

## Hussam N. Mahmoud

Assistant Professor and Director, Structural Engineering Laboratory  
Department of Civil and Environmental Engineering  
School of Biomedical Engineering  
Colorado State University

1372 Campus Delivery, Fort Collins, CO 80523-1372

Tel: 970-491-6605, Fax: 970-491-7727, Email: [hussam.mahmoud@colostate.edu](mailto:hussam.mahmoud@colostate.edu)

### Education

University of Minnesota	Civil Engineering	B.S. & 2001
University of Minnesota	Civil Engineering	M.S. & 2003
University of Illinois at Urbana Champaign	Civil Engineering	Ph.D. & 2011

### Professional Experience

2011 – present, Colorado State University, Assistant Professor  
2014 – present, Air Force Institute of Technology (AFIT Lab), Summer Faculty  
2008 – 2011, University of Illinois at Urbana Champaign, Graduate Research Assistant  
2006 – 2008, University of Illinois at Urbana Champaign, NEES Operations Manager  
2005 – 2006, Lehigh University, Research Scientist III  
2004 – 2005, Lehigh University, Research Scientist II  
2003 – 2004, Lehigh University, Research Scientist I  
2001 – 2003, University of Minnesota, Graduate Research Assistant

### Products

Five products most closely related to the proposed project

1. Como, A. and Mahmoud, H., "Numerical Evaluation of Tsunami Debris Impact Loading on Wooden Structural Walls." *Engineering Structures* 56: 1249–1261, 2013.
2. Mahmoud, H. and Riveros, G., "Fatigue Reliability of a Single Stiffened Ship Hull Panel", *Engineering Structures*, Vol. 66, 89-99, 2014.
3. Mahmoud, H. N., Elnashai, A. S., Spencer, B. F., Kwon, O. S., Bennier, D. J., "Hybrid Simulation For Earthquake Response of Semi-rigid Steel Frames", *ASCE Journal of Structural Engineering*, *ASCE Journal of Structural Engineering*, Vol. 139, Special Issue: NEES 1: Advances in Earthquake Engineering, 1134-1148, 2013.
4. Do, T. Q, van de Lindt, J. W., Mahmoud, H. N., "Fatigue Life Fragilities and Performance-Based Design of Wind Turbine Tower Base Connections", *ASCE Journal of Structural Engineering*, doi: 10.1061/(ASCE)ST.1943-541X.0001150, 2014.
5. Memari, M. Mahmoud, H., "Performance of Steel Moment Resisting Frames with RBS Connections under Fire Loading", *Engineering Structures*, Vol. 75, 126-138, 2014.

Five other additional products

1. Mahmoud, H. N., Wagoner Johnson, A., McFarlin, B., Chien, E., Poellmann, M., "System-Level Biomechanical Approach for the Evaluation of Term and Preterm Pregnancy Maintenance", *Journal of Biomechanical Engineering*, *Biomechanical Engineering-Year in Review*, 135(2):021009, 2013.
2. Hesse A. A., Atadero R. A., and Mahmoud, H. N. (2012) "Hoan Bridge Collapse As a Failure Case Study for Engineering Students", *ASCE Journal of Performance of Constructed Facilities*. doi:10.1061/(ASCE)CF.1943-5509.0000403.
3. Aksolayar, N. D., Elnashai, A. S., Mahmoud, H. N. (2012) "Seismic Performance of Semi-Rigid Moment Resisting Frames under Far and Near Field Records", *ASCE Journal of Structural Engineering*, Vol. 138, No. 157.
4. Mahmoud, H. N., Connor, R. J., and Fisher, J. W. , Finite Element Investigation of the Fracture Potential of Highly Constrained Details in Steel Plate Members, *Journal of Computer-Aided Civil and Infrastructure Engineering*, 20(5), 2005.
5. Dexter, R. J., Connor, R. J., and Mahmoud, H. N. , Steel Bridges with Fracture-critical Elements, *Transportation Research Record: Journal of the Transportation Research Board*, *Transportation Research Board of the National Academies*, Washington, D.C., 2005.

## **Synergistic Activities**

**Research Tools:** Major revisions to the hybrid simulation platform UI-SIMCOR (open source) to improve the interfacing of the finite element software ABAQUS with an experimental module in hybrid simulations.

**University Service:** Current ASCE academic advisor at the Civil and Environmental Engineering Department at Colorado State University.

**Professional Memberships:** Member of ASCE, 2003 – present; Chair of the ASCE Committee on Fatigue and Fracture, 2004 – present; Member of the ASCE Committee on Steel Bridges, 2006 – 2009; Member of the ASCE Committee on Methods of Monitoring and Evaluating Structural Performance, 2006 – 2009; Member of the ASCE Subcommittee on Experimental Methods in Earthquake Engineering, 2012 – present; Member of the TRB Committee on General Structures AFF10, 2006 – 2009; Member of the TRB Committee on Fabrication & Inspection of Metal Structures AFH70, 2013 – present; Member of the 1st International Conference on Fatigue & Fracture in the Infrastructure (2006) Organizing Committee.

**Field Investigations:** Investigated the post-earthquake damage of the 2008 Sichuan earthquake, China (Mw 7.9) as part of the Mid-America Earthquake Center reconnaissance mission. In addition, Dr. Mahmoud conducted field investigation the various steel bridges around the US.

**Journal Review:** ASCE Journal of Structural Engineering, 2011– present; International Journal of Fatigue, 2004 – present; ASCE Journal of Bridge Engineering, 2008 – present; Journal of Earthquake Engineering, 2007 – present; Journal of Applied Mathematics, 2013 – present; Journal of Earthquake Engineering and Structural Dynamics, 2013 – present; Engineering Structures, 2013 – present

**Contributions to the Organization of Professional Conferences and Workshops:** Session chair at the 2013 Structures congress: Application of Experimental Techniques for System-level Seismic Evaluation of Structures, Pittsburgh, 2013; Session Chair at the STESSA 2009 Conference: Behavior of Steel Structures in Seismic Areas, Philadelphia, PA, 2009; Session chair at the ASCE Structures Congress: NDE of Concrete Girders, Long Beach, CA, 2007; Session chair at the 1st International Conference on Fatigue and Fracture in the Infrastructure, Philadelphia, PA, 2006; Support in organizing the 2009 Asian-Pacific Network of Centers for Earthquake Engineering Research (ANCER), 2009; Participant at the US-Vietnam Workshop on Multiple Natural Hazards: Assessment and Mitigation under the Impact of Climate, Hanoi, Vietnam, 2013; Organized and chaired workshop on “Fatigue and Fracture Assessment and Repair of Steel Bridges”, General Authority For Roads, Bridges and Land Transport, Cairo, Egypt, December 2013.

## **Collaborators & Other Affiliations**

**Collaborators:** Rebecca Atadero, Suren Chen, Colorado State University; Robert Connor, Purdue Univ.; Amr Elnashai, Univ. of Illinois; John Fisher, Lehigh Univ.; Jerome Hajjar, Northeastern Univ.; Daniel Kuchma, Univ. of Illinois, Herman Nied, Lehigh U; Billie Spencer, Univ. of Illinois; John van de Lindt; Colorado State University; Ben Yen; Lehigh Univ.; Amy Wagoner Johnson, Barbra McFarlin, Univ. of Illinois; Edward Chien, Brown Univ.; Michael Poellmann, Univ. of Illinois; Riveros, Guillermo, US Army Corps of Engineers.

**Graduate and Postdoctoral Advisors:** Robert Dexter (deceased), University of Minnesota; Amr Elnashai, University of Illinois.

## **Thesis Advisor and Postgraduate-Scholar Sponsor:**

**Ph.D. Sponsor (chair unless indicated otherwise) - Current (5 total):** Akshat Chulahwat, Anisa Como, Assal Hussein, Mehrdad Memari, Huajie Wen; Colorado State University.

**M.S. Thesis (chair unless indicated otherwise) - Current (7 total):** Qin Chao, Chaitanya Dwadasi, Eltigani Hamad, Santiago Lopez, Stephanie Pilkington, Karly Rager, Anuj Valsangkar; Colorado State University.

**M.S. Thesis (chair unless indicated otherwise) - Completed (8 total):** Akshat Chulahwat, Guo Chen, Travis Engle, Paula Miller, Vanessa Smith, Tyler Sobiek (co-chair), Collin Turbert, Thomas Wilson (co-chair); Colorado State University.

**Visiting Scholar – Current (2 total):** Dr. Qiuping Wang, (Northeast Agricultural University); Dr. Lin Chen (Guangzhou University).