Dustin T. Cook, P.E.

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Education

Ph.D. Candidate, University of Colorado, Boulder — **2017-Present**
Department of Civil, Environmental, and Architectural Engineering — 3.8 GPA

Dissertation: Improving Seismic Design and Assessment: Development of New Component, Collapse, and Functional Recovery Metrics

Advisor: Abbie Liel

Expected Completion Date: December, 2020

M.S. University of California, Los Angeles — **2014**
Department of Civil and Environmental Engineering — 3.6 GPA

B.S California State University, Chico — **2012**
Department of Civil and Environmental Engineering — 3.7 GPA

Teaching Experience

Teaching Assistant: Reinforced Concrete Design and Senior Design — **2018-2019**
University of Colorado, Boulder: CEAE Department

Provided teaching and administrative assistance to aid professors in providing instruction to undergraduate engineering students for reinforced concrete design in the Fall of 2018 and senior design in the Spring of 2019. Corresponded with students via email, held bi-weekly office hours, graded student assignments, organized guest lectures, and occasionally lectured on class material.

Lecturer of Civil Engineering: Statics Lecture and Activity Session — **2015-2016**
California State University Chico: Department of Civil Engineering

Instructed undergraduate engineering students in the resolution of forces on rigid bodies in 2D and 3D space through structured lecture and activity sessions in the Fall of 2015 and the spring of 2016. Monitored student learning through regular exams, graded homework assignments, in-class activity assignments, and regularly held office hours.

Instructor of Civil Engineering: Statics Activity Session — **2013**
California State University Chico: Department of Civil Engineering

Instructed three statics activity sessions for undergraduate engineering students. Facilitated student learning through in-class example problems and demonstrated statics fundamentals through hands-on activities. Graded activities and homework assignments.

Undergraduate Instructor: Mechanics of Materials Extra Session — **2012**
California State University Chico: Department of Construction Management

Conducted weekly instructional sessions for undergraduate construction management students. Provided instruction and feedback on mechanics of materials homework assignments and practice problems.

Work Experience

Research Engineer, Technical Developer, and Seismic Risk Consultant — **2014-Present**
Haselton Baker Risk Group, LLC
Developed software for performance based earthquake engineering. Researched and developed new methods for structural response and performance model population to expedite the PBEE and risk assessment process. Assisted clients in performing seismic risk assessments.

Junior Structural Engineer — **2014-2015**
Culp and Tanner, Inc. Structural Engineers
Reviewed shop drawings related to reinforced concrete, post tensioned, and steel components. Aided in the design of reinforced concrete columns for a parking garage system.

Research Experience

ATC-134: Performance-Based Seismic Engineering: Benchmarking of Existing Building Evaluation Methodologies — **2017-Present**
Funded by the National Institute of Science and Technology (NIST)
Working group member. Compared the response of an ASCE 41 analytical model with the observed damage and instrumented response of a structure.

ATC-123: Improving Seismic Design of Buildings with Configuration Irregularities — **2015-2018**
Funded by the Federal Emergency Management Agency (FEMA)
Working group member. Analytically investigated response of modern RC moment frame structures with vertical irregularities.

ATC-58-2: Development of Performance Based Seismic Design Guidelines: Phase 3 — **2014-2017**
Funded by the Federal Emergency Management Agency (FEMA)
Working group member. Helped develop guidelines, resources, and methods for the improvement of the FEMA P-58 method.

NEESR-CR: Full-Scale RC and HPFRC Frame Subassemblies Subjected to Collapse-Consistent Loading Protocols for Enhanced Collapse Simulation and Internal Damage Characterization — **2012-2017**
Funded by the National Science Foundation (NSF)
Working group member. Developed near fault loading protocols for experimental tests of RC moment frame subassemblies.

2012 PEER Summer Internship Program — **Summer 2012**
Funded by the National Science Foundation (NSF)
Student Intern. Experimentally investigated shear wall boundary element behavior.

Publications and Presentations

Cook and Liel. *A Framework to Relate Component Response to Global Consequences.* Bulletin of Earthquake Engineering: Advances in Seismic Fragility and Vulnerability Assessment. Anticipated submission -- January 31, 2020. Working draft available upon request.

Cook and Liel. *ASCE 41 Assessment of the Imperial County Services Building and Comparison with Recorded Response.* 17th World Conference on Earthquake Engineering, 2020. Abstract accepted. Paper to be submitted Jan. 31, 2020.

Cook, Liel, DeBock, Haselton. *Hindcasting Loss Estimate for the 1994 Northridge Earthquake: Implications for Loss Assessment at Low Intensity Shaking.* 17th World Conference on Earthquake Engineering, 2020. Abstract accepted. Paper to be submitted Jan. 31, 2020.

Cook, Liel, Luco, Almeter, and Haselton. *Implications of Seismic Design Values for Economic Losses*. Paper and presentation at the 13th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP13, 2019.

Cook, Liel, and Haselton. *Benchmarking of Seismic Loss Estimations from FEMA P-58 Compared to Other Methods*. Presentation at ASCE & SEI Structures Congress, 2019.

Wade, DeBock, Haselton, **Cook**, and Almeter. *Expected Performance of New Building-Code-Compliant Buildings in California.* Paper and presentation at the SEAOC Convention, 2018.

Cook, Wade, Haselton, Baker, and DeBock. *A Structural Response Prediction Engine to Support Advanced Seismic Risk Assessment.* Paper at the 11th National Conference on Earthquake Engineering, 2018.

Haselton and **Cook**. *Resilient Seismic Design Using Prescriptive and Non-Prescriptive Design Methods*. Paper and presentation at the 11th National Conference on Earthquake Engineering, 2018.

Debock, **Cook**, Haselton, and Wade. *New Developments for Rapid Seismic Risk Assessment of Wood Light-Frame Buildings*. Paper and presentation at the 11th National Conference on Earthquake Engineering, 2018.

Debock, Wade, **Cook**, Haselton, Valley, and Sabol. *Quantitative Assessments of Code Provisions for Vertical Building Irregularities in Frame Buildings.* Paper and presentation at the 11th National Conference on Earthquake Engineering, 2018.

Wade, Debock, Lawson, Koliou, **Cook**, and Haselton. *Seismic Risk Assessment of Tilt-Up Buildings using the FEMA P-58 Method.* Paper and presentation at the 11th National Conference on Earthquake Engineering, 2018.

Debock, Fitzgerald, **Cook**, Haselton. *New Developments in FEMA P-58 Seismic Risk Assessment of Wood Light-Frame Buildings*. Paper and presentation at the SEAOC Convention, 2016.

Cook, Fitzgerald, Chrupalo, Haselton, Baker. *Building Loss Estimation Methods: A Comparison of Methods and Recommendations for the Future.* Paper and presentation at the ATC & SEI, 2nd Conference on Improving the Seismic Performance of Existing Buildings and Other Structure, 2015.

Fitzgerald, **Cook**, Haselton. *Building Loss Estimation Methods: NSF NEESR Full-Scale Ductile RC Columns Subjected to Collapse-Consistent Loading Protocols: Learning from the Test Data and Recommendations for Simulating Collapse Behavior and Estimating Building Collapse Safety*. Paper and presentation at the ATC & SEI, 2nd Conference on Improving the Seismic Performance of Existing Buildings and Other Structure, 2015.

Haselton, **Cook**, Fitzgerald, Baker. *Progress on Resilience-Based Seismic Design and Assessment Supported by Advanced Prediction of Building Damage, Repair Cost, and Building Closure Time.* Paper and Presentation at the ATC & SEI, 2nd Conference on Improving the Seismic Performance of Existing Buildings and Other Structure, 2015.

Tremayne, Mahin, Anderson, **Cook**, Erceg, Esparza, Jimenez, Krausz, Lo, Lopez, McCurdy, Shipman, Strum, *Earthquake Engineering for Resilient Communities: 2012 PEER Internship Program Research Report Collection*. Paper published by PEER 2012/07.

Upcoming Publications

Cook and Liel. *A Framework for Assessing Building Specific Functional Restoration.* Anticipated journal submission -- December 31, 2020.

Cook and Liel. *Benefits and Costs Associated with Designing for Improved Functionality.* Anticipated journal submission -- December 31, 2020.

Professional Affiliations & Activities

Earthquake Engineering Research Institute (EERI)

- Member since 2017.
- Interim Secretary, Younger Members Committee 2019 – Present.
- Reviewer for journal articles in *Earthquake Spectra*.

American Society of Civil Engineers (ASCE)

- Member since 2017.
- Reviewer for journal articles in *Natural Hazards Review*.