

Richard Sause, Ph.D., P.E.

**Director, ATLSS Center
Joseph T. Stuart Professor of Structural Engineering
Department of Civil and Environmental Engineering
Lehigh University**

Education

- Ph.D. Civil Engineering, University of California, Berkeley, California, 1989.
- M.S. Civil Engineering, University of California, Berkeley, California, 1983.
- B.S. Civil Engineering, Rensselaer Polytechnic Institute, Troy, New York, 1981.

Teaching and Scholarship Areas

Structural Design and Analysis, Application of High-Performance Materials, Innovative Structural Systems, Earthquake Engineering and Structural Dynamics, Structural Engineering with Computers.

Research and Professional Experience

Lehigh University: July 1989 – present.

Assistant Professor of Civil Engineering: September 1989 - August 1995.

Associate Professor of Civil Engineering: September 1995 - August 2000.

Professor of Structural Engineering: September 2000 - present.

Joseph T. Stuart Professor: September 2003 – present.

Faculty Associate, ATLSS Center: July 1989 - August 1999.

Co-Director, ATLSS Center: September 1999 – September 2001.

Director, ATLSS Center: September 2001 – present.

Funded research areas include innovative self-centering earthquake-resistant systems; seismic performance of precast frames, walls, and diaphragms; seismic performance of structures with supplemental dampers; new high performance steel highway bridge systems; fatigue of highway sign and traffic signal structures; and in-service performance of precast box beam bridges; inelastic behavior of high-performance steel members; seismic retrofit of non-ductile reinforced concrete frame structures; seismic behavior of concrete filled steel tube (CFT) columns and frames, and experimental evaluation of fiber-reinforced polymer composite structures. Two demonstration bridges based his high performance steel bridge research are now in service. ATLSS Director responsibilities include overseeing approximately \$6 million in annual research expenditures and a staff of 25 support personnel and research scientists, and leading more than 10 research faculty, and 45 graduate students and visiting researchers. Co-author of more than 90 peer-reviewed journal articles, and more than 230 conference proceedings papers and technical reports. Principal or Co-Principal Investigator for more than 60 research projects with budgets exceeding \$50,000, and 15 large-scale multi-investigator research programs with budgets exceeding \$1,000,000. Supervised or co-supervised 24 completed Ph.D. students.

SSD, Inc., Berkeley, California: December 1983 - June 1989.

Senior Engineer/Consultant – Experienced in linear and nonlinear analysis of structures subjected to static
January 2013

and dynamic loads. Supervised investigations of wind-induced above-ground pipeline vibration. Developed a patented elastomeric pipeline vibration damping system. Developed extreme-load design criteria for arctic offshore pipelines. Performed design studies for arctic offshore pipelines. Developed load modules and efficient linear dynamic solution techniques for offshore engineering computer code.

Earthquake Engineering Research Center, University of California: January – December 1983.

Assistant Research Specialist - Participated in earthquake simulation tests of 1/5th-scale model 7-story reinforced concrete frame-wall structure. Responsible for instrumentation, data reduction and interpretation.

Memberships and Affiliations

Registered Professional Engineer, State of California.

Member, American Society of Civil Engineers (ASCE).

Member, American Iron and Steel Institute Bridge Task Force.

Professional Member, Precast/Prestressed Concrete Institute (PCI).

Member, PCI Research and Development Council; PCI Seismic Committee.

Member, International Association of Bridge and Structural Engineers (IABSE).

Individual Affiliate, Transportation Research Board (TRB).

Member of Issue Team 6 on Diaphragm Issues, Provisions Update Committee (PUC), Building Seismic Safety Council (working toward 2014 NEHRP Provisions)

Member of Issue Team 5 on Self-Centering Rocking Systems, Provisions Update Committee (PUC), Building Seismic Safety Council (working toward 2014 NEHRP Provisions)

Honors and Awards

AISC National Steel Bridge Alliance (NSBA), Merit Award, Short Span Category, Lynch Village Bridge (collaborator on project team), 2012.

International Association for Bridge Maintenance and Safety (IABMAS), 2012 IABMAS Special Service Award, 2012.

American Society of Civil Engineers (ASCE), Raymond C. Reese Research Prize, 2009.

Libsch Research Award, Lehigh University, 2008.

American Society of Civil Engineers (ASCE), J. James R. Croes Medal, 2007.

Precast/Prestressed Concrete Institute, Charles C. Zollman Award, 2006.

American Society of Civil Engineers (ASCE), 1997 Best Paper Journal of Architectural Engineering Award, 1998.

Civil Engineering Research Foundation (CERF) Charles Pankow Award for Innovation (collaborator on project team), 1997.

College of Engineering and Applied Sciences, Lehigh University, Faculty Award Recognition, 1997.

Japan Society for the Promotion of Science Travel Fellowship, 1996.

Class of 1961 Professor, Lehigh University, 1995-1998.

American Concrete Institute (ACI), Raymond C. Reese Structural Research Award, 1987.

Patents

Hart, J.D., Sause, R., Ford, G.W., and Brown, L., "Pipeline Vibration Damper," U.S. Patent Number 5,193,644, March 16, 1993.

Michael, R.J., Sweeney, S.W., Ferro, E.B., Ricles, J., Sause, R., Mahvashmohammadi, A., and Ferro, J.A., "Compressed Elastomer Damper for Earthquake Hazard Reduction," Provisional Patent Application, January 6, 2012.

Books and Book Chapters

Karavasilis, T.L., Ricles, J.M., Sause, R., and Chen C., "Experimental Evaluation of the Seismic Performance of Steel Buildings with Passive Dampers Using Hybrid Simulation," Chapter 17 in *Role of Seismic Testing Facilities in Performance-Based Earthquake Engineering*, Fardis, M.N. and Rakicevic, Z.T., editors, Springer Science and Business Media B.V., 2012 (DOI:10.1007/978-94-007-1977-4).

Frangopol, D.M., Sause, R., and Kusko, C.S. editors, *Bridge Maintenance, Safety, Management and Life-Cycle Optimization, Proceedings of the 5th International Conference on Bridge Maintenance, Safety and Management*," CRC Press, Taylor and Francis Group, 2010.

Sause, R., Ricles, J.M., Lin, Y.-C., Seo, C.-Y., and Roke, D., "Performance-Based Design of Self-Centering Steel Frame Systems," Chapter 27 in *Advances in Performance-Based Earthquake Engineering*, Fardis, M.N., editor, Springer Science and Business Media B.V., 2010.

Ricles, J.M., Sause, R., Karavasilis, T.L., and Chen C., "Performance-based Seismic Design and Experimental Evaluation of Steel MRFs with Compressed Elastomer Dampers," Chapter 26 in *Advances in Performance-Based Earthquake Engineering*, Fardis, M.N., editor, Springer Science and Business Media B.V., 2010.

Mazzolani, F.M., Ricles, J. M., and Sause, R., editors, *STESSA 2009, Behaviour of Steel Structures in Seismic Areas, Proceedings of the 6th International Conference on Behavior of Steel Structures in Seismic Areas*," CRC Press, Taylor and Francis Group, 2009.

Peer-Reviewed Archival Publications

- Lin, Y.-C., Sause, R., and Ricles, J.M., "Seismic Performance of a Large-Scale Steel Self-Centering Moment Resisting Frame: MCE Hybrid Simulations and Quasi-Static Pushover Tests," accepted for *Journal of Structural Engineering*, 2012 (DOI: 10.1061/(ASCE)ST.1943-541X.0000661).
- Chae, Y., Ricles, J.M., and Sause, R. "Large-Scale Experimental Studies of Structural Control Algorithms for Structures with Magneto-Rheological Dampers Using Real-Time Hybrid Simulation," accepted for *Journal of Structural Engineering*, 2012 (DOI:10.1061/(ASCE)ST.1943-541X.0000691).
- Chae, Y., Ricles, J.M., and Sause, R., "Modeling of a Large-Scale Magneto-Rheological Damper for Seismic Hazard Mitigation, Part II: Semi-Active Mode," accepted for *Earthquake Engineering and Structural Dynamics*, 2012 (DOI: 10.1002/eqe.2236).
- Chae, Y., Ricles, J.M., and Sause, R., "Modeling of a Large-Scale Magneto-Rheological Damper for Seismic Hazard Mitigation, Part I: Passive Mode," accepted for *Earthquake Engineering and Structural Dynamics*, 2012 (DOI: 10.1002/eqe.2237).
- Fleischman, R.B., Restrepo, J.I., Naito, C.J., Sause, R., Zhang, D., and Schoettler, M., "Integrated Analytical and Experimental Research to Develop a New Seismic Design Methodology for Precast Concrete Diaphragms," accepted for *Journal of Structural Engineering*, 2012 (DOI: 10.1061/(ASCE)ST.1943-541X.0000734).
- Roy, S., Park, Y.-C., Sause, R., and Fisher, J., "Fatigue Performance of Stiffened Pole-to-Base Plate Socket Connections in High-mast Structures," *Journal of Structural Engineering*, 138 (10) pp.1203-1213, 2012 (DOI: 10.1061/(ASCE)ST.1943-541X.0000554).
- Naito, C., Zimpfer, J., Sause, R., Kaufmann, E., "Impact of Environmental Conditions on Field Welding of Precast Concrete Connections," *PCI Journal*, 57 (2) Spring, pp142-161, 2012.
- Sause, R., Frosch, R., Ghosh, S.K., Lien, J., Naito, C., Sennour, L., and Yamanishi, T., "Preview of PCI's Japan Earthquake Reconnaissance Team Report," *PCI Journal*, 57 (1) Winter, pp. 7-11, 2012
- Karavasilis, T.L., Sause, R., and Ricles, J.M., "Seismic Design and Evaluation of Steel MRFs with Compressed Elastomer Dampers," *Earthquake Engineering and Structural Dynamics*, 41 (3) pp. 411-429, 2012 (DOI:10.1002/eqe.1136).
- Chen, C., Karavasilis, T., Chae, Y., Ricles, J.M., and Sause, R., "Performance Evaluation of a Real-Time Hybrid Simulation System for Structural Engineering Research," *Engineering Structures*, 35 (2) pp. 71-82, 2011 (DOI:10.1016/j.engstruct.2011.10.006).
- Karavasilis, T.L., Ricles, J.M., Sause, R., and Chen, C., "Experimental Evaluation of the Seismic Performance of Steel MRFs with Compressed Elastomer Dampers Using Large-Scale Real-Time Hybrid Simulation," *Engineering Structures*, 33 (6), pp. 1859-1869, 2011 (DOI:10.1016/j.engstruct.2011.01.032).
- Guo, T., Sause, R., Frangopol, D., and Li, A. "Time-dependent Reliability of PSC Box-girder Bridge Considering Creep, Shrinkage and Corrosion," *Journal of Bridge Engineering*, 16(2), pp. 29-43, 2011 (DOI: 10.1061/(ASCE)BE.1943-5592.0000135).
- Sause, R. and Braxtan, T., "Shear Strength of Trapezoidal Corrugated Steel Webs," *Journal of Constructional Steel Research*, 67(2), pp. 223-236, 2011 (DOI:10.1016/j.jcsr.2010.08.004).

- Roy, S., Park, Y.-C., Sause, R., and Fisher, J., "Fatigue Performance of Groove Welded Tube-to-End Plate Connections in Highway Sign, Luminaire and Traffic Signal Structures," *Transportation Research Record: Journal of the Transportation Research Board*, No.2152, Transportation Research Board, Construction 2010, Volume 2, 2010.
- Chen, C., Ricles, J.M., Sause, R., and Christenson, R., "Experimental Evaluation of an Adaptive Inverse Compensation Technique for Real-Time Simulation of a Large-Scale Magneto-Rheological Fluid Damper," *Smart Materials and Structures*, 19(2), 2010.
- Naito, C.J., Sause, R., Hodgson, I., Pessiki, S., and Macioce, T., "Forensic Examination of a Non-Composite Adjacent Precast Prestressed Concrete Box Beam Bridge," *Journal of Bridge Engineering*, 15(4), pp.408-418. 2010.
- Dong, J. and Sause, R., "Finite Element Analysis of Curved Tubular Flange Girders," *Engineering Structures*, 32(1), pp. 319-327, 2010.
- Dong, J. and Sause, R., "Behavior of Hollow Tubular Flange Girder Systems for Curved Bridges," *Journal of Structural Engineering*, 136(2), pp. 174-182, 2010.
- Lee, C.-H., Marullo, T., and Sause, R., "Data Model for Hybrid Structural Experiments," *Journal of the Computational Structural Engineering Institute of Korea*, 22 (5), pp. 391-401, 2009.
- Mercan, O., Ricles, J., Sause, R., and Marullo, T., "Kinematic Transformations for Planar Multi-directional Pseudodynamic Testing," *Earthquake Engineering and Structural Dynamics*, 38 (9), pp. 1093-1119, 2009.
- Wolski, M., Ricles, J.M., and Sause, R., "Experimental Study of Self-Centering Beam-Column Connection with Bottom Flange Friction Device," *Journal of Structural Engineering*, 134 (5), pp. 479-488, 2009.
- Lee, K.-S., Ricles, J., and Sause, R., "Performance Based Seismic Design of Steel MRFs with Structural Dampers," *Journal of Structural Engineering*, 134 (5), pp. 489-498, 2009.
- Dong, J. and Sause, R., "Flexural Strength of Tubular Flange Girders," *Journal of Constructional Steel Research*, 65 (3), pp.622-630, 2009.
- Iyama, J., Seo, C.-Y., Ricles, J., and Sause, R. "Self-Centering Moment Resisting Frames with Bottom Flange Friction Devices under Earthquake Loading," *Journal of Constructional Steel Research*, 65 (2), pp. 314-325, 2009.
- Mercan, O., Ricles, J., Sause, R., and Marullo, T., "Real-Time Large-Scale Hybrid Testing for Seismic Performance Evaluation of Smart Structures," *Smart Structures and Systems, an International Journal*, 4 (5) 2008.
- Kim, B.-G. and Sause, R., "Lateral Torsional Buckling Strength of Tubular Flange Girders," *Journal of Structural Engineering*, 134 (6), pp. 902-910, 2008.
- Garlock, M.M., Ricles, J.M., and Sause, R., "Influence of Design Parameters on Seismic Response of Post-Tensioned Steel MRF Systems," *Engineering Structures*, 30 (4), pp. 1037-1047, 2008.
- Naito, C., Sause, R., and Thompson, B., "Investigation of Damaged 12-Year Old Prestressed Box Beams," *Journal of Bridge Engineering*, 13(2), pp. 139-148, 2008.
- Sause, R., Kim, B.-G., and Wimer, M.R., "Experimental Study of Tubular Flange Girders," *Journal of Structural Engineering*, 134 (3), pp.384-392, 2008.

- Herrera, R.A., Ricles, J.M. and Sause, R., "Seismic Performance Evaluation of a Large-Scale Composite MRF Using Pseudo-Dynamic Testing," *Journal of Structural Engineering*, 134 (2), pp.279-288, 2008.
- Lee, C.-H., Chin, C.H., Marullo, T., Bryan, P., Sause, R., and Ricles, J.M., "Data Model for Large-Scale Structural Experiments," *Journal of Earthquake Engineering*, 12 (1), pp. 115–135, 2008.
- Abbas, H.H., Sause, R., and Driver, R.G., "Simplified Analysis of Flange Transverse Bending of Corrugated Web I-Girders under In-Plane Moment and Shear," *Engineering Structures*, 29 (11), pp. 2816-2824, 2007.
- Perez, F. J., Sause, R., and Pessiki, S., "Analytical and Experimental Lateral Load Behavior of Unbonded Post-Tensioned Precast Concrete Walls," *Journal of Structural Engineering*, 133 (11), pp. 1531-1540, 2007.
- Sause, R., Lee, K.-S., and Ricles, J., "Rate-Independent and Rate-Dependent Models for Hysteretic Behavior of Elastomers," *Journal of Engineering Mechanics*, 133 (11), pp. 1162-1170, 2007.
- Fahnestock, L.A., Sause, R. and Ricles, J.M., "Seismic Response and Performance of Buckling-Restrained Braced Frames," *Journal of Structural Engineering*, 133 (9), pp. 1195-1204, 2007.
- Fahnestock, L.A., Ricles, J.M. and Sause, R., "Experimental Evaluation of a Large-Scale Buckling-Restrained Braced Frame," *Journal of Structural Engineering*, 133 (9), pp. 1205-1214, 2007.
- Garlock, M.M., Sause, R., and Ricles, J.M., "Behavior and Design of Post-Tensioned Steel Frame Systems," *Journal of Structural Engineering*, 133 (3), pp. 389-399, 2007.
- Abbas, H.H., Sause, R., and Driver, R.G., "Analysis of Flange Transverse Bending of Corrugated Web I-Girders under In-Plane Loads," *Journal of Structural Engineering*, 133 (3), pp. 347-355, 2007.
- Harries, K.A., Ricles, J.M., Pessiki, S., and Sause, R., "Seismic Retrofit of Lap-Splices in Non-Ductile Columns using CFRP Jackets," *ACI Structural Journal*, 103 (6), pp. 874-884, 2006.
- Abbas, H.H., Sause, R., and Driver, R.G., "Behavior of Corrugated Web I-Girders under In-Plane Loads," *Journal of Engineering Mechanics*, 132 (8), pp. 806-814, 2006.
- Oh, B. and Sause, R. "Empirical Models for Confined Concrete under Uniaxial Loading," *International Symposium on Confined Concrete*, ACI SP-238, ACI, pp. 141-156, 2006.
- Sause, R., Abbas, H.H., Driver, R.G., Anami, K., and Fisher, J.W., "Fatigue Life of Girders with Trapezoidal Corrugated Webs," *Journal of Structural Engineering*, 132 (7), pp. 1070-1078, 2006.
- Driver, R.G., Abbas, H.H., and Sause, R., "Shear Behavior of Corrugated Web Bridge Girders," *Journal of Structural Engineering*, 132 (2), pp. 195-203, 2006.
- Kim, B.-G., Wimer, M.R., and Sause, R., "Concrete-Filled Rectangular Tubular Flange Girders with Flat or Corrugated Webs," *International Journal of Steel Structures*, 5 (4), pp.337-348, 2005.
- Fleischman, R.B., Naito, C., Restrepo, J., Sause, R., Ghosh, S.K., Wan, G., Schoettler, M, and Cao, L., "Seismic Design Methodology for Precast Diaphragms Part 2: Research Program," *PCI Journal*, 50 (6), pp.14-31, 2005.
- Fleischman, R.B., Naito, C., Restrepo, J., Sause, R., and Ghosh, S.K., "Seismic Design Methodology for Precast Diaphragms Part 1: Design Framework," *PCI Journal*, 50 (5), pp.68-83, 2005.
- Kim, B.-G. and Sause, R., "High Performance Steel Girders with Tubular Flanges," *International Journal of Steel Structures*, 5 (3), pp. 253-265, 2005.

Rojas, P., Garlock, M., Ricles, J., and Sause, R., "Use of Post-Tensioned Friction Damped Connections for Seismic Retrofit of Steel Moment Resisting Frames," *International Journal of Steel Structures*, 5 (3), pp. 265-276, 2005.

Lee, K.-S., Fan, C.-P., Sause, R., and Ricles, J., "Simplified Design Procedure for Frame Buildings with Viscoelastic or Elastomeric Dampers," *Journal of Earthquake Engineering and Structural Dynamics*, 34 (10), pp. 1271-1284, 2005.

Rojas, P., Ricles, J.M., and Sause, R., "Seismic Performance of Post-Tensioned Steel Moment Resisting Frames with Friction Devices," *Journal of Structural Engineering*, 131 (4), pp.529-540, 2005.

Seo, C.-Y., and Sause, R., "Ductility Demands on Self-Centering Systems under Earthquake Loading," *ACI Structural Journal*, 102 (2), pp. 275-285, 2005.

Garlock, M.M., Ricles, J.M., and Sause, R., "Experimental Studies of Full-Scale Post-Tensioned Steel Connections," *Journal of Structural Engineering*, 131 (3), pp. 438-448, 2005.

Varma, A.H., Sause, R., Ricles, J.M., and Li, Q., "Development and Validation of Fiber Models for High Strength Square Concrete Filled Steel Tube (CFT) Beam-Columns," *ACI Structural Journal*, 102 (1), pp.73-84, 2005.

Anami, K., Sause, R., and Abbas, H.H., "Fatigue of Web-Flange Weld of Corrugated Web Girders Part 1: Influence of Web Corrugation Geometry and Flange Geometry on Web-Flange Weld Toe Stresses," *International Journal of Fatigue*, 27, pp. 373-381, 2005.

Anami, K., and Sause, R., "Fatigue of Web-Flange Weld of Corrugated Web Girders Part 2: Analytical Evaluation of Fatigue Strength of Corrugated Web-Flange Weld," *International Journal of Fatigue*, 27, pp. 383-393, 2005.

Zhang, Y., Sause, R., Ricles, J.M., and Naito, C.J., "Modified Predictor-Corrector Numerical Scheme for Real-Time Pseudo Dynamic Test Using State-Space Formulation," *Earthquake Engineering and Structural Dynamics*, 34 (3), pp. 271-288, 2005.

Lee, K.-S., Ricles, J., and Sause, R., "Seismic Design and Evaluation of Steel MRF Retrofit with Elastomeric Dampers," *International Journal of Steel Structures*, 4 (4), pp. 275-288, 2004.

Sause, R., Harries, K.A., Walkup, S.L., Pessiki, S., and Ricles, J., "Flexural Behavior of Concrete Columns Retrofitted with CFRP Jackets," *ACI Structural Journal*, 101(5), pp. 708-716, 2004.

Lee, K.-S., Sause, R., Ricles, J., Ab-Malek, K., and Lu, L.-W., "Nonlinear Rate-Dependent Hysteresis Model for Structural Dampers Made from Ultra High Damping Natural Rubber," *Journal of Rubber Research*, 7 (12), pp. 79-103, 2004.

Perez, F. J., Pessiki, S., and Sause, R., "Lateral Load Behavior of Unbonded Post-Tensioned Precast Walls with Vertical Joints," *PCI Journal*, 49 (2), March/April, pp. 48-65, 2004.

Perez, F. J., Pessiki, S., and Sause, R., "Seismic Design of Unbonded Post-Tensioned Precast Walls with Vertical Joints," *PCI Journal*, 49 (1), January/February, pp. 58-79, 2004.

Varma, A.H., Ricles, J.M., Sause, R., Lu, L.-W., "Seismic Behavior and Design of High Strength Square Concrete-Filled Steel Tube Beam-Columns," *Journal of Structural Engineering*, 130 (2), pp. 169-179, 2004.

Fahnestock, L.A., Sause, R., Ricles, J.M., and Lu, L.-W., "Ductility Demands on Buckling-Restrained Braced Frames under Earthquake Loading," *Journal of Earthquake Engineering and Engineering Vibration*, 2 (2), pp. 255-264, December 2003.

Garlock, M.M., Ricles, J.M., and Sause, R. "Cyclic Load Tests and Analysis of Bolted Top-and-Seat Angle Connections," *Journal of Structural Engineering*, 129 (12), pp. 1615-1625, 2003.

Perez, F. J., Pessiki, S., Sause, R., and Lu L.-W., "Lateral Load Tests of Unbonded Post-Tensioned Precast Concrete Walls," *Large-Scale Structural Testing*, ACI SP-211, pp. 161-182, 2003.

Kurama, Y., Sause, R., Pessiki, S., and Lu, L.-W., "Seismic Response Evaluation of Unbonded Post-Tensioned Precast Walls," *ACI Structural Journal*, 99 (5), pp. 641-651, 2002.

Green, P.S., Sause, R., and Ricles, J.M., "Strength and Ductility of HPS Flexural Members," *Journal of Constructional Steel Research*, 58 (5-8), pp. 907-941, 2002.

Varma, A.H., Ricles, J.M., Sause, R., Lu, L.-W., "Behavior and Modeling of High Strength Square Composite Concrete-Filled Steel Tube Beam-Columns," *Journal of Constructional Steel Research*, 58 (5-8), pp. 725-758, 2002.

Driver, R.G., Abbas, H.H., and Sause, R., "Local Buckling of Grouted and Ungouted Internally Stiffened Double-plate HPS Webs," *Journal of Constructional Steel Research*, 58 (5-8), pp. 881-906, 2002.

Ricles, J.M., Sause, R., Peng, S.-W., and Lu, L.-W., "Experimental Evaluation of Post-Tensioned Steel Connections," *Journal of Structural Engineering*, 128 (7), pp. 850-859, 2002.

Varma, A.H., Ricles, J.M., Sause, R., Lu, L.-W. "Experimental Behavior of High Strength Square CFT Beam-Columns," *Journal of Structural Engineering*, 128 (3), pp. 309-318, 2002.

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Pessiki, S., Harries, K.A., Kestner, J., Sause, R., and Ricles, J.M., "The Axial Behavior of Concrete Confined with Fiber Reinforced Composite Jackets," *Journal of Composites for Construction*, 5 (4), pp. 237-245, 2001.

Sause, R., and Fahnestock, L.A., "Strength and Ductility of HPS-100W I-Girders in Negative Flexure," *Journal of Bridge Engineering*, 6 (5), pp. 316-323, 2001.

Ricles, J.M., Sause, R., Garlock, M.M., and Zhao, C., "Post-Tensioned Seismic Resistant Connections for Steel Frames," *Journal of Structural Engineering*, 127 (2), pp.113-121, 2001.

Azizinamini, A and Sause, R, "Flexural Capacity of Compact and Noncompact High Performance Steel Plate Girders," *Transportation Research Record, Journal of the Transportation Research Board*, No. 1712, pp.147-156, 2000.

Varma, A.H., Ricles, J.M., Sause, R., Hull, B.K., and Lu, L.-W., "An Experimental Evaluation of High Strength Square CFT Columns," *Composite and Hybrid Systems*, ACI SP-196, ACI, pp. 51-86, 2000.

El-Sheikh, M.T., Pessiki, S., Sause, R., and Lu, L.-W., "Moment-Rotation Behavior of Unbonded Post-Tensioned Precast Concrete Beam-Column Connections," *ACI Structural Journal*, 97 (1), pp.122-131, 2000.

Kurama, Y.C., Pessiki, S., Sause, R., and Lu, L.-W., "Seismic Behavior and Design of Unbonded Post-Tensioned Precast Concrete Walls," *PCI Journal*, 44 (3), May/June, pp. 72-89, 1999.

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- Kurama, Y.C., Sause, R., Pessiki, S., and Lu, L.-W., "Lateral Load Behavior and Seismic Design of Unbonded Post-Tensioned Precast Concrete Walls," *ACI Structural Journal*, 96 (4), pp. 622-632, 1999.
- Fleischman, R.B., Sause, R., Pessiki, S., and Rhodes, A.B., "Seismic Behavior of Precast Parking Structure Diaphragms," *PCI Journal*, 43 (1), January/February, pp. 38-53, 1998.
- Lee, C.-H., Sause, R., and Hong, N.K., "Overview of Entity-Based Integrated Design Product and Process Models," *Advances in Engineering Software*, Vol. 29, No. 10, December, pp. 809-823, 1998.
- Ricles, J.M., Sause, R., and Green, P.S., "High-Strength Steel: Implications of Material and Geometric Characteristics on Inelastic Flexural Behavior," *Engineering Structures*, Vol. 20, Nos. 4-6, pp. 323-335, 1998.
- Slaughter, E.S., Sause, R., and Pessiki, S., "Development Framework for Structural Floor Framing Systems to Accommodate Nonstructural Requirements," *Journal of Architectural Engineering*, 3 (3), pp. 109-117, 1997.
- Pessiki, S., van Zyverden, W., Sause, R., and Slaughter, S., "Proposed Concepts for Floor Framing Systems for Precast Concrete Office Buildings," *PCI Journal*, 42 (5), September/October, pp. 66-76, 1997.
- Sause, R., Pessiki, S., Wu, S., and Kurama, Y., "Modeling and Seismic Behavior of Non-Ductile Concrete Frame Structures and Retrofit Implications," *Seismic Rehabilitation of Concrete Structures*, ACI SP-160, ACI, pp. 231-253, 1996.
- Lee, C.-H. and Sause, "Sequence Control for Integrated Structural Design Models," *Journal of Computing in Civil Engineering*, 10 (3), pp. 213-225, 1996.
- Pessiki, S., Prior, R., Sause, R., and Slaughter, S., "Review of Existing Precast Concrete Gravity Load Floor Framing Systems," *PCI Journal*, 40 (2), March/April, pp. 52-68, 1995.
- Pessiki, S., Prior, R., Sause, R., Slaughter, S., and van Zyverden, W., "Assessment of Existing Precast Concrete Gravity Load Floor Framing Systems," *PCI Journal*, 40 (2), March/April, pp. 70-83, 1995.
- Sause, R., Martini, K., and Powell, G.H., "Object-Oriented Approaches for Integrated Engineering Design Systems," *Journal of Computing in Civil Engineering*, 6 (3), pp. 248-265, 1992.
- Sause, R. and Powell, G.H., "A Design Process Model for Computer Integrated Structural Engineering: Design Phases and Tasks," *Engineering With Computers*, 7, pp. 145-160, 1991.
- Sause, R. and Powell, G.H., "A Design Process Model for Computer Integrated Structural Engineering," *Engineering With Computers*, 6, pp. 129-143, 1990.
- Bertero, V.V., Aktan, A.E., Charney, F.A., and Sause, R., "Earthquake Simulator Tests and Associated Experimental, Analytical, and Correlation Studies of One-Fifth Scale Model," *Earthquake Effects on Reinforced Concrete Structures: U.S. - Japan Research*, ACI SP-84, ACI, pp. 375-424, 1985.

Peer-Reviewed Conference Proceedings

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Hong, N. and Sause, R., "Concepts and Notation for Integrated Structural Design Process and Product Models." ATLSS Report No. 94-13, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, August 1994.

De La Torre, M.L., Sause, R., Slaughter, S., and Hendricks, R.H., "A Review and Analysis of Modular Construction Practices," ATLSS Report No. 94-11, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, July 1994.

van Zyverden, W.J., Pessiki, S., Sause, R., and Slaughter, S., "Proposed Concepts for New Floor Framing Systems for Precast Concrete Office Buildings." ATLSS Report No. 94-05, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, March 1994.

Song, J. and Sause, R., "Object-Oriented Structural Analysis Using Substructures." ATLSS Report No. 93-16, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, December 1993.

Prior, R., Pessiki, S.P., Sause, R., and Slaughter, E.S., "Identification and Preliminary Assessment of Existing Precast Concrete Floor Framing Systems." ATLSS Report No. 93-07, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, June 1993.

Madden, J.A. and Sause, R., "Product and Process Models for Computer Integrated Preliminary Structural Design." ATLSS Report No. 92-11, Center for Advanced Technology for Large Structural Systems, Lehigh University, Bethlehem, PA, August 1992.

Bertero, V.V., Aktan, A.E., Charney, F.A., and Sause, R., "U.S. - Japan Cooperative Earthquake Research Program: Earthquake Simulation Studies of 1/5th Scale Model of a 7-story Reinforced Concrete Test Structure," Earthquake Engineering Research Center, Report No. UCB/EERC 84/05, University of California, Berkeley, California, 1984.

Sause, R., and Bertero, V.V., "A Transducer for Measuring the Internal Forces in the Columns of a Frame-Wall Reinforced Concrete Test Structure," Earthquake Engineering Research Center, Report No. UCB/EERC 83/05, University of California, Berkeley, California, 1983.

Invited Presentations

"Steel Tubes in Highway Bridges: Part 1 - Steel Bridge Girders with Tubular Flanges," Summer Meeting of the Design Advisory Group, AISI Steel Market Development Institute, Bridge Task Force Meeting, Chicago, IL, August 8, 2012.

"Steel Tubes in Highway Bridges: Part 2 – Implementation of Tubular Steel Design in Bridges," Summer Meeting of the Design Advisory Group, AISI Steel Market Development Institute, Bridge Task Force Meeting, Chicago, IL, August 8, 2012.

"Innovative Steel Bridge Girders with Tubular Flanges," Keynote Presentation, 6th International Conference on Bridge Management, Safety and Management, Stresa, Lake Maggiore, Italy, July 8-12, 2012.

"Self-Centering Damage-Free Seismic-Resistant Structural Systems," The 4th Kwang-Hua Forum and Opening Symposium of Tongji Shaking Table Array," Tongji University, Shanghai, P.R. China, December 10-12, 2011.

"ATLSS Engineering Research Center," Precast/Prestressed Concrete Institute Annual Convention, Salt Lake City, UT, October 22-26, 2011.

"PCI Reconnaissance of the March 2011 Japan Tohoku Earthquake: Preliminary Findings," Precast/Prestressed Concrete Institute Annual Convention, Salt Lake City, UT, October 22-26, 2011.

"Sustainable Infrastructure: (Emphasizing Resilient Earthquake Performance)," Nanjing Forestry University, Nanjing, P.R. China, October 15, 2011.

"Sustainable Infrastructure: (Emphasizing Resilient Earthquake Performance)," Keynote Presentation, 6th International ICSAELS Conference on Climate Changes and Global Warming, Chongqing University October 11-13, 2011.

"Proposed Revisions to AASHTO Heat Curving Requirements," Summer Meeting of the American Iron and Steel Institute Bridge Task Force and AASHTO T-14 Committee Meeting, Washington, DC, August 3-5, 2011.

"Tubular Flange Girder Demonstration Bridge (2010)," Winter Meeting of the American Iron and Steel Institute Bridge Task Force and AASHTO T-14 Committee Meeting, Orlando, FL, January 19-21, 2011.

"Self-Centering Damage-Free Seismic-Resistant Steel Frame Systems," Department of Civil and Environmental Engineering, Haythornthwaite Lecture, Temple University, Philadelphia, PA, November 5, 2010.

"PennDOT Demonstration Bridge – Concrete Filled Tubular Flange Girders," American Society of Highway Engineers, Delaware Valley, 11th Annual Technical Seminar, Valley Forge, PA, October 28, 2010.

"Self-Centering Damage-Free Seismic-Resistant Steel Frame Systems," Structural Engineering Research Institute, Tongji University, Shanghai, P.R. China, October 11, 2010.

"High Performance Steel Bridge Girders," Keynote Presentation, Workshop on High Performance Steel Bridges and Smart Bridge Monitoring, Chang'An University, Xi'an, P.R. China, October 13, 2010.

"Self-Centering Damage-Free Seismic-Resistant Steel Frame Systems," Keynote Presentation, 7th International Conference on Urban Earthquake Engineering (7CUEE) & 5th International Conference on Earthquake Engineering (5ICEE), Tokyo Institute of Technology, Tokyo, Japan, March 3-5, 2010.

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"Update on Research on Tubular Flange Girders for Curved Bridges," Winter Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, January 27-28, 2010.

"Validating Performance of Self-Centering Steel Frame Systems Using Hybrid Simulations," Department of Civil Engineering and Geological Sciences, University of Notre Dame, September 23, 2009.

"Update on Curved Girders with Tubular Flanges," Summer Meeting of the American Iron and Steel Institute Bridge Task Force, Baltimore, MD, August 12-14, 2009.

"Damage-Free Seismic-Resistant Self-Centering Steel Concentrically-Braced Frames," Keynote Presentation, STESSA 2009, 6th International Conference on Behavior of Steel Structures in Seismic Areas, Philadelphia, PA, August 16-20, 2009.

"Self-Centering Steel Frame Systems," NEES Annual Meeting, Honolulu, HI, June 23-25, 2009.

"Finite Element Analysis of Curved Hollow Tubular Flange Girders," Summer Meeting of the American Iron and Steel Institute Bridge Task Force, Washington DC, August 6-8, 2008.

"Current Research on Tubular Flange Girders for Curved Bridges," Winter Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, February 2008.

"Innovative High Performance Steel Structures," Department of Civil Engineering, Tsinghua University, Beijing, P.R. China, October 2007.

"Evaluating and Improving Large Structural System Performance: Research at the ATLSS Center," Keynote Presentation, International Conference on Health Monitoring of Structure, Material and Environment (HMSME 2007), Nanjing, P.R. China, October 2007.

"Advancing Structural System Performance at ATLSS Center," Symposium on Sustainability, Accountability and Eco-Affordability of Large Structures (SAELS), Zhengzhou, P.R. China, October 2007.

"Seismic Behavior and Design of Post-Tensioned Precast Concrete Walls," Precast/Prestressed Concrete Institute Annual Convention, Grapevine, TX, October 2006.

"Overview of Self-Centering EQ-Resistant Steel Frame Research," US-Taiwan Workshop on Self-Centering Structural Systems 2006, Taipei, Taiwan, October 2006.

"Vulnerability of Physical Infrastructure to Natural Hazards," Presentation to Pennsylvania House of Representatives Committee on Veterans Affairs and Emergency Preparedness, December 2005.

"Structural Systems Engineering at Lehigh University," Fritz Laboratory 50th Commemoration and Civil and Environmental Engineering Future, October 2005.

"Proposal to Collaborate on Shake Table Tests of Self-Centering Steel Frame Systems," 4th Planning Meeting for NEES/E-Defense Collaboration, E-Defense, Miki, Japan, August, 2005.

"Seismic Behavior and Design of Precast Concrete Walls," Precast/Prestressed Concrete Institute Annual Convention, Palm Springs, CA, October, 2005.

"Self-Centering Seismic-Resistant Steel Frame Systems: Overview of Past and Current Research," US-Taiwan Workshop on Self-Centering Structural Systems, Taipei, Taiwan, June, 2005.

"Past Research at Lehigh University on Self-Centering Precast Concrete Walls," US-Taiwan Workshop on Self-Centering Structural Systems, Taipei, Taiwan, June, 2005.

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"Self-Centering Earthquake-Resistant Structural Systems," KEERC International Seminar on Innovative Concepts and Technologies in Seismic Analysis and Design of Building Structures, Korea Earthquake Engineering Research Center, Seoul, Korea, February, 2005.

"Update on Lehigh HPS Bridge Girder Research," July Meeting of the American Iron and Steel Institute Bridge Task Force, Baltimore, MD, July 2004.

"HPS Bridge Girders," February Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, February 2004.

"Lateral Load Tests of Unbonded Post-Tensioned Precast Concrete Walls," Precast/Prestressed Concrete Institute Annual Convention, Orlando, FL, October 2003.

"Ductility Demands for Self-Centering Post-Tensioned Precast Seismic Systems," Precast/Prestressed Concrete Institute Annual Convention, Orlando, FL, October 2003.

"Corrugated Webs for Steel Bridge Girders," August Meeting of the American Iron and Steel Institute Bridge Task Force, Austin, TX, August 2003.

"Corrugated Web Bridge Girders," ASCE SEI Technical Committee on Steel Bridges Meeting, 2003 Structures Congress, ASCE, Seattle, WA, June 2003.

"High Performance Steel Bridge Girders: Materials, Fabrication, Design, and Innovation," Federal Highway Administration, Turner-Fairbank Highway Research Laboratory, May 2003.

"ATLSS and High Performance Steel for Bridges," John W. Fisher Tribute and Symposium, Lehigh University, Bethlehem, PA, August 2002.

"Tests of FRP Composite Midship Hull-Deck Sections," ONR 6.1/6.2 Review, US Navy, Carderock, MD, April 2002.

"Innovative High Performance Steel Bridge Girders for Highway Bridges," February Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, February 2002.

"Experimental Evaluation of Lateral Load Response of Unbonded Post-Tensioned Precast Walls," Precast/Prestressed Concrete Institute Annual Convention, Reno, NV, October 2001.

"Pennsylvania DOT's Corrugated Web Steel Girder Research Program," 34th Mid-Atlantic Quality Assurance Workshop, Washington, DC, February 2001.

"Girders with Corrugated Webs, Girders with Tubular Flanges," February Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, February 2001.

"Evaluation of Steel Bridge Girders with Corrugated Webs," Session on Innovative Steel Bridge Designs, 80th Annual Meeting, Transportation Research Board, Washington, DC, January 2001.

"Tests of FRP Composite and Hybrid Ship Hull and Deck Structures," Quarterly Meeting, Non-Magnetic Stainless Steel Double Hull Ship Research Program, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD, January 2001.

"High Performance Steel Bridge Systems," PITA Symposium 2000, Harrisburg, PA, October 2000.

"Lateral Load Behavior of Unbonded Post-Tensioned Walls with Ductile Vertical Joint Connectors," Precast/Prestressed Concrete Institute Annual Convention, Orlando, FL, September 2000.

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"High Performance Steel Highway Bridges," Pennsylvania Bridge Structures Forum, State College, PA, August 2000.

"Innovative High Performance Steel Bridge Systems," February Meeting of the American Iron and Steel Institute Bridge Task Force, Orlando, FL, February 2000.

"High Performance Steel Bridge Initiative of Pennsylvania," Symposium on Recent Advances in Steel Bridge Design and Construction with Emphasis on High Performance Steel, Kansas City, MO, November 1999.

"Seismic Behavior of Unbonded Post-Tensioned Walls with Ductile Vertical Joint Connectors," Precast/Prestressed Concrete Institute Annual Convention, Palm Springs, CA, October 1999.

"Analytical Predictions of Behavior of the PRESSS Phase III Five-Story Precast Building," Precast/Prestressed Concrete Institute Annual Convention, Palm Springs, CA, October 1999.

"Flexural Strength and Ductility of HPS-100W Steel I-Girders in Negative Flexure," 14th U.S.-Japan Bridge Engineering Workshop, Pittsburgh, PA, November 1998.

"Seismic Behavior of Unbonded Post-Tensioned Precast Concrete Frames," Precast/Prestressed Concrete Institute Annual Convention, Atlanta, GA, October 1998.

"Seismic Behavior of Non-Ductile Reinforced Concrete Frames and Retrofit with Fiber Reinforced Polymer Jackets," Beijing Polytechnic University, Beijing, Peoples Republic of China, August 1998.

"Seismic Retrofit of Non-Ductile Reinforced Concrete Frames Using Viscoelastic Dampers," Tsinghua University, Beijing, Peoples Republic of China, August 1998.

"High Performance Steel for Infrastructure Applications," Harbin University of Civil Engineering and Architecture, Harbin, Peoples Republic of China, August 1998.

"Unbonded Post-Tensioned Precast Concrete Structural Systems for Seismic Zones," Harbin University of Civil Engineering and Architecture, Harbin, Peoples Republic of China, August 1998.

"Seismic Behavior of Non-Ductile Reinforced Concrete Frames and Retrofit with Fiber Reinforced Polymer Jackets," Harbin University of Civil Engineering and Architecture, Harbin, Peoples Republic of China, August 1998.

"Seismic Analysis and Behavior of Precast Concrete Walls," Precast/Prestressed Concrete Institute Annual Convention, New Orleans, LA, October 1997.

"Application of High-Performance Steel in Highway Bridges," Nippon Steel Corporation, Technical Development Bureau, Futtsu, Japan, August 1997.

"Application of High-Performance Steel in Bridges," 12th U.S.-Japan Bridge Engineering Workshop, Buffalo, NY, October 1996.

"Influence of Diaphragm Behavior on Performance of Precast Parking Structures During Northridge Earthquake," Precast/Prestressed Concrete Institute Annual Convention, Orlando, FL, October 1996.

"Steel Structure Research at the ATLSS Center," Tokyo Institute of Technology, Tokyo, Japan, April 1996.

"Seismic Response of Precast Structural Systems," 5th U.S. PRESSS Coordination Meeting, University of California, San Diego, La Jolla, CA, May 1995.

"Information Technology Needs for Condition Assessment," North American Workshop on Instrumentation and Vibration Testing of Highway Bridges, University of Cincinnati, Cincinnati, OH, July 1995.

"Influence of Diaphragm Behavior on Seismic Performance of Precast Parking Structures," Precast/Prestressed Concrete Institute Annual Convention, Reno, NV, October 1995.

"ATLSS Developments in Innovative Structural Systems," ATLSS 1994 Symposium on Technology for Large Structures: Advances and Trends, ATLSS Engineering Research Center, Bethlehem, PA, May 1994.

"Hypermedia Bridge Fatigue Investigator," (presented for J.L. Wilson) Bridge Management, Inspection, and Rehabilitation Subcommittee Meeting, Structures Congress '95, ASCE, Atlanta, GA, April 1994.

"Performance of Engineered Structures During the Northridge Earthquake of January 17, 1994," Lehigh Valley Section, ASCE, Allentown, PA, March 1994.

"Worldwide Availability and Use of High Strength Steel in Highway Bridges," Workshop on Innovative Bridge Designs Using High Performance Steel, Modjeski and Masters, Inc., Federal Highway Administration (FHWA), American Iron and Steel Institute (AISI), Alexandria, VA, February 1994.

"Development and Evaluation of New Floor Framing Systems," ATLSS/PRESSSS Ad Hoc Committee Meeting, Prestressed/Precast Concrete Institute (PCI) Annual Convention, Nashville, TN, October 1992.

"Design Models for Advanced Computer-Aided Structural Engineering Design," Department of Civil and Environmental Engineering Seminar, Polytechnic University, New York, NY, November 1991.

"Evaluation of Retrofit Strategies for Non-Ductile Concrete Frame Structures," NSF Repair and Rehabilitation Research Program Meeting, Austin, TX, November 1991.

"Studies in Computer Integration of Structural Design," Department of Civil Engineering Seminar, Lehigh University, Bethlehem, PA, November 1988.

"Studies in Computer Integration of Structural Design," Department of Civil Engineering Seminar, Rensselaer Polytechnic Institute, Troy, NY, October 1988.

Conference Presentations

(presentations made by R. Sause)

"Observed Performance of Concrete Structures during March 2011 Tohoku Earthquake," 2012 Structures Congress, Chicago, IL, March 29-31, 2012.

"Evaluation of Performance-Based Design Methodology for Steel Self-Centering Braced Frame," STESSA 2012, Proceedings of the 7th International Conference on Behavior of Steel Structures in Seismic Areas, Santiago, Chile, January 8-11, 2012.

"Collapse Performance of Steel Self-Centering Braced Frame Systems," STESSA 2012, Proceedings of the 7th International Conference on Behavior of Steel Structures in Seismic Areas, Santiago, Chile, January 8-11, 2012.

"Advanced Compressed Elastomer Dampers for Earthquake Hazard Reduction to Steel Frames," STESSA 2012, Proceedings of the 7th International Conference on Behavior of Steel Structures in Seismic Areas, Santiago, Chile, January 8-11, 2012.

"Tubular Flange Girder Systems," Transportation Research Board 90th Annual Meeting, Washington, DC, January 23-27, 2011.

"Seismic Performance of a Self-Centering Concentrically-Braced Frame," 9th US National and 10th Canadian Conference on Earthquake Engineering, Toronto, Canada, July 25-29, 2010.

"Seismic Design and Performance of Steel MRFs with Elastomeric Dampers," 9th US National and 10th Canadian Conference on Earthquake Engineering, Toronto, Canada, July 25-29, 2010.

"Large-Scale Experimental Studies of Damage-Free Self-Centering Concentrically-Braced Frame under Seismic Loading," 2010 Structures Congress and North American Steel Construction Conference, Orlando, FL, May 12-15, 2010.

"Design of Steel Buildings for Earthquake Conditions Using Next-Generation Elastomeric Dampers," 2010 Structures Congress and North American Steel Construction Conference, Orlando, FL, May 12-15, 2010.

"Validating Performance of Self-Centering Steel Frame Systems Using Hybrid Simulation," 3rd International Conference on Advances in Experimental Structural Engineering, San Francisco, CA, October 15-16, 2009.

"Performance-Based Design of Self-Centering Steel Frame Systems," ACES Workshop: Advances in Performance-Based Earthquake Engineering, Corfu, Greece, July 4-7, 2009.

"Finite-Element Analysis of Curved Hollow, Tubular Flange Girders," 25th Annual International Bridge Conference, Pittsburgh, PA, June 2008.

"Measurements in Traffic Signal Structure using 3D Image Correlation," International Conference on Health Monitoring of Structure, Material and Environment (HMSME 2007), Nanjing, China, October 2007.

"Design of Self-Centering Steel Concentrically-Braced Frames," 4th International Conference on Earthquake Engineering, Taipei, Taiwan, October 2006.

"Seismic Design of Steel MRFs with Elastomeric Dampers," STESSA 2006, 5th International Conference on Behavior of Steel Structures in Seismic Areas, Yokohama, Japan, August 2006.

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"Self-Centering Seismic-Resistant Steel Concentrically-Braced Frames," STESSA 2006, 5th International Conference on Behavior of Steel Structures in Seismic Areas, Yokohama, Japan, August 2006.

"Unconventional High Performance Steel Girder Systems," IABMAS'06 – Third International Conference on Bridge Maintenance, Safety, and Management, Porto, Portugal, July, 2006.

"Self-Centering Steel Frame Systems," 4th NEES Annual Meeting, Washington DC, June 2006.

"Self-Centering Seismic-Resistant Steel Concentrically-Braced Frames," Eighth U.S. National Conference on Earthquake Engineering, San Francisco, April 2006.

"Ductility Demands for Self-Centering Precast Prestressed Earthquake Resistant Structural Systems," ACI Spring 2005 Convention, American Concrete Institute, New York, NY, April 2005.

"Analytical and Experimental Studies on Buckling Restrained Braced Composite Frames," The International Workshop on Steel and Concrete Composite Construction (IWSCCC-2003), Taipei, Taiwan, October 2003.

"Seismic Behavior of Steel MRFs with UHNR Structural Dampers," 4th International Conference on Behavior of Steel Structures in Seismic Areas – STESSA 2003, Naples, Italy, June 2003.

"Analytical Studies of Steel MRFs with CFT Columns under Earthquake Loading Conditions," 4th International Conference on Behavior of Steel Structures in Seismic Areas – STESSA 2003, Naples, Italy, June 2003.

"Self-Centering Lateral Force Resisting Structural Systems," 2003 Structures Congress, Seattle WA, May, 2003.

"Steel Bridge Girders with Corrugated Webs," 2002 FHWA Steel Bridge Conference for the Western States, Salt Lake City, UT, 2002.

"Innovative Bridge Girder Concepts for HPS," 2002 Structures Congress, Denver, CO, 2002.

"Analytical Studies of Concrete Filled Tube Composite Column MRFs under Earthquake Loading Conditions," 2002 Structures Congress, Denver, CO, 2002.

"Damping Materials and Systems for Earthquake Resistant Buildings," Conference on Building for the 21st Century: Technology, Livability, Productivity, London, UK, December 2001.

"Innovative High Performance Steel Girders for Highway Bridges," International Conference on High Performance Materials in Bridges and Buildings, Kona, HI, August 2001.

"Innovative High Performance Steel Bridge Girders," 2001 Structures Congress, Washington, DC, 2001.

"Seismic Behavior of Unbonded Post-Tensioned Walls," American Concrete Institute Fall Convention, Toronto, Canada, October 2000.

"Performance of High Strength CFT Columns Under Seismic Loading," 3rd International Specialty Conference on Behavior of Steel Structures in Seismic Areas – STESSA 2000, Montreal, Canada, August 2000.

"Experimental Studies on Post-Tensioned Seismic Resistant Connections for Steel Frames," 3rd International Specialty Conference on Behavior of Steel Structures in Seismic Areas – STESSA 2000, Montreal, Canada, August 2000.

"Cost Effective Bridge Design Using High Performance Steels," International Symposium on Steel for Fabricated Structures, ASM International, Cincinnati, OH, November 1999.

"Seismic Retrofit of Non-Ductile Reinforced Concrete Building Columns Using FRPC Jackets," Sixth U.S. National Conference on Earthquake Engineering, Seattle, WA, June 1998.

"Response of High Performance Steel Flexural Members to Inelastic Cyclic Loading," STESSA '97 Conference, Kyoto, Japan, August 1997.

"Overview of Entity-Based Integrated Design Product and Process Models," International Conference on Information Technology in Civil and Structural Engineering Design, University of Strathclyde, Glasgow, Scotland, August 1996.

"Barriers to the Use of High Performance Steel in I-Girder Highway Bridges," Structures Congress XIV, ASCE, Chicago, IL, April 1996.

"Application of High Performance Steel in Highway Bridges," International Symposium on High-Performance Steels for Structural Applications, ASM International, Cleveland, OH, October 1995.

"Stress-Strain Properties of High-Performance Steel and the Implications for Civil-Structure Design," International Symposium on High Performance Steels for Structural Applications, ASM International, Cleveland, OH, October 1995.

"Simplified Seismic Response Analysis of Viscoelastic-Damped Frame Structures," Fifth U.S. National Conference on Earthquake Engineering, EERI, Chicago, IL, July 1994.

"Seismic Behavior and Retrofit Implications for Two Non-Ductile Concrete Frame Structures," Fifth U.S. National Conference on Earthquake Engineering, EERI, Chicago, IL, July 1994.

"Object-Oriented Structural Analysis with Substructures," First Computing in Civil Engineering Congress, ASCE, Washington, DC, June 1994.

"Toward Integrated Models for Structural Design," First Computing in Civil Engineering Congress, ASCE, Washington, DC, June 1994.

"Seismic Behavior of Non-Ductile Concrete Frame Structures," Structures Congress '94, ASCE, Atlanta, GA, April 1994.

"Bridge Evaluation Using a Hybrid Information System," (presented for J.L. Wilson) Structures Congress '94, ASCE, Atlanta, GA, April 1994.

"Toward Integrated Structural Engineering Design Models," Fifth International Conference on Civil and Structural Engineering Computing, Edinburgh, Scotland, August 1993.

"A Design Product Model for Computer Integrated Structural Engineering," Eighth Conference on Computing in Civil Engineering, ASCE, Dallas, TX, June 1992.

"Environment for Educational Use of Professional Engineering Software," Eighth Conference on Computing in Civil Engineering, ASCE, Dallas, TX, June 1992.

"Towards Management of Design Alternatives in Object Oriented Databases," Seventh Conference on Computing in Civil Engineering, ASCE, Washington, DC, May 1991.

"A Model for Knowledge-Based Design," Sixth Conference on Computing in Civil Engineering, ASCE, Atlanta, GA, September 1989.

January 2013

Ph.D. Students Completed

Y.-C. Lin (2012) Seismic Performance of a Steel Self-Centering Moment Resisting Frame System with Beam Web Friction Devices, Co-Advised.

Y. Chae (2010) Seismic Hazard Mitigation of Building Structures using Magneto-Rheological Dampers, Co-Advised.

D. Roke (2010) Design, Analysis, and Experimental Behavior of Self-Centering Seismic-Resistant Steel Braced Frames, Co-Advised.

J. Dong (2009) Analytical Study of Horizontally Curved Hollow Tubular Flange Girders

Z. Fan (2007) Behavior of Horizontally Curved Steel Tubular-Flange Bridge Girders.

D. Yu (2006) Lateral-Torsional Buckling of Steel I-Girders with Corrugated Webs.

L. Fahnestock (2006) Seismic Behavior, Analysis, and Design of Frames with Ductile Braces, Co-Advised.

R. Herrera (2005) Seismic Behavior of Concrete Filled Tube Column-Wide Flange Beam Frames, Co-Advised.

C.-Y. Seo (2005) Nonlinear Seismic Response Spectra for Various Site Conditions.

B.-G. Kim (2005) Design and Behavior of High Performance Steel Bridge Girders with Tubular Flanges.

F. Perez (2004) Experimental and Analytical Lateral Load Response of Unbonded Post-Tensioned Precast Concrete Walls, Co-Advised.

E. Salem (2004) Flexural Strength and Ductility of Bridge Girders Fabricated from HPS-100W Steel.

K.-S. Lee (2003) Seismic Behavior of Structures with Dampers Made from Ultra High Damping Natural Rubber, Co-Advised.

H. Abbas (2003) Analysis and Design of Corrugated Web I-Girders for Bridges Using High Performance Steel.

M. Garlock (2003) Design, Analysis, and Experimental Behavior of Seismic Resistant Post-Tensioned Steel Moment Resisting Frames, Co-Advised.

B. Oh (2003) A Plasticity Model for Confined Concrete under Uniaxial Loading.

A. Varma (2000) Analysis, Behavior, and Design of Frames with CFT Columns, Co-Advised.

P. Green (2000), Inelastic Behavior of High Performance Steel Members and Frames, Co-Advised.

C.-P. Fan (1998) Seismic Retrofit of Non-Ductile Concrete Frames with Viscoelastic Dampers.

Y. Kurama (1997) Seismic Analysis, Behavior, and Design of Unbonded Post-Tensioned Precast Concrete Walls, Co-Advised.

M. El Sheikh (1997) Seismic Analysis, Behavior, and Design of Unbonded Post-Tensioned Precast Concrete Frames, Co-Advised.

C.-H. Lee (1997) Integrated Design Product and Process Model for Building Frame Structures.

S. Wu (1995) Seismic Performance and Retrofit of Non-Ductile Concrete Frames, Co-Advised.

N. Hong (1994) Entity-Based Integrated Product and Process Models for Computer-Aided Structural Design.

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