

**WILLIAM J. KIRKHAM**  
**Curriculum Vitae**  
January 31, 2020

**Personal Information**

Director of the MCE Program  
Academic Advisor  
Professor of Practice  
Civil/Environmental/Architectural Engineering  
University of Kansas - Edwards Campus  
12600 Quivira Rd  
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Overland Park, KS 66213

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**Education**

Ph.D., Wood Science & Civil Engineering (dual major), 2013  
Oregon State University, Corvallis, OR

M.S., Civil Engineering, 1998  
Oregon State University, Corvallis, OR

B.S., Chemical Engineering, 1978  
Oregon State University, Corvallis, OR

B.S., Computer Science, 1978  
Oregon State University, Corvallis, OR

**Licensures, Certifications, and Professional Training**

Professional Engineer, California (No. 65684)

Professional Engineer, District of Columbia (No. 901004)

Professional Engineer, Florida (No. 65974) Structural 1 Endorsement

Professional Engineer, Maryland (No. 30113)

Professional Engineer, New York (No. 096194)

Professional Engineer, North Carolina (No. 029547)

Professional Engineer, Texas (No. 109594) Structural 1 Endorsement

Professional Engineer, Virginia (No. 0402 039677)

Professional Engineer, Washington (No. 41109)

Structural & Professional Engineer, Nevada (No. 029547)

Structural Engineer, Arizona (No. 43428)

Structural Engineer, Hawaii (No. PE-14492)

Structural Engineer, Oregon (No. 57738)

Structural Engineer, Utah (No. 5994387-2203)

Professional Engineer, Kansas (No. 25473), January 24, 2017 - Present

Social & Behavioral Research-Basic/Refresher, CITI Program, November 22, 2019 - November 21, 2022

Structural Engineer, Idaho (No. P-15201), November 30, 2019  
Retired

Professional Engineer, Colorado (No. 39220), May 17, 2005 - October 31, 2019  
Expired

Professional Engineer, Montana (No. 42682), May 26, 2016 - May 31, 2019  
Expired

## **Employment History**

### **Academic**

Oregon State University, Corvallis, OR

Graduate Teaching Assistant, WSE 458/558 Wood Design, Winter 2010

Prepared and presented lectures on shear wall and horizontal diaphragm design, and on perforated shear wall design. Tracked student skills for ABET accreditation, graded homework and quizzes, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.

Graduate Teaching Assistant, CE 482/582 Masonry Design, Winter 2007

Tracked student skills for ABET accreditation, graded homework, quizzes and exams, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.

Graduate Teaching Assistant, CEM 381 Structures I, Fall 2006

Prepared and presented lectures on analysis of vertical structural loads by tributary area method and on lateral forces on a structure. Tracked student skills for ABET accreditation, graded homework and quizzes, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.

Graduate Teaching Assistant, CE 482/582 Masonry Design, Winter 2006

Tracked student skills for ABET accreditation, graded homework, quizzes and exams, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.

Graduate Teaching Assistant, WSE 458/558 Wood Design, Winter 2005

- Tracked student skills for ABET accreditation, graded homework and quizzes, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.
- Graduate Teaching Assistant, CE 482/582 Masonry Design, Winter 2005
  - Tracked student skills for ABET accreditation, graded homework, quizzes and exams, tracked scores during term and computed final scores at the end of the term, provided guidance and assistance to students during regularly scheduled office hours.
- Graduate Teaching Assistant, CE 381 Structural Theory I, Fall 2004
  - Graded homework and quizzes, entered scores on Blackboard, provided guidance and assistance to students during regularly scheduled office hours.

### Professional

- APT Engineering, LLC, Eudora, KS
  - Principal, 2003 - Present
    - Structural engineering and building envelope system design in multiple states. Complete responsibility for all phases from initial client contact through final project closeout.
- DCI Engineers, Inc., Portland, OR
  - Project manager, 2001 - 2003
    - Full responsibility from initial client contact through project completion. Design and seismic upgrades of masonry, steel, concrete and wood structures.
- KPFF Consulting Engineers, Portland, OR
  - Project manager/design engineer, 1998 - 2001
    - Full responsibility from initial client contact through project completion. FEMA studies of existing structures. Destructive and nondestructive evaluation of existing structures. Design and seismic upgrades of new masonry, steel, concrete and wood structures.

### Administrative Assignments

- Edwards Campus, Civil, Environmental and Architectural Engineering, Overland Park, KS 66213
  - Director of the Masters in Civil Engineering Program
  - Academic Advisor, August 3, 2016 - Present
    - 20% Administration - Advisor to MCE Program students and students working on the Structural Certificate programs. Market the programs to the Kansas City area. Recruit and supervise additional faculty.
    - 80% Teaching - Develop and present relevant graduate level classes to program students.

### Professional Memberships

- Structural Engineers Association of Kansas-Missouri (SEAKM) (2016 - Present)
- American Wood Council (2014 - Present)
- American Institute of Steel Construction (2005 - Present)
- American Society of Civil Engineers (2000 - Present)
- Structural Engineers Association of Oregon (1998 - 2016)

Forest Products Society (2008)

Earthquake Engineering Research Institute (2003 - 2005)

## Professional Service

### National

#### Chairperson

(Elected) ASCE/SEI Committee on the Performance of Wood Structures. Three year term.  
(October 1, 2016 - September 30, 2019)

#### Member

(Appointed) American Society of Civil Engineers, ASCE/SEI Wood Research Subcommittee.  
(2013 - 2019)  
(Appointed) ASCE/SEI Research Committee of the Technical Administrative Committee on  
Wood. 6 year term (2013 - 2019)

## Public Service

Participant, (Appointed), (Pro Bono), Engineering & Architecture (KC Global Design) TIE,  
Participate in developing a quantitative and qualitative analysis to develop a broad and deep  
understanding of the labor needs of Kansas City's global design industry as part of a Talent-  
to- Industry Exchange. It is intended to strengthen the alignment of talent produced by  
educational institutions with the skills and competencies required by businesses in the Kansas  
City area. Kansas City Region (April 2017 - May 2017)

## Honors/Awards/Honor Societies

### Honor Societies Honors/Awards

Phi Kappa Phi National Honor Society (1998 - Present)

## Research/Scholarly Work

### Publications

#### Journal Articles and Conference Proceedings

Kirkham, W. J. (2019). How Levels of Fabrication Precision Can Lead to Improved Quality in  
Light Frame Wood Construction. In *Structures Congress 2019* (pp. 66-73).  
<https://ascelibrary.org/doi/abs/10.1061/9780784482223.007> doi:10.1061/9780784482223.007

Kirkham, W. J. (2018). Reducing Construction Defects and Design Errors in Timber Buildings.  
In *Proceedings of the ASCE/SEI Structures Congress 2018*

Kirkham, W. J., Miller, T. H., & Gupta, R. (2016). Practical Analysis for Horizontal Diaphragm  
Design of Wood-Frame Single-Family Dwellings. *Practice Periodical on Structural Design  
and Construction*, 21(1), 04015005-1 to 13.

Kirkham, W. J. (2015). Case Study: Four Story Assisted Living Facility Alleges Unacceptable

Design and Construction Defects. What Can We Learn? In *Proceedings of the 2015 ASCE Structures Congress, Portland, OR*.

Kirkham, W. J., Gupta, R., & Miller, T. H. (2014). Effects of Roof Pitch and Gypsum Ceilings on the Behavior of Wood Roof Diaphragms. *J. Performance of Constructed Facilities*, 29(1), 04014039-1 to 9.

Kirkham, W. J., Gupta, R., & Miller, T. H. (2014). State-of-the-Art: Seismic Behavior of Wood-Frame Residential Structures. *J. Structural Engineering*, 140(4), 04013097-1 to 19.

Kirkham, W. J., & Miller, T. H. (2000). Examination of AISC LRFD Shear Lag Design Provisions. *Engineering Journal, AISC*, 37(3), 83-98.

### **Other Publications**

Sutley, E. J., Chen, Z., Li, J., Chao, H., Liba, D., Clements, J., Prativa, S., Taher, S., Kim, J., Lequesne, R., Kirkham, W., & Roueche, D. (2019). StEER - 28 MAY 2019 LINWOOD, KS EF4 TORNADO: FIELD ASSESSMENT STRUCTURAL TEAM 1 (FAST-1). In *DesignSafe-CI*. doi:10.17603/ds2-a06x-f358

Sutley, E. J., Remy, L., Li, J., Kirkham, W. J., et al. (2019). *StEER - 28 MAY 2019 LINWOOD, KS EF4 TORNADO: FIELD ASSESSMENT STRUCTURAL TEAM (FAST) EARLY ACCESS RECONNAISSANCE REPORT (EARR)*. doi:10.17603/ds2-xz1j-nm14

### **Invited Presentations/Lectures**

Kirkham, W. J., PE, SE, PhD. (2018, January 17). *Recent Research into the Behavior of Pitched Wood Diaphragms. (They don't do what you think!)*. Structural Engineers Association of Kansas & Missouri  
Wichita Chapter  
January 2018 Chapter Meeting, Wichita, KS.

Kirkham, W. J., PE, SE, PhD. (2017, November 15). *Recent Research into the Behavior of Pitched Wood Diaphragms. (They don't do what you think!)*. Structural Engineers Association of Kansas & Missouri  
Kansas City Chapter  
November 2017 Chapter Meeting, Overland Park, KS.

Kirkham, W. J. (2006, September). *A Practical Analysis System for Estimating and Mitigating Seismic Damage in Single-Family Wood Dwellings*. Presentation, Regional Wood Science Universities meeting.

Kirkham, W. J. (2006, May). *New Products in Wood Construction: Design, Use and Specification*. Presentation, Woodfest, Portland, OR.

Kirkham, W. J. (2001, November). *Recommendations for Changes in AISC Shear Lag Code*. Presentation, AISC Task Committee 6 meeting.

### **Presentations/Lectures**

Kirkham, W. J. (2019, April 25). *Lateral Strength of Nailed Connections in Light-frame Wood*

- Buildings with Fabrication Errors*. Structures Congress 2019, Orlando, FL.
- Kirkham, W. J., PE, SE, PhD. (2018, March 19). *Raising the Bar on Wood Construction*. Department of Civil, Environmental and Architectural Engineering, Professional Development Series, Spring 2018, Kansas City, MO.  
Wood is sustainable, durable, easy to fabricate and inexpensive to install. Psychological studies show that people like wood. Other studies show that people perform better in office buildings with exposed wood. But we also see a great deal of litigation in wood construction. Wood is subject to rot and decay. Natural disasters have destroyed wood buildings while leaving other types of buildings untouched. Wood buildings are frequently torn down and replaced with other buildings. What can be done to improve our clients' experience with wood buildings? Hear from the Chair of the ASCE/SEI Committee on the Performance of Wood Construction.
- Kirkham, W. J., PE, SE, PhD. (2017, February 27). *Managing Design Responsibilities between the Engineer of Record*. Department of Civil, Environmental and Architectural Engineering, Professional Development Series, Spring 2018, Kansas City, MO.  
A cause of many construction defect claims is water leakage or environmental effects within the building envelope or façade. Traditionally, the Engineer-of-Record delegates design of the façade to a Specialty Structural Engineer. Mis-communication between these engineers can be at the root of many claims. Dr. William Kirkham has almost 20 years of design experience on both sides of the façade and will provide his view of how to coordinate and improve the design process between engineers with different responsibilities.
- Kirkham, W. J., PE, SE. (2017, January 10). *Cross-Laminated Timber--Material of the Present or Future*. Structural Engineers Association of Kansas & Missouri  
Kansas City Chapter  
January 2017 Chapter Meeting, Overland Park, KS.
- Kirkham, W. J. (2016, November 03). *Case Study: Four Story Assisted Living Facility Alleges Unacceptable Design and Construction Defects. What Can We Learn?* Presentation, ASCE Young Members Group, Kansas City, KS.
- Kirkham, W. J. (2015). *Case Study: Four Story Assisted Living Facility Alleges Unacceptable Design and Construction Defects. What Can We Learn?* Presentation, ASCE Structures Congress, Portland, OR.
- Kirkham, W. J., Miller, T. H., & Gupta, R. (2014). *Practical Limits on Torsion in Woodframe Single Family Dwellings*. Presentation, ASCE Structures Congress, Boston, MA.
- Kirkham, W. J. (2011). *Stiffness of Pitched Wood Roof Diaphragms*. Poster, Forest Products Society 65th International Convention, Portland, OR.
- Kirkham, W. J. (2011). *Stiffness of Pitched Wood Roof Diaphragms*. Poster, Wood Based Composites Center Meeting, Corvallis, OR.
- Kirkham, W. J. (2004). *Development of a Rapid Analysis System for Estimating and Mitigating Seismic Loss In Single-Family Wood Dwellings*. Poster, EERI Annual Meeting, Los Angeles, CA.

## Research Funding/Fellowships

## University of Kansas

### Externally-Funded Grant/Contract

#### Funded

Kirkham, W. J., PE, SE (Principal), "Development of a Paper on the Controllable Effects of Material Conditions, Fabrication, and Workmanship on the Performance of Wood Structures," American Society of Civil Engineers (ASCE), Structural Engineering Institute (SEI), Submitted April 2016. The ASCE/SEI Committee for the Performance of Wood Structures proposes to review present knowledge and research on the construction of wood structures and produce a paper outlining the commonly encountered material conditions, fabrication, and workmanship issues in wood construction that can lead to structure performance issues. This project will be the first step of a larger plan to eventually develop a pre-standard or guideline to improve wood construction practices.

### Service Publications

Kirkham, W. J. (unpublished). Reasons to earn a Master's in Civil Engineering (Structural Emphasis). Provided to Edwards Campus marketing department to provide a fact list that can be used in brochures, flyers and program marketing.

### Service Presentations

Kirkham, W. J. (2016, September 15). *Brief Presentation of the KU Edwards MCE program.* Structural Engineers Association of Kansas-Missouri (SEAKM), Mission, KS.

### Other Activity

#### Additional Pedagogical Studies

Methods of College Teaching in Science and Mathematics  
(Spring 2008)

Success in the College Classroom  
(Winter 2007)