Principal Investigator: **Hajjar, J. F.**
 Project: “The Effect of Floor Slabs on Steel Moment Frame Connections”
 Sponsor: American Institute of Steel Construction
 Amount: \$10,000
 Duration: August 1, 1995 to August 31, 1996

Principal Investigator: **Hajjar, J. F.**
 Project: “Assessing Nonlinear System Stability for the Design of Frame Structures”
 Sponsor: American Institute of Steel Construction
 Amount: \$5,000
 Duration: August 1, 1994 to July 31, 1996

University Programs

Principal Investigators: Hajjar, J. F. (PI), Padir, T., and Boynton, P. (Co-PIs)
 Project: “Automated Assessment of Damaged Environments due to Extreme Events using
 Unmanned Aerial Vehicles”
 Sponsor: Northeastern University Global Resilience Institute
 Amount: \$100,000
 Duration: July 1, 2017 to December 31, 2018

Principal Investigator: **Hajjar, J. F.**

Project: “Stresses in the Negative Moment Region of Composite Steel Girder Bridges”
 Sponsor: Center for Transportation Studies, University of Minnesota
 Amount: \$28,752
 Duration: September 1, 1998 to August 31, 1999

Principal Investigators: Schultz, A. E. (PI), **Hajjar, J. F.**, Shield, C. K., and French, C. W. (Co-PIs)

Project: “High Capacity MTS Hydraulic Actuator for Experimental Research in Structural Engineering”

Sponsor: University of Minnesota (Grant-in-Aid of Research, Artistry, and Scholarship)

Amount: \$25,000 plus \$25,000 internal matching funds

Duration: November 1, 1996 to June 30, 1997

Principal Investigator: **Hajjar, J. F.**

Project: “Three-Dimensional Nonlinear Cyclic Analysis of Concrete-Filled Tube Beam-Columns and Composite Subassemblies”

Sponsor: University of Minnesota (Grant-in-Aid of Research, Artistry, and Scholarship)

Amount: \$12,600

Duration: July 1, 1994 to December 31, 1995

Principal Investigator: **Hajjar, J. F.**

Project: “Parallel Processing of Nonlinear Composite Frames Subjected to Seismic Excitation”

Sponsor: University of Minnesota (Grant-in-Aid of Research, Artistry, and Scholarship)

Amount: \$12,600

Duration: January 1, 1993 to June 30, 1994

DISCIPLINE-RELATED SERVICE ACTIVITIES

Professional Activities

National and International

American Concrete Institute (ACI)

1996- ACI Committee 335, Composite and Hybrid Structures (member, 2017-; associate member, 1996-2013)

American Institute of Steel Construction (AISC)

2016- AISC Specification Ad Hoc Committee on Seismic Analysis (member)
 2016-2019 AISC Specification Task Committee 7 on Evaluation and Repair (member)
 2011- AISC Specification Task Committee 1 on Coordination (member)
 2011-2013 AISC T. R. Higgins Lectureship Award Committee (member)
 2010-2013 AISC Specification Task Committee 12 on Nuclear Facilities Design, Ad-Hoc Subcommittee on Modular Composite Construction (member)
 2010-2015 AISC Committee on Research (member)
 2010-2013 AISC Education Awards Committee (member)
 2010-2012 AISC Manual Task Committee 5 on Seismic (member)
 2006- AISC Committee on Specifications (member)
 2006-2015 AISC Specification Task Committee 9 on Seismic Design (member)
 2006-2015 AISC Specification Task Committee 9 on Seismic Design, Subcommittee 6 on Composite Construction (chair), Subcommittee 4 on Moment Frame Systems (member), and Subcommittee 7 on Analysis (member)
 2004-2006 AISC Educator Awards Committee (member)
 2002-2005 AISC Specification Commentary Development Team (chair)
 2002- AISC Specification Task Committee 5 on Composite Construction (chair, 2016-; member, 2002-2015)
 2000-2003 AISC Specification Task Committee 3 on Loads, Analysis, and Systems, Subcommittee on Analysis (chair)
 2000-2002 AISC/SSRC Specification Task Committee Stability (member)
 2000-2002 AISC/SSRC Specification Task Subcommittee on Notional Loads (chair)
 1997-2015 AISC Specification Task Committee 3 on Loads, Analysis, and Systems (chair, 2011-2015; vice-chair, 2002-2011; member, 1997-2002)
 1997-2015 AISC Specification Task Committee 10 on Stability (member, 1997-2005; corresponding member, 2005-2015)

American Society of Civil Engineers (ASCE) and Structural Engineering Institute (SEI)

2020- ASCE Committee on Reform of Structural Engineering Education - 2 (CROSEE-2) (corresponding member)

- 2020- ASCE Education Summit Working Group (member)
 2020 ASCE/SEI Committee on Reform of Structural Engineering Education Task Group (member)
 2019- ASCE/SEI Board of Governors (BOG) (member)
 2019- ASCE/SEI Publications Committee (SEI TAD EXCOM contact member)
 2018- ASCE Committee on Education (member)
 2017- ASCE/SEI Jack E. Cermak Medal Awards Committee (member)
 2016-2018 ASCE Committee on Accreditation (member)
 2016-2018 ASCE Body of Knowledge 3 Committee (corresponding member)
 2016- ASCE/SEI Awards Committee (chair 2019-2020; member 2016-)
 2016-2019 ASCE/SEI Nathan M. Newmark Medal Awards Committee (chair 2018-2019; member 2016-2018)
 2016-2017 ASCE/SEI Structures Congress Committee (member)
 2014- ASCE Department Heads Coordinating Council (chair, 2018-; member, 2014-2018)
 2012- ASCE/SEI Technical Activities Division Executive Committee (TAD EXCOM) (BOG contact member, 2019-; past-chair, 2016-2017; chair, 2015-2016; vice-chair, 2014-2015; secretary, 2013-2014; member, 2012-2013)
 1994-2004 ASCE/SEI Technical Administrative Committee on Metals (chair, 2001-2004; member, 1994-2000)
 1993- ASCE/SEI Technical Committee on Composite Construction (control group member, 2011-2012; member, 1993-2010, 2017-)
 1993-1996 ASCE Task Committee on Effective Length (chair)
 1993-1995 ASCE Technical Committee on Flexural Members (member)
 1991-2001 ASCE Technical Committee on Load and Resistance Factor Design (chair, 1994-2000; control group member, 1992-1994, 2001; member, 1991-1992)

Applied Technology Council (ATC)

- 2015-2017 ATC-114 Project Technical Committee (member): Analysis, Modeling, and Simulation for Performance-Based Seismic Engineering
 2013-2019 ATC-106 Project Technical Committee (member): Seismic Behavior and Design of Deep, Slender Wide-Flange Structural Steel Beam-Column Members - Phase 2 – Experimental Evaluation
 2013 ATC-96 Project Technical Committee (member): Nonlinear Response History Analysis of Steel Moment Frames
 2012-2013 ATC-103 Project Technical Committee (member): Seismic Design of Steel Special Concentrically Braced Frame Systems: A Guide for Practicing Engineers
 2011 ATC-90 Project Technical Committee (member): Seismic Behavior and Design of Deep, Slender Wide-Flange Structural Steel Beam-Column Members: Phase 1
 2009-2010 ATC-76-6 Project Review Panel (member): Improved Nonlinear Static Seismic Analysis Procedures – Multiple-Degree-of-Freedom Modeling

Building Seismic Safety Council (BSSC)

- 2020- BSSC Strategic Planning Committee (member)
- 2016- BSSC Issue Team 9 on Diaphragm Issues (corresponding member)
- 2011-2015 BSSC Issue Team on Self-Centering Rocking Systems (member)
- 2006-2010 BSSC Provisions Update Committee – Task Subcommittee 6 on Steel Structures (member)
- 2001-2004 BSSC Provisions Update Committee (member)
- 1998-2004 BSSC Provisions Update Committee -- Task Subcommittee 11 on Composite Construction (member)

Consortium of Universities for Research in Earthquake Engineering (CUREE)

- 2004-2005 Board of Directors (member)
- 2001-2005 University of Minnesota Institutional Representative

Earthquake Engineering Research Institute (EERI)

- 1999-2005 EERI Seismic Ethics Review Committee (member)

European Convention for Constructional Steelwork (ECCS)

- 2013- Task Committee 11 on Composite Construction (corresponding member)
- 2010- Task Committee 13 on Seismic Design (corresponding member)

International Association of Bridge and Structural Engineering (IABSE)

- 2001-2002 IABSE Working Commission 2 on Steel, Timber, and Composite Structures (corresponding member)

International Federation for Structural Concrete (Fédération Internationale du Béton, FIB)

- 2011- Special Activity Group 6 on Steel-Concrete Composite Structures (corresponding member)

National Research Council (NRC) of the National Academies

- 2011 “Grand Challenges in Earthquake Engineering Research—A Vision for NEES Experimental Facilities and Cyberinfrastructure Tools,” National Research Council of the National Academies, Washington, D.C. (steering committee)

Network for Earthquake Engineering Simulation Consortium, Inc. (NEES)

- 2006-2007 Task Group on Information Technology Vision (chair)
- 2006-2007 Task Group on Success (corresponding member)
- 2005-2009 Information Technology Strategy Committee (chair-elect, 2005-2006; chair, 2007-2008; past-chair, 2008-2009)
- 2003-2005 Data Sharing and Archiving Committee (member)

- 2003-2005 Information Technology Committee (member)
 2003-2005 University of Minnesota Alternate Institutional Representative

Research Council on Structural Connections (RCSC)

- 2015- Task Group 3 on Design (member)
 2005- Voting member for RCSC *Specification for Structural Joints Using High-Strength Bolts*

Structural Stability Research Council (SSRC)

- 2008-2009 SSRC Nominating Committee (member)
 1992-2016 SSRC Task Group 4, Frames (member)
 1991-2004 SSRC Task Group 29, Inelastic Analysis for Frame Design (member)

Local

American Society of Civil Engineers (ASCE)

- 2010- Boston Society of Civil Engineers Section (member)
 1998-2005 ASCE Minnesota Section Board (Director of Technical Services, 1998-2000; Secretary, 2000-2002, Vice President of Information Services, 2002-2003; President-Elect, 2003-2004; President, 2004-2005)
 1993-2005 ASCE Minnesota Section Structural Committee (member)
 1988-1989 ASCE New York Metropolitan Section Computer Committee (member)

Earthquake Engineering Research Institute (EERI)

- 2013- EERI New England Regional Chapter (member)

National Council of Structural Engineering Associations (NCSEA)

- 2010- Structural Engineers Association of Massachusetts (member)
 2001-2003 Minnesota Structural Engineering Emergency Response Plan (MnSEERP) Committee (member)

Organization of International Conferences, Symposia, Workshops, Seminars, and Sessions

Organization of International Conferences and Symposia

- June 7-9, 2021 Chair, "National Civil Engineering Department Heads Conference," Portland State University, Portland, Oregon, American Society of Civil Engineers, Reston, Virginia.
 July 26-30, 2021 Scientific Committee, "Composite Construction in Steel and Concrete IX," Stromberg, Germany.

- May 26-28, 2021 International Advisory Committee, “10th International Conference on the Behavior of Steel Structures in Seismic Areas (STESSA 2021),” Timisoara, Romania.
- July 20-August 12, 2020 Chair, “Civil and Environmental Engineering Solutions to the COVID-19 Pandemic,” Panel Discussion Series (three panels), Department of Civil and Environmental Engineering, Northeastern University, Boston, Massachusetts (virtual).
- June 8-30, 2020 Chair, “National Civil Engineering Department Heads Conference,” Virtual Conference, American Society of Civil Engineers, Reston, Virginia (virtual).
- September 11-13, 2019 Scientific Committee, “Stability and Ductility of Steel Structures (SDSS 2019),” Prague, Czech Republic.
- July 3-5, 2019 International Scientific Committee, “9th International Conference on Steel and Aluminum Structures (ICSAS19),” Bradford, England.
- May 30-31, 2019 Chair, “National Civil Engineering Department Heads Conference,” American Society of Civil Engineers,” Southern Methodist University, Dallas, Texas.
- May 28-30, 2019 Planning Committee, “Civil Engineering Education Summit, American Society of Civil Engineers,” Southern Methodist University, Dallas, Texas.
- July 24-27, 2018 International Scientific Committee, “Eighth International Conference on Thin-Walled Structures (ICTWS’18),” Lisbon, Portugal.
- July 16-20, 2018 Scientific Committee, “International Association of Shell and Spatial Structures Symposium: Creativity in Structural Design (IASS 2018),” Boston, Massachusetts.
- June 27-29, 2018 Scientific Committee, “Advances in Steel-Concrete Composite Structures (ASCCS 2018),” Valencia, Spain.
- July 30-Aug. 2, 2017 Scientific Committee, “Composite Construction in Steel and Concrete VIII,” Jackson Hole, Wyoming.
- June 7-11, 2016 Organization and Host Committee, “8th International Colloquium on Bluff Body Aerodynamics & Applications (BBAA VIII),” Boston, Massachusetts.
- May 30-June 1, 2016 International Scientific Committee, “International Colloquium on Stability and Ductility of Steel Structures (SDSS 2016),” Timisoara, Romania.

- May 26-27, 2016 Co-Chair, “Workshop: Setting a Broader Impact Innovation Roadmap,” Division of Civil, Mechanical, and Manufacturing Innovation, National Science Foundation, Arlington, Virginia.
- May 24-26, 2016 Chair, “Eighth International Workshop on Connections in Steel Structures (Connections VIII),” Boston, Massachusetts.
- July 26-27, 2015 International Scientific Committee, “6th International Symposium on Innovation and Sustainability of Structures in Civil Engineering (ISISS 2015),” Tsinghua University, Beijing, China.
- July 21-24, 2015 International Scientific Committee, “8th International Conference on Advances in Steel Structures (ICASS’15),” Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal.
- July 1-3, 2015 International Advisory Committee, “8th International Conference on the Behavior of Steel Structures in Seismic Areas (STESSA 2015),” Tongji University, Shanghai, China.
- October 17-18, 2014 International Scientific Committee, “5th Asia Conference on Earthquake Engineering: Earthquake Engineering for Resilient Communities (5ACEE),” National Center for Research on Earthquake Engineering (NCREE), National Taiwan University, Taipei, Taiwan.
- September 10-12, 2014 International Advisory Committee, “7th European Conference on Steel and Composite Structures (Eurosteel 2014),” Naples, Italy.
- September 3-4, 2014 Organizing Committee, “International Symposium on Developing Standards for Disaster Resilience of Buildings, Infrastructure, and Communities,” National Institute of Standards and Technology, Gaithersburg, Maryland.
- April 3-5, 2014 Structural Engineering Institute (SEI) Technical Activities Division Executive Committee Liaison, “SEI Structures Congress 2014,” Boston, Massachusetts.
- October 8-11, 2013 International Scientific Committee, “10th Pacific Structural Steel Conference (PSSC 2013),” Singapore.
- May 16-17, 2013 International Scientific Committee, “11th International Conference on Modern Building Materials, Structures and Techniques,” Vilnius, Lithuania.
- August 12-14, 2012 Local Organizing Committee, “3rd American Association for Wind Engineering Workshop,” Hyannis, Massachusetts.

- July 8-12, 2012 Co-Chair, “CMMI 2012 Grantee Conference: Engineering Transformation Through Partnerships,” Boston, Massachusetts.
- July 2-4, 2012 International Scientific Committee, “Advances in Steel and Concrete Composite and Hybrid Structures (ASCCS 2012),” Singapore.
- March 6-8, 2012 International Scientific Committee, “9th Conference on Urban Earthquake Engineering (9CUEE) and 4th Asian Conference on Earthquake Engineering (4ACEE),” Tokyo, Japan.
- January 9-11, 2012 International Advisory Committee, “7th International Conference on the Behavior of Steel Structures in Seismic Areas (STESSA 2012),” Santiago, Chile.
- June 2-4, 2011 Co-Chair, “Engineering Mechanics Conference 2011,” Engineering Mechanics Institute, American Society of Civil Engineers, Boston, Massachusetts.
- July 25-29, 2010 Technical Committee, “9th U.S. National and 10th Canadian Conference on Earthquake Engineering: *Reaching Beyond Borders*,” Toronto, Canada.
- July 21-23, 2010 International Scientific Committee, “4th International Conference on Steel and Composite Structures (ICSCS’2010),” Sydney, Australia.
- April 8, 2010 Co-Chair, 11th Annual Structural Engineering Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois.
- December 7-9, 2009 Program Steering Committee, “ATC-SEI Conference on Improving the Seismic Performance of Existing Buildings,” San Francisco, California.
- Sept. 24-25, 2009 Scientific Committee, “International Colloquium on Structural Stability and Ductility,” Structural Stability Research Council, Vilnius, Lithuania.
- August 16-20, 2009 International Advisory Committee, “6th International Conference on the Behavior of Steel Structures in Seismic Areas (STESSA 2009),” Philadelphia, Pennsylvania.
- July 8-10, 2009 International Scientific Committee, “ASCCS ’09: International Conference on Steel-Concrete Composite and Hybrid Structures,” Association for Steel-Concrete Composite and Hybrid Structures (ASCCS), Leeds, United Kingdom.
- April 16, 2009 Chair, 10th Annual Structural Engineering Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois.

- July 20-24, 2008 Co-Chair, “Composite Construction in Steel and Concrete VI,” Tabernash, Colorado, Engineering Conferences International, New York, New York.
- March 27, 2008 Chair, 9th Annual Structural Engineering Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois.
- December 5-7, 2007 International Scientific Committee, “ICASS ’07: Advances in Steel Structures,” Fifth International Conference, Singapore.
- April 5, 2007 Chair, 8th Annual Structural Engineering Conference, University of Illinois at Urbana-Champaign, Urbana, Illinois.
- March 13-17, 2007 PSSC International Advisory Committee (PIAC), representing the American Institute of Steel Construction, “Eighth Pacific Structural Steel Conference (PSSC),” Pacific Council of Structural Steel Associations, Wairakei, New Zealand.
- September 6-8, 2006 International Scientific Committee, “International Colloquium on Stability and Ductility of Steel Structures,” Structural Stability Research Council, Lisbon, Portugal.
- June 21-23, 2006 Organizing Committee, NEES Fourth Annual Meeting, Network for Earthquake Engineering Simulation, NEES, Inc., Washington, D.C.
- July 18-23, 2004 Steering Committee, “Composite Construction in Steel and Concrete V,” Berg-en-Dal, Mpumalanga, South Africa, Engineering Conferences International, New York, New York.
- December 9-11, 2002 Steering Committee, “ICASS ’02: Advances in Steel Structures,” Third International Conference, Hong Kong, China, Hong Kong Institution of Engineers and the Hong Kong Institute of Steel Construction.
- May 28-June 2, 2000 Co-chair, “Composite Construction in Steel and Concrete IV,” Banff, Alberta, Canada, United Engineering Foundation, New York, New York.
- June 6-7, 1997 Co-chair, “Innovations in Structural Design: Strength, Stability, Reliability. A Symposium Honoring Theodore V. Galambos,” Minneapolis, Minnesota, University of Minnesota, Minneapolis, Minnesota.

Organization of Workshops

- March 18-19, 2019 Co-Chair, “French-American Innovation Day 2019: An International Workshop on Floating Offshore Wind Energy Technology: Innovation to Commercialization,” Boston, Massachusetts.

- December 14-15, 2017 Co-Chair, “POWER-US: Partnership for Offshore Wind Energy Workshop,” Partnership for Offshore Wind Energy, Northeastern University, Boston, Massachusetts.
- March 14-15, 2011 Steering Committee, “Grand Challenges in Earthquake Engineering Research: A Community Workshop,” National Research Council, Irvine, California.
- August 7, 2003 Steering Committee, “Network for Earthquake Engineering (NEES) Summit Meeting,” Chicago, Illinois. Led breakout session on NEES Software Deployment.

Organization of Sessions

Dr. Hajjar has participated in the organization over fifteen sessions at national conferences, primarily through the American Society of Civil Engineers. Examples include:

- April 23-25, 2015 **Hajjar, J. F.**, Myers, A. T. and Arwade, S., “Advancing Design Approaches for Wind Energy Structures,” 2015 SEI Structures Congress, Boston, Massachusetts, April 23-25, 2015.
- April 3-5, 2014 **Hajjar, J. F.**, “Damage Detection and Evaluation,” 2014 SEI Structures Congress, Boston, Massachusetts, April 3-5, 2014 (session moderator).
- April 3-5, 2014 **Hajjar, J. F.**, “Seismic Effects,” 2014 SEI Structures Congress, Boston, Massachusetts, April 3-5, 2014 (session moderator).
- July 25-29, 2010 Deierlein, G. G. and **Hajjar, J. F.**, “International Asia Focus: Large-Scale Testing of Steel Framed Buildings (Parts 1 and 2),” 9th National Conference on Earthquake Engineering, Toronto, Canada, July 25-29, 2010.
- May 12-14, 2010 Griffis, L. A. and **Hajjar, J. F.**, “New Provisions for Composite Construction in the 2010 AISC Specification for Structural Steel Buildings and the 2010 AISC Seismic Provisions,” ASCE/SEI Structures Congress 2010, Orlando, Florida, May 12-14, 2010.
- July 20-24, 2008 **Hajjar, J. F.**, “Seismic Design of Composite Construction: Panel Discussion,” Composite Construction in Steel and Concrete VI, Engineering Conferences International, Tabernash, Colorado, July 20-24, 2008.

- June 16-18, 2008 **Hajjar, J. F.**, “Innovative System Performance,” 6th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Portland, Oregon, June 16-18, 2008.
- June 20, 2007 **Hajjar, J. F.** and Sritharan, S., “IT Achievements, Goals, and Opportunities within NEES: Preparing for 2009-2014,” 5th Annual Meeting of the George E. Brown, Jr. Network for Earthquake Engineering Simulation, Snowbird, Utah, June 21, 2007
- May 23, 2004 **Hajjar, J. F.** (ASCE Technical Committee on Composite Construction), “International Large-Scale Testing of Composite Steel-Concrete Structures,” Technical Session held at the ASCE Structures Congress ’04, Nashville, Tennessee, May 23-25, 2004
- April 5, 2002 **Hajjar, J. F.** (ASCE Technical Committee on Load and Resistance Factor Design), “AISC LRFD Manual and Specification for Structural Steel Building Design: New Provisions and Future Directions,” Technical Session held at the ASCE Structures Congress ’02, Denver, Colorado, April 4-6, 2002
- July 21, 1998 **Hajjar, J. F.** (ASCE Technical Committee on Load and Resistance Factor Design) and Ellingwood, Bruce R. (ASCE Technical Committee on Safety of Buildings), “International Developments in Probability-Based Limit States Design of Steel Structures. I and II,” Technical Session held at the First Structural Engineers World Congress, San Francisco, California, July 19-23, 1998
- July 20, 1998 **Hajjar, J. F.** (ASCE Technical Committee on Composite Construction), “U.S./Japan Composite Program: Steel Reinforced Concrete and Research for Innovation,” Technical Session held at the First Structural Engineers World Congress, San Francisco, California, July 19-23, 1998
- April 5, 1995 **Hajjar, J. F.** (ASCE Technical Committee on Load and Resistance Factor Design), “Stability of Steel Frames,” Technical Session held at the ASCE Structures Congress ’95, Boston, Massachusetts, April 2-5, 1995

Organization of Seminars for Local Engineers

Dr. Hajjar has participated in or assisted in the organization of over twenty seminars and panel discussions for local engineers. Recent examples include:

- February 20, 2020 “Anticipating the Future Built Environment,” Gerald A. Buckwalter, AISC T. R. Higgins Lecture, organized this lecture, Northeastern University, Boston, Massachusetts.

- February 26, 2015 “Birth of the Steel Skyscraper,” Benjamin J. Schafer, organized this lecture, Northeastern University, Boston, Massachusetts.
- February 13, 2014 “Structural Innovation: Combining Classic Theories with New Technologies,” William F. Baker, AISC T. R. Higgins Lecture, organized this lecture, Northeastern University, Boston, Massachusetts.
- October 18, 2012 “Design in a Time of Change,” moderated this panel discussion, Structural Engineering Institute Technical Committee on Aesthetics in Design, Boston, Massachusetts.
- January 30, 2002 “Building Design After September 11, 2001: Architecture, Structure, Safety -- A Forum for the Minnesota Community,” participated in and assisted in the organization of this panel discussion, University of Minnesota, Minneapolis, Minnesota.
- November 29, 2001 “Disaster Management in Minnesota: The Role of the Civil Engineering Community -- A Panel Discussion,” moderated and assisted in the organization of this panel discussion, ASCE Minnesota Section, Minneapolis, Minnesota.

Editorial and Peer Review Duties

Editorial Duties

- 2011- Editorial Board, *Steel Construction*, European Convention for Constructional Steelwork (ECCS), Ernst & Sohn, Berlin, Germany.
- 2010- Associate Editor, *Journal of Structural Engineering*, American Society of Civil Engineers, Reston, Virginia.
- 2008-2013 Editorial Board, *Earthquake Spectra*, Earthquake Engineering Research Institute, Oakland, California.
- 2001- Editorial Board, *Journal of Constructional Steel Research*, Elsevier Science Publishers, Oxford, U.K.
- 2000 Guest Editor, *Engineering Structures*, Special Issue, Vol. 22, No. 2, February, Elsevier Science Publishers, London, U.K.

Review Duties

- 2020 Proposal reviewer, National Fund for Scientific and Technological Research (FONDECYT) of the National Research and Development Agency (ANID) of the Science, Technology, Knowledge and Innovation Ministry, Santiago, Chile.

- 2019 Department Review, Department of Civil and Environmental Engineering, Stevens Institute of Technology, Hoboken, New Jersey.
- 2018 Department Review, Department of Civil and Environmental Engineering, Southern Methodist University, Dallas, Texas.
- 2018 Department Review, Department of Civil Engineering, Johns Hopkins University, Baltimore, Maryland.
- 2017 Department Review, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- 2015-2019 Proposal reviewer, InnovateMass Program, Massachusetts Clean Energy Center, Boston, Massachusetts.
- 2010-2019 Advisory Committee, Department of Civil Engineering, Johns Hopkins University, Baltimore, Maryland.
- 2010-2018 Advisory Council, Department of Civil and Environmental Engineering, Cornell University, Ithaca, New York.
- 1998- Text books: Reviewer of several text books on topics in structural engineering.
- 1998- Ph.D. dissertations: External examiner or committee member for Ph.D. dissertation defenses for:
- (b)(6), University of Sydney, Sydney, Australia, 2018
 - (b)(6), University of Cincinnati, Cincinnati, Ohio, 2011
 - (b)(6), Georgia Institute of Technology, Atlanta, Georgia, 2010
 - (b)(6), Monash University, Melbourne, Australia, 2003
 - (b)(6), Lehigh University, Bethlehem, Pennsylvania, 2003
 - (b)(6), Lehigh University, Bethlehem, Pennsylvania, 2000
 - (b)(6), University of Sydney, Sydney, Australia, 1998
- 1994- Research proposal and site reviewer: National Science Foundation, Engineering Directorate, Division of Civil, Mechanical and Manufacturing Innovation: Proposal reviewer by mail and on numerous panels for unsolicited proposals, four panels for the CAREER award; one panel for the Major Research Instrumentation program; reviewer for an on-site visit for one of the equipment sites of the George E. Brown, Jr. Network for Earthquake Engineering Simulation (2003); and reviewer for an on-site visit for the Southern California Earthquake Center (2019).
- 1989- Manuscripts: Reviewer of manuscripts for the following refereed journals and special publications:

Advances in Civil Engineering
Advances in Engineering Software
Advances in Materials Science and Engineering
American Concrete Institute, Special Publications
American Society of Civil Engineers, Special Publications
Automation in Construction
Bulletin of Earthquake Engineering
Bulletin of the New Zealand Society for Earthquake Engineering
Computation
Computational Mechanics
Computer-Aided Civil and Infrastructure Engineering
Computer Methods in Applied Mechanics and Engineering
Earthquake Engineering and Structural Dynamics
Earthquake Engineering Research Institute, Special Publications
Earthquake Spectra
Earthquakes and Structures
Engineering Computations
Engineering Structures
Engineering Journal, American Institute of Steel Construction
Finite Elements in Analysis and Design
International Journal of Microcomputers in Civil Engineering
International Journal for Numerical Methods in Engineering
International Journal of Structural Stability and Dynamics
International Video Journal of Engineering Research
Japan Architectural Review
Journal of Aerospace Engineering
Journal of Bridge Engineering, American Society of Civil Engineers
Journal of Constructional Steel Research
Journal of Earthquake Engineering
Journal of Engineering Mechanics, American Society of Civil Engineers
Journal of Field Robotics
Journal of Materials and Design
Journal of Structural Engineering, American Society of Civil Engineers
Journal of the International Association of Shell and Spatial Structures
National Academy of Sciences, India
Natural Hazards Review
Nuclear Engineering and Design
Sensors
Steel and Composite Structures
Structural Design of Tall and Special Buildings
Structural Engineering and Mechanics
Structural Health Monitoring
Structural Safety
Structural Stability and Dynamics
Structure and Infrastructure Engineering
Structures and Buildings, Proceedings of the Institution of Structural Engineers

Structures Journal, American Concrete Institute
Structural Safety
Technical Report Series, Multidisciplinary Center for Earthq. Engrg. Research
Thin-Walled Structures
United Engineering Foundation, Proceedings

OTHER SERVICE ACTIVITIES

University Activities, Northeastern University

2019-2020 Provost Search Committee (chair)
 2019 “Research at Northeastern University: Sustainability and Resilience,”
 Presentation to Northeastern University Board of Trustees, Northeastern
 University, Boston, Massachusetts, June 6.
 2017 “Urban Engineering for a Sustainable Future,” *NU@Noon*: Presentation to
 Northeastern University Alumni, George J. Kostas Research Institute for
 Homeland Security, Northeastern University, Burlington, Massachusetts,
 November 28.
 2016 “Urban Engineering: New Ideas for a Sustainable Future,” Presentation to
 Northeastern University Alumni, Los Angeles, California, September 28.
 2016- Global Resilience Institute Faculty Advisory Committee (member)
 2015-2019 Research Policy Oversight Committee, Faculty Senate (member)
 2015-2017 Provost Advisory Committee on NSF Compliance Remediation (member)
 2014-2016 President’s Social Impact Council (member)
 2014-2016 Faculty Senate (senator)
 2014-2015 University Distinguished Professors Committee (member)
 2014 Sustainability Presentation, Northeastern University Board of Trustees (presenter)
 2014-2015 Cross-College Faculty Search Committee on Urban Coastal Sustainability and
 Adaptation (member)
 2013-2014 Cross-College Faculty Search Committee on Urban Coastal Sustainability and
 Adaptation (member)
 2013 Sustainability Pop-Up (presenter)
 2013 Empowerfest (presenter)
 2012-2013 Cross-College Faculty Search Committee on Coastal Engineering (member)
 2012 Leadership Development Program
 2011-2012 Cross-College Faculty Search Committee on Coastal Engineering (chair)
 2010-2012 Faculty Handbook Project Committee (member)
 2010-2011 Cross-College Faculty Search Committee on Urban Sustainability (chair)
 2010-2011 School of Architecture External Review Committee (member)
 2010 Ph.D. dissertation and M.S. thesis: Committee member for Ph.D. dissertations
 and M.S. theses for numerous students

College of Engineering Activities, Northeastern University

2019-2020	Department of Mechanical and Industrial Engineering Chair Search Committee (member)
2012-2013	Department of Electrical and Computer Engineering Chair Search Committee (member)
2010-2012	Department of Mechanical and Industrial Engineering Chair Search Committee (member)
2010-2011	Co-op Faculty Search Committee (member)

Department of Civil and Environmental Engineering Activities, Northeastern University

2020-	Committee on Diversity, Equity, Inclusion, and Justice (member)
2015-2019	Earthquake Engineering Research Institute Student Chapter (advisor)
2012-2014	Infrastructure Systems Working Group (member <i>ex-officio</i>)
2012-2014	Graduate Recruiting Working Group (chair)
2010-	Tenure and Promotion Committee (member <i>ex-officio</i>)
2010-	Department Chair; department milestones since 2010: <ul style="list-style-type: none"> • Working with the faculty, established interdisciplinary research and education thrusts for the department that integrate well with university strengths and key opportunities and challenges of national and international need in civil and environmental engineering. • Working with the university and faculty, increased the size of the faculty from 14 tenure/tenure-track and 2 non-tenure track in 2010 to 31 tenure/tenure-track and 9 non-tenure track in 2019; additional faculty searches are underway. • Working with the faculty, more than doubled the size of the graduate program from approximately 30 Ph.D. students, 40 full-time M.S. students, and 30 part-time M.S. students in 2010 to approximately 70 Ph.D. students, 160 full-time M.S. students, and 40 part-time M.S. students in 2019; maintained the size of the undergraduate program at approximately 400, one of the largest enrollments for a private university in the country in civil and environmental engineering. • Working with the faculty, led the establishment of a new B.S. degree in Environmental Engineering, a new B.S. in Environmental Engineering and Health Science, a new M.S. degree in Environmental Engineering, a new M.S. degree in Engineering and Public Policy, a new M.S. degree in Sustainable Building Systems, a new concentration in Data and Systems for the M.S. in Civil Engineering, several associated new B.S./M.S. and B.S./PlusOne programs, several new combined majors, a new minor in Civil Engineering, a new minor in Architectural Engineering, a new required undergraduate course in energy systems, and several new undergraduate and graduate technical

elective courses to broaden the curriculum for the undergraduate and graduate degrees in civil and environmental engineering.

- Participated integrally in department, college, and university development and advancement, meeting with major gift donors, hosting cultivation events; and stewarding donors.
- Oversaw significant expansion of department space, development of new laboratory facilities, and renovations of laboratory and education facilities.
- Established a new vision and charter for the Civil and Environmental Engineering (CEE) Industrial Advisory Board (IAB)
- Working with the IAB, established Industry Leadership Night to bring approximately 100 top industry leaders, including alumni and friends, to campus to hear a distinguished speaker and learn about the department; prior speakers have included the Massachusetts Secretary of Transportation.
- Initiated the CEE Distinguished Seminar program to foster visits from world-class researchers and practitioners.
- Initiated several department programs, events, and awards, including travel grants for graduate students, undergraduate research opportunities, welcome event for new majors, CEE Excellence in Teaching Award, and related activities.

University Activities, University of Illinois at Urbana-Champaign

- 2009-2010 Academic Senate (senator)
- 2005=2010 Ph.D. dissertation and M.S. thesis: Committee member for Ph.D. dissertations and M.S. theses for numerous students

College of Engineering Activities, University of Illinois at Urbana-Champaign

- 2006 Mid-America Earthquake Center Information Technology Specialist Search Committee (chair)
- 2006 Mid-America Earthquake Center Administrative Manager Search Committee (member)
- 2005-2006 National Center for Supercomputing Applications Research Programmer (three positions) Search Committee
- 2005-2007 Deputy Director, Mid-America Earthquake Center
- Supervise and set policy for entire research, education, and outreach program of the MAEC.
 - Assist the Director in establishing and executing all budgets and schedules for the MAEC, including providing initial recommendations for both.
 - Participate in all personnel decisions, including hiring staff, creating new positions, and assisting the Director in managing all staff.

- Assist the Director and Business Development Director in establishing all transition plans for the MAEC after NSF funding ceases on 9/30/07 and core institution funding diminishes extensively on 9/30/08.
 - Participate in or lead most proposals sent out from the MAEC for external funding of research and operations.
 - Participate in many of the continuing education seminars conducted by the MAEC.
 - Assist in organizing the teaching of CEE 598 Consequence-Based Risk Management, a graduate course created by the MAEC.
 - Assist in reporting to the dean on a periodic basis on the status of the MAEC activities.
- 2005-2007 Thrust Leader, Engineering Engines Thrust, Mid-America Earthquake Center
- 2005-2007 Co-Thrust Leader, Consequence-Based Risk Management Thrust, Mid-America Earthquake Center

Department of Civil and Environmental Engineering Activities, University of Illinois at Urbana-Champaign

- 2009-2010 Promotion and Tenure Committee (member)
- 2009-2010 Non-Tenure Track Faculty Evaluation Committee (member)
- 2006-2009 Chair, Structures Faculty
- Organize and run all Structures Faculty meetings
 - Oversee all teaching assignments
 - Oversee all graduate student recruiting
 - Approve programs of study for all structures graduate students
 - Co-chair annual Structures Conference, attended by several hundred practitioners
 - Oversee discussion of departmental and university policies and documents requiring input from the Structures Faculty
- 2006-2008 Administrative Committee (member)
- 2006-2007 Graduate Affairs Committee (member)
- 2006-2007 Structures Faculty Search Committee (member)
- 2005-2010 Promotion and Tenure Ad Hoc Committee (to evaluate and prepare cases for four assistant and associate professors) (chair)
- 2005-2010 Structures Graduate Studies Admissions and Fellowship Ad Hoc Committee
- 2005-2008 Information Technology Director, Multi-axial Full-Scale Subassemblage Testing and Simulation (MUST-SIM) Facility, Network for Earthquake Engineering Simulation (NEES).
- 2005-2006 Structures Faculty Search Committee (two positions) (member)
- 2005-2008 MUST-SIM Research Engineer (Operations Manager, two positions) Search Committee (member)
- 2005-2006 MUST-SIM Research Engineer (Systems Manager) Search Committee (chair)

2005-2006 Safety Committee

University Activities, University of Minnesota

2003-2005 Center for Transportation Studies Faculty Scholar
 2003-2004 President's Distinguished Faculty Mentor Program
 2001-2004 Minnesota Supercomputer Institute Supercomputing Resources Peer Review and Allocations Committee
 1999 Taught steel structures portion of Professional Engineers Review Class (CE 0005)
 1993 Advisor for "Building a New World," Institute of Technology
 1992-2005 Ph.D. dissertation and M.S. thesis: Committee member for Ph.D. dissertations and M.S. theses for numerous students

Institute of Technology Activities, University of Minnesota

1999-2000 Institute of Technology Faculty Search Committee for position on Computational Design in the Digital Technology Center
 1994 Institute of Technology Computer Committee – Subcommittee on Software Standardization

Department of Civil Engineering Activities, University of Minnesota

2004-2005 Department of Civil Engineering Structures Faculty Search Committee
 2004-2005 Department of Civil Engineering Graduate Studies Committee (and 1997-2000)
 2003-2004 MAST Laboratory Grand Opening Committee, Chair
 2002-2004 Department of Civil Engineering Planning Council
 2002-2004 Gave yearly lecture on Structural Engineering in CE 1101, Civil Engineering Orientation
 2001-2005 Information Technology Director, Multi-axial Subassemblage Testing (MAST) (MUST-SIM) Laboratory, Network for Earthquake Engineering Simulation (NEES).
 2001-2004 Department of Civil Engineering Undergraduate Studies Committee
 2001-2003 Department of Civil Engineering Fundraising Committee
 2000-2005 Earthquake Engineering Research Institute Student Chapter Advisor
 1998-2005 Promotion and Tenure Committee
 1998-2000 Coordinated the effort to construct the Infrastructure Engineering Building / MAST Laboratory
 1997-2003 Department of Civil Engineering Mentor for Asst. Prof. Paige Novak
 1995 Department of Civil Engineering Structures Faculty Search Committee
 1993-1997 American Society of Civil Engineers Student Chapter Advisor
 1992-2000 Department of Civil Engineering Computer Committee

Other Outside Activities

- 2019 Interview with the *Structural Engineering Channel Podcast* about resilience and sustainability in structural engineering.
- 2019 Interview with Glenn Bell, President of the American Society of Civil Engineers Structural Engineering Institute, about the future of civil and structural engineering education.
- 2019 Interview with the *Washington Post*, *EE Times India*, and other venues about the roof collapse due to fire at Notre Dame in Paris.
- 2016 Interview with Autodesk *Redshift* about innovation in the architecture/engineering/construction (AEC) industry.
- 2016 Interview with the *Composites Weekly* about use of composites in off-shore wind and building system applications.
- 2015 Interview with the Boston *Herald* about MBTA bridge maintenance after the Boston winter of 2014-2015.
- 2015 Interview with *BostInno* about design for deconstruction in relation to the Boston bid for the 2024 Summer Olympics
- 2014 Participated on a Career Panel for the American Society of Mechanical Engineers Student Chapter, Yale University, New Haven, Connecticut.
- 2012 Interview with Boston Public Radio *Innovation Hub*, WGBH Radio, on sustainable building design and design for deconstruction.
- 2012 Interview with TBS eFM Radio for the program *1013 Main Street* in Seoul, Korea on fuse-based controlled-rocking systems.
- 2011 Interviews with the Boston *Globe*, *Popular Mechanics*, New York City *Metro News*, and other organizations after the August 23, 2011 Virginia earthquake.
- 2011 Interviews with the National Public Radio, the Boston *Globe*, *Popular Mechanics*, *Christian Science Monitor*, and other organizations after the March 11, 2011 Tohoku, Japan earthquake.
- 2010- Yale University Class Agent.
- 2010 News articles published in many publications and websites on the 2010 *Popular Mechanics* Breakthrough Award about NEES research on Self-Centering Rocking Systems with Energy Dissipating Fuses for Steel Buildings Subjected to Earthquakes.
- 2009 News articles published and videos posted by national and international press, including *Engineering News Record*, *Popular Science*, and many other publications and websites about NEES research on Self-Centering Rocking Systems with Energy Dissipating Fuses for Steel Buildings Subjected to Earthquakes.
- 2007-2008 Interviews with CNN; WAND (NBC), Champaign, Illinois; WICD (ABC), Champaign, Illinois; WCIA (CBS), Champaign, Illinois; WEIU TV, Charleston, Illinois; Voice of America; Radio France Internationale, Paris, France; Radio Classique, Paris, France; National Public Radio; Minnesota Public Radio; WILL

- Champaign Public Radio; WDWS Radio, Champaign, Illinois; Mainichi Daily News, Japan; Le Soir News, Brussels, Belgium; Washington Post; Time Magazine; St. Paul Pioneer Press; St. Louis Dispatch; and the Champaign News-Gazette after the collapse of the I-35W steel bridge in Minneapolis, Minnesota on August 1, 2007.
- 2006 Interview with The Weather Channel, New York, New York regarding the Mid-America Earthquake Center.
- 2005-2007 Interviews with several regional newspapers, radio stations, and television stations regarding the Mid-America Earthquake Center.
- 2005 Judge, Future Cities Competition, Minneapolis, Minnesota.
- 2004 Interviews with KARE Television, Minneapolis, Minnesota and WCCO Radio, Minneapolis Minnesota, Minnesota regarding the December 26, 2004 tsunami in the Indian Ocean.
- 2004 Interviews with the St. Paul *Pioneer Press*, St. Paul, Minnesota; Minneapolis *Star Tribune*, Minneapolis, Minnesota; KARE Television, Minneapolis, Minnesota; WCCO Television, Minneapolis, Minnesota; WCCO Radio, Minneapolis, Minnesota regarding the MAST Laboratory and NEES Grand Opening.
- 2001 Interviews with the St. Paul *Pioneer Press*, St. Paul, Minnesota; Fox News Television, Minneapolis, Minnesota; KSTP Television, Minneapolis, Minnesota; and the RK Radio Network, Minneapolis, Minnesota after the collapse of the World Trade Center.
- 2001 Mayo Clinic, Rochester, Minnesota. Advised on repair and retrofit measures for a large bronze sculpture that had cracked due to fatigue from the wind.
- 1996 Speaker at Science Museum of Minnesota, St. Paul, Minnesota, with C. K. Shield.
- 1994 Advisor for “Newton’s Apple”, a Twin Cities Public television program on bridges.