

## CURRICULUM VITAE

### **Elaina J. Sutley, Ph.D.**

Assistant Professor

Department of Civil, Architectural, and Environmental Engineering

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### **Educational Preparation**

Ph.D., Civil Engineering, Colorado State University, May, 2015.

M.S., Civil Engineering, University of Alabama, December, 2011.

B.S., Civil Engineering, University of Alabama, May, 2010.

### **Appointments**

- Assistant Professor, University of Kansas (August 2015 – Present)
- Post-Doctoral Researcher, Center for Risk-Based Community Resilience Planning (May 2015 – July 2015)
- Lecturer, Colorado State University (January 2015 – May 2015)
- Graduate Research Assistant, Colorado State University (August 2012 – May 2015)
- Graduate Research Assistant, University of Alabama (August 2011 – July 2012)
- Graduate Teaching Assistant, University of Alabama (August 2010 – July 2011)

### **Journal Publications**

1. **Sutley, E.J.**, J.W. van de Lindt, and L. Peek, (2017). “Multi-Hazard Analysis: An Integrated Engineering and Social Science Approach.” *Journal of Structural Engineering* Special Issue on Recent Advances in Assessment and Mitigation of Multiple Hazards for Structures and Infrastructures, Accepted for Publication on March 16, 2017.
2. Boadi-Danquah, E., B. Robertson, M. Fadden, **E.J. Sutley**, and J. Colistra, (2017). “Lightweight Modular Steel Floor System for Rapidly Constructible and Reconfigurable Buildings.” *International Journal of Computational Methods and Experimental Measurements*, 5(4): 562-573.
3. **Sutley, E.J.**, J.W. van de Lindt, and L. Peek, (2016). “Community-Level Framework for Seismic Resiliency I: Coupling Socioeconomic Characteristics and Engineering Building Systems.” *Natural Hazards Review*, 18(3), 04016014-1.
4. **Sutley, E.J.**, J.W. van de Lindt, and L. Peek, (2016). “Community-Level Framework for Seismic Resiliency II: Multi-Objective Optimization and Illustrative Examples.” *Natural Hazards Review*, 18(3), 04016015-1.
5. **Sutley, E.J.** and J.W. van de Lindt, (2016). “Evolution of Seismic Risk for Woodframe Buildings.” *Journal of Architectural Engineering*, 22(3), DOI 10.1061/(ASCE)AE.1943-5568.0000212.

6. **Jennings<sup>1</sup>, E.**, Ziaei, W. Pang, J.W. van de Lindt, X. Shao, P. Bahmani, (2015). “Full-Scale Experimental Investigation of Second-Story Collapse Behavior in an Over-Retrofitted First Story of a Woodframe Building.” *Journal of Performance of Constructed Facilities*, 30(2), 04015004.
7. **Jennings<sup>1</sup>, E.**, J.W. van de Lindt, E. Ziaei, P. Bahmani, S. Park, X. Shao, W. Pang, D. Rammer, G. Mochizuki, and M. Gershfeld, (2015). “Full-Scale Experimental Verification of Soft-Story-Only Retrofits of Woodframe Buildings with Hybrid Testing.” *Journal of Earthquake Engineering*, 19(3), pps. 410-430.
8. **Jennings<sup>1</sup>, E.**, J.W. van de Lindt, E. Ziaei, G. Mochizuki, W. Pang, and X. Shao, (2014). “Retrofit of a Soft-Story Woodframe Building using SMA Devices with Full-Scale Hybrid Test Verification.” *Engineering Structures*, 80, pps. 469-485.
9. **Jennings<sup>1</sup>, E.** and J.W. van de Lindt, (2013). “Numerical Retrofit Study of Light-Frame Wood Buildings Using Shape Memory Alloy Devices as Seismic Response Modification Devices.” *Journal of Structural Engineering*, 140(7), pps. 469-485.
10. Pang, W., X. Shao, J. van de Lindt, E. Ziaei, **E. Jennings<sup>1</sup>**, (2013). “Hybrid Testing of a Soft-Story Light-frame Wood Building with Seismic Retrofits.” *Wood Design Focus: A Journal of Contemporary Wood Engineering*, 23(4).

### Conference Proceedings

1. Lester, H., and **Sutley, E.J.** (2017). “Apropos Resilient System Design.” *2017 Institute of Industrial and Systems Engineers Annual Conference and Expo*, Pittsburgh, PA, May 20-23, 2017.
2. Robertson, B., Boadi-Danquah, E., Fadden, M., **Sutley, E.J.**, and Colistra, J. (2017). “Assessment of Walking Vibrations in a Lightweight Two-Way Steel Floor System,” *Architectural Engineering Institute Conference*, Oklahoma City, OK, April 11-13, 2017.
3. **Sutley, E.J.**, J.W. van de Lindt, and L. Peek (2017). “Improving Community Seismic Disaster Resilience through Pre-Event Planning with Engineering, Socioeconomic and Demographic Considerations.” *16<sup>th</sup> World Conference on Earthquake Engineering*, Santiago, Chile, January 9-13, 2017.
4. **Sutley, E.J.**, and Hamideh, S. (2016). “A Community Model for Residential Sector Recovery: An Integrated Engineering and Social Science Perspective.” *1st International Workshop on Resilience*, September 20-22, 2016, Torino, Italy.
5. Boadi-Danquah, E., Robertson, B., Fadden, M., **Sutley, E. J.**, and Colistra, J. (2016). “Lightweight Modular Steel Floor System for Rapidly Constructible and Reconfigurable Buildings.” *5<sup>th</sup> International Conference on Mobile, Adaptable and Rapidly Assembled Structures*, Siena, Italy, September 21-23, 2016.

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<sup>1</sup> Former (maiden) last name of Elaina J. Sutley

6. **Sutley, E.J.**, Fadden, M., and Li, J. (2016). “A Vision for Smart Cities based on Current Research.” *Institute of Electrical and Electronics Engineers Smart Cities Workshop*, Kansas City, Missouri, February 8-9, 2016.
7. Ho, A., **Sutley, E.J.**, Kondyli, A., and Johnson, B. (2016). “Building an Adaptive System for Multiple Policy Goals in Cities.” *Institute of Electrical and Electronics Engineers Smart Cities Workshop*, Kansas City, Missouri, February 8-9, 2016.
8. **Jennings<sup>1</sup>, E.N.**, J.W. van de Lindt, and L. Peek (2015). “Multi-Objective Community-Level Seismic Retrofit Optimization for Resiliency using Engineering and Socioeconomic Variables.” *12<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering*, Vancouver, Canada, July 12-15, 2015.
9. **Jennings<sup>1</sup>, E.N.**, J.W. van de Lindt, and L. Peek (2014). “Multi-Objective Optimization Approach for Decision-Making Based on Community Level Resiliency Considering Engineering and Social Variables.” *Third International Conference on Urban Disaster Reduction*, Boulder, Colorado, September 2014.
10. **Jennings<sup>1</sup>, E.N.**, J.W. van de Lindt, X. Shao, W. Pang, and E. Ziaei, (2014). “Full-Scale Hybrid Testing of a Soft-Story Woodframe Building Seismically Retrofitted Using Shape Memory Alloy Devices in Scissor-Jack Braces.” *Tenth U.S. National Conference on Earthquake Engineering. Frontiers of Earthquake Engineering*, July 21-25, 2014, Anchorage, Alaska.
11. van de Lindt, J.W., P. Bahmani, **E.N. Jennings<sup>1</sup>**, W. Pang, E. Ziaei, G. Mochizuki, M. Gershfeld, S. Pryor, X. Shao, M. Symans, J. Tian, D. Rammer, (2014). Full-Scale Testing of Soft-Story Woodframe Buildings with Stiffness-Based Retrofits. *Tenth U.S. National Conference on Earthquake Engineering. Frontiers of Earthquake Engineering*, July 21-25, 2014, Anchorage, Alaska.
12. Pang, W., E. Ziaei, X. Shao, **E. Jennings<sup>1</sup>**, J. van de Lindt, M. Gershfeld, and M. Symans, (2014). “A Three-Dimensional Model for Slow Hybrid Testing of Retrofitted Soft-Story WoodFrame Buildings.” *Tenth U.S. National Conference on Earthquake Engineering. Frontiers of Earthquake Engineering*, July 21-25, 2014, Anchorage, Alaska.
13. van de Lindt, J.W., P. Bahmani, M. Gershfeld, G. Mochizuki, X. Shao, S.E. Pryor, W. Pang, M.D. Symans, J. Tian, E. Ziaei, **E.N. Jennings<sup>1</sup>**, D. Rammer, (2014). Seismic Risk Reduction for Soft-Story Wood-Frame Buildings: “Test Results and Retrofit Recommendations from The NEES-Soft Project.” *World Conference on Timber Engineering*, Quebec City, Canada, August 10-14, 2014.
14. Gershfeld, M., C. Chadwell, **E. Jennings<sup>1</sup>**, E. Ziaei, W. Pang, X. Shao, J. van de Lindt, (2014). “Seismic Performance of Distributed Knee-Brace (DKB) System as a Retrofit for Weak-Story Wood-Frame Buildings.” *World Conference on Timber Engineering*, Quebec City, Canada, August 10-14, 2014.
15. Pang, W., E. Ziaei, **E. Jennings<sup>1</sup>**, X. Shao, J. van de Lindt, M. Gershfeld, and S. Pryor, (2014). “Numerical Model for Hybrid Simulation of a Three-Story Wood-Frame Building.” *World Conference on Timber Engineering*, Quebec City, Canada, August 10-14, 2014.
16. van de Lindt, J.W., P. Bahmani, S. Pryor, G. Mochizuki, M. Gershfeld, W. Pang, E. Ziaei, **E. Jennings<sup>1</sup>**, M. Symans, X. Shao, J. Tian, and D. Rammer, (2014). “Overview of the NEES-Soft

Experimental Program for Seismic Risk Reduction of Soft-Story Woodframe Buildings.” *Structures Congress* 2014: pp. 2875-2885.

17. Gershfeld, M., C. Chadwell, J. van de Lindt, W. Pang, E. Ziaei, M. Amini, S. Gordon, **E. Jennings<sup>1</sup>**, (2014). “Distributed Knee-Braced (DKB) System as a Complete or Supplemental Retrofit of Soft-Story Wood-frame Buildings.” *Structures Congress* 2014: pp. 2853-2874.
18. van de Lindt, J.W., P. Bahmani, M. Gershfeld, G. Mochizuki, X. Shao, W. Pang, M. Symans, E. Ziaei, **E. Jennings<sup>1</sup>**, S. Pryor, D. Rammer, J. Tian, (2013). “Full-Scale Dynamic Testing of Soft-Story Retrofitted and Un-Retrofitted Woodframe Buildings.” *Structural Engineers Association of Southern California*, San Diego, CA.
19. **Jennings<sup>1</sup>, E.**, and J.W. van de Lindt, (2013). “Low Cost Shape Memory Alloy Devices for Seismic Response Modification of Light-Frame Wood Buildings.” *Structures Congress* 2013: pp. 1205-1216. doi: 10.1061/9780784412848.107
20. **Jennings<sup>1</sup>, E.N.**, and J.W. van de Lindt, (2012). “Shape Memory Alloy Dampers for Response Modification of Light-Frame Wood Buildings.” *15th World Conference on Earthquake Engineering*, Lisboa, Portugal, September 2012.
21. **Jennings<sup>1</sup>, E.**, J. Wang, K. Fridley, and C. Chen, (2013). “Temperature Effect on Subcritical Crack Growth in CFRP Externally Bonded Concrete Systems.” *ASC 28th annual technical conference*, Sept 9th – 11th, 2013, State College, PA, CD-ROM proceeding (15 pages).

### Other Publications

1. **Jennings<sup>1</sup>, E.** (2015). “A Multi-Objective Community Level Seismic Retrofit Optimization Combining Social Vulnerability with an Engineering Framework for Community Resilience.” A dissertation. Colorado State University. Copyright 2002-2013. Duraspace.  
<http://hdl.handle.net/10217/166964>.
2. **Jennings<sup>1</sup>, E.**, E. Ziaei, J. van de Lindt, W. Pang, X. Shao, G. Mochizuki, M. Gershfeld, D. Rammer, J. Tian, M. Symans (2014). "Hybrid Testing of a Full-Scale Three-Story Soft-Story Woodframe Building", Network for Earthquake Engineering Simulation (distributor), Dataset, DOI:10.4231/D3JS9H85N
3. **Jennings<sup>1</sup>, E.** (2011). “Environment-Assisted Subcritical Crack Growth in CFRP Externally Bonded Concrete Systems.” A thesis. University of Alabama. Order No. 1505196. Available from ProQuest Dissertations & Thesis Global (917745430).

### Presentations

1. **Sutley, E.J.** (2017). “Post-Disaster Housing Recovery: An Integrated Engineering and Social Science Perspective.” Invited Seminar, University of Massachusetts, Amherst, Massachusetts, April 14, 2017.

2. **Sutley, E.J.** (2017). "Protecting your Home from Natural Disasters: New Construction and Retrofit", Professional Development Seminar, Burns & McDonnell, Kansas City, Missouri, April 10, 2017.
3. **Sutley, E.J.** and Hamideh, S. (2016). "Post-Disaster Housing Recovery." *American Planning Association, Kansas Chapter Conference*, Lawrence, Kansas, October 5-7, 2016.
4. **Sutley, E.J.**, and Hamideh, S. (2016). "A Community Model for Residential Sector Recovery: An Integrated Engineering and Social Science Perspective." 1st International Workshop on Resilience, September 20-22, 2016, Torino, Italy.
5. **Sutley, E.J.** (2016). "Post-Disaster Housing Recovery: An Integrated Engineering and Social Science Perspective." Invited Seminar, Colorado School of Mines, Golden, Colorado, September 9, 2016.
6. **Sutley, E. J.** "Interdisciplinary Work." Society of Women in Design, Student Group Meeting, University of Kansas. Nov. 17, 2015.
7. **Sutley, E.J.** (2017). "Preventing Natural Hazards from Becoming Natural Disasters", Professional Development Seminar, Burns & McDonnell, Kansas City, Missouri, April 11, 2016.
8. **Sutley, E. J.** "Community Resilience." Red Hot Research at The Commons, University of Kansas. Jan. 29, 2016.
9. **Sutley, E. J.** "Community Resilience." Structural Engineering Association of Kansas and Missouri, Student Group Meeting, University of Kansas. Feb. 18, 2016.
10. **Sutley, E. J.** "Community Resilience." Society of Women Engineers, Student Group Meeting, University of Kansas. March 1, 2016.
11. **Sutley, E. J.**, and van de Lindt, J.W. (2016). "Evolution of Predicted Seismic Risk of Low-Rise Woodframe Buildings." *Geotechnical and Structural Engineering Congress*, Phoenix, Arizona, February 15, 2016.
12. **Jennings<sup>1</sup>, E.N.**, J.W. van de Lindt, and L. Peek (2015). "Multi-Objective Community-Level Seismic Retrofit Optimization for Resiliency using Engineering and Socioeconomic Variables." *12<sup>th</sup> International Conference on Applications of Statistics and Probability in Civil Engineering*, Vancouver, Canada, July 13, 2015.
13. **Jennings<sup>1</sup>, E.N.**, J.W. van de Lindt, X. Shao, W. Pang, and E. Ziaei, (2014). "Full-Scale Hybrid Testing of a Soft-Story Woodframe Building Seismically Retrofitted Using Shape Memory Alloy Devices in Scissor-Jack Braces." *Tenth U.S. National Conference on Earthquake Engineering*. Frontiers of Earthquake Engineering, July 22, 2014, Anchorage, Alaska.
14. **Jennings<sup>1</sup>, E.**, van de Lindt, J.W., and Peek, L. (2014). "Multi-Objective Optimization Approach for Decision-Making: Considering Engineering and Social Variables for Community Level Resilience." *Third International Conference on Urban Disaster Reduction*, Boulder, Colorado, September 30, 2014.

15. **Jennings<sup>1</sup>, E.**, and J.W. van de Lindt, (2013). “Low Cost Shape Memory Alloy Devices for Seismic Response Modification of Light-Frame Wood Buildings.” *Structures Congress*, Boston, Massachusetts, May 3, 2013
16. **Jennings<sup>1</sup>, E.**, and van de Lindt, J.W. (2012). “Shape Memory Alloy Dampers for Response Modification of Light-Frame Wood Buildings.” *15th World Conference on Earthquake Engineering*, Lisboa, Portugal, September 28, 2012.

#### **Externally Funded Research** (Principle Investigator unless noted otherwise)

1. “Exploring the Factors Influencing Property Value Changes and Neighborhood Health in Johnson County Kansas,” June 2016 – Present, Johnson County, Kansas, \$39,746 (Co-investigator with T. Lei, PI, A. Ho, J. Fowles, A. Kondyli).
2. “Determination of Overhead Sign Truss Sign Support Coupler Connection Fatigue Life,” February 2016 – Present, Kansas Department of Transportation, \$144,846 (Co-investigator with C. Bennett, PI, W. Collins, J. Li, M. Fadden).
3. “Center for Risk-Based Community Resilience Planning,” April 2015 – Present, National Institute of Standards and Technology funded Center of Excellence, \$60,000.

#### **Teaching Experience**

- CE 768 *Design of Timber Structures*, University of Kansas  
Professor, covered topics on traditional and state-of-the art wood and timber design of buildings, Spring 2016, Spring 2017
- CE 461 *Structural Analysis*, University of Kansas  
Professor, covered topics on the fundamentals of structural analysis, Fall 2015, Fall 2016
- CE 490 *Environmental Sustainability and Community Resilience*, University of Kansas  
Professor, independent study course covering environmental LCA and resilient structural retrofit cost-benefit analysis procedures, Summer 2017
- CE 991 *Community Resilience*, University of Kansas  
Professor, independent study course covering the meaning of community resilience, Spring 2016
- CIVE 367 *Structural Analysis*, Colorado State University  
Lecturer, covered topics on the fundamentals of structural analysis, Spring 2015
- CE 262 *Civil and Construction Engineering Materials*, University of Alabama  
Graduate Teaching Assistant, lectured and executed laboratory experiments in 1 credit hour supplemental laboratory, 7 sections in total, awarded “Outstanding Graduate Teaching Assistant” per student vote, Fall 2010, Spring 2011, Summer 2011

### **Honors and Awards**

- 2016 American Society of Civil Engineering Excellence in Civil Engineering Education Fellow
- 2015 Civil Engineering Risk and Reliability Association Student Recognition Award
- 2011 Engineering Council of Birmingham Civil Engineering Graduate Student Engineer of the Year
- 2011 National Science Foundation Graduate Research Diversity Supplement Doctoral Fellow
- 2011 University of Alabama National Alumni Association Graduate Fellow
- 2011 Bibb Graves award for Outstanding Graduate Teaching Assistant
- 2010 Nell Vice Support Fund Scholarship
- Chi Epsilon Honor Society

### **Professional Activities and Memberships**

- Chair-Elect, Design of Wood Structures Committee, SEI Technical Activities Division, ASCE, October 1, 2017
- Committee Member, Social Science, Policy, Economics, Education Decision (SPEED) Committee, Infrastructure Resilience Division, ASCE, February 27, 2017 – Present
- Secretary and ECO Representative, NHERI User Forum Committee, February 13, 2017 – Present
- Committee Member, Multi-Hazard Mitigation Committee, SEI Technical Activities Division, ASCE, October 1, 2016 – Present
- Committee Member, Design of Wood Structures Committee, SEI Technical Activities Division, ASCE, October 1, 2016 – Present
- Committee Member, Performance of Wood Structures Committee, SEI Technical Activities Division, ASCE, October 1, 2016 – Present
- Faculty Advisor, Women in Design, Student Group, University of Kansas, August 2015 – Present
- Faculty Advisor, Earthquake Engineering Research Institute, Student Group, University of Kansas, August 2016 – Present
- Faculty Advisor, GEOWall Competition, Student Group, University of Kansas, August 2015 – May 2016