Jack W. Baker

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Google Scholar

Stanford University
473 Via Ortega, MC 4020
Stanford, California 94305-4020

PROFESSIONAL APPOINTMENTS

2022 - present	Associate Dean for Faculty Affairs, Stanford Doerr School of Sustainability, Stanford University
2019 - present	Professor of Civil & Environmental Engineering, Stanford University
2013 - 2019	Associate Professor of Civil & Environmental Eng., Stanford University
2006 - 2013	Assistant Professor of Civil & Environmental Eng., Stanford University
2005 - 2006	Visiting Researcher, Swiss Federal Institute of Technology, Zurich
2004	Visiting Researcher, Nagoya University

EDUCATION

Ph.D., Structural Engineering, Stanford University, 2005

M.A., Statistics, Stanford University, 2004

M.S., Structural Engineering, Stanford University, 2002

B.A., Mathematics/Physics, Magna Cum Laude, Whitman College, 2000

HONORS AND AWARDS

- William B. Joyner Lecture Award, awarded jointly from the Seismological Society of America and the Earthquake Engineering Research Institute, 2023
- Thorpe Medal Winner, from the European Council on Computing in Construction, 2022
- Association of American Publishers PROSE Award Finalist in the Earth Science category, for Seismic Hazard and Risk Analysis, 2022
- Structural Engineers Association of Northern California (SEAONC) Helmut Krawinkler Award, given to an individual who has demonstrated "outstanding leadership in implementing state-of-the-art research into practice," 2019
- ASCE Walter L. Huber Civil Engineering Research Prize. Citation: “For research to characterize the damaging effects of earthquake ground motion spectral shape, duration, near-fault directivity and other features for seismic hazard analysis and performance-based engineering of buildings, bridges, and geographically distributed infrastructure.” 2018
- University of Canterbury Visiting Erskine Fellow, 2015
- Excellence in Structural Engineering Research Award from the Structural Engineers Association of California (SEAOC). Awarded to the NGA-West project “for outstanding

achievement in the development of ground motion models and databases that have major impacts on structural engineering practice and research." 2015

- Lee Otterson Faculty Scholar, Stanford University, 2013
- Eugene L. Grant Award in recognition of dedication and excellence in teaching as voted by the students of the Department of Civil & Environmental Engineering at Stanford University, 2013
- Early Achievement Research Award from the International Association for Structural Safety and Reliability (IASSAR), 2013
- Outstanding Paper, Earthquake Spectra, 2011
- National Science Foundation CAREER Award, 2010
- Shah Family Innovation Prize, awarded by the Earthquake Engineering Research Institute to honor an individual under the age of 35 for creativity, innovation and an entrepreneurial spirit in earthquake risk mitigation and management. Citation: "In recognition of Jack Baker's exceptional contributions to the field of seismic risk assessment and communication. By bringing together the fields of structural engineering and engineering seismology, Dr. Baker has identified and introduced the pioneering approaches of using the ground motion parameter epsilon and Conditional Mean Spectrum concepts to select and scale ground motions for nonlinear analysis. These concepts are now employed worldwide in seismic risk analysis and performance-based engineering." 2010

SELECTED CONSULTING AND PROFESSIONAL EXPERIENCE

- *Haselton Baker Risk Group, LLC* (2014-present) Co-founder of software company producing tools to quantify seismic risk.
- *British Columbia Hydro and Power Authority* (2017-2022) Consultant on hazard analysis and ground motion selection for dam risk assessment and retrofit projects.
- *Geohazards International* (2021-2022) Statistical Scenario Methods Advisor for USAID project to advance the practice of developing disaster scenarios for geological hazards and undertaking scenario-based mitigation and preparedness planning.
- *California State Senate* (2013-2014) Expert panel member to review the design and construction of the San Francisco – Oakland Bay Bridge.

ADVISING AND COLLABORATION

Current Ph.D. Students

1. Omar Issa, Anticipated date of graduation: 2025
2. Emily Mongold, Anticipated date of graduation: 2025
3. Tinger Zhu, Anticipated date of graduation: 2026

4. Gabriele Calana, Anticipated date of graduation: 2027

Former Ph.D Students

5. Corinne Bowers, "Characterizing hydrologic and economic risk due to flooding driven by atmospheric rivers," 2023

6. Rodrigo Silva Lopez, "Seismic risk management of complex road networks: optimization methods and integration of community impact metrics," 2022

7. Gitanjali Bhattacharjee, "Seismic risk mitigation strategies for complex regional transport networks," 2021

8. Yilin Chen, "Geostatistical analysis of nonstationary spatial variation in ground motion amplitudes," 2021

9. Sabine Loos, "Mapping post-disaster need: Flexible approaches to rapidly estimate building damage and non-recovery for vulnerable populations,"2021

10. Ganyu Teng, "Short-term hazard analysis in the presence of induced seismicity," 2021

11. Anne Hulsey, "The community impact of post-earthquake safety decisions based on damage to tall buildings and elevated hazard due to aftershocks," 2020. Co-advisors: Greg Deierlein and Jack Baker

12. Gemma Cremen, "Analysis, Evaluation, and Improvement of Performance-Based Earthquake Engineering Damage and Loss Predictions," 2019

13. Maryia Markhvida, "Engineering and economic modeling of post-earthquake decision making and regional recovery," 2019

14. Abhineet Gupta, "Quantifying temporally-varying induced seismicity hazard and regional risk: Statistical approaches and application in Oklahoma," 2017

15. Jason Wu, "End-to-End Seismic Risk Analysis Framework for the Identification of Infrastructure Network Retrofits," 2017

16. Reagan Chandramohan, "Effect of long duration ground motions on structural performance," 2016. Co-advisors: Greg Deierlein and Jack Baker

17. Beliz Ugurhan Gokkaya, "Seismic reliability assessment of structures incorporating modeling uncertainty and implications for seismic collapse safety," 2015. Co-advisors: Greg Deierlein and Jack Baker

18. Christophe Loth, "Multivariate ground motion intensity measure models, and implications for structural reliability assessment," 2014

19. Mahalia Miller, "Seismic risk assessment of complex transportation networks," 2014

20. Lynne Burks, "Ground motion simulations: validation and application for civil engineering problems," 2014

21. Andrew Seifried, "Response spectrum compatibilization and its impact on structural response assessment," 2013

22. Shrey Shahi, "A probabilistic framework to include the effects of near-fault directivity in seismic hazard assessment," 2013

23. Ting Lin, "Advancement of hazard consistent ground motion selection methodology," 2012

24. Victor Victorsson, "The reliability of capacity-designed components in seismic resistant systems," 2011. Co-advisors: Greg Deierlein, Jack Baker and Helmut Krawinkler

25. Yoshifumi Yamamoto, "Stochastic model for earthquake ground motion using wavelet packets," 2011

26. Nirmal Jayaram, "Probabilistic seismic lifeline risk assessment using efficient sampling and data reduction techniques," 2010

Postdoctoral Students

Neetesh Sharma (2022-present)
Rodrigo Costa (2020-2022), Now at University of Waterloo
Neal Simon Kwong (2019-2021), Now at U.S. Geological Survey
Katy Serafin (2017-2019), Now at University of Florida
Camilo Gomez (2014-2015), Now at University de Los Andes
Hyeuk Ryu (2007-2010), Now at Geoscience Australia

Masters Students Supervised (with publications)

Chenbo Wang (2020-2021)
Jimmy Zhang (2021-2022)
Tamika Bassman (2019-2021)
Karen Barns (2017-2018)
Cynthia Lee (2015-2016)
Jen Foschaar (2011-2012)

Other M.S. Research Students

Sara Jozefiak (2006-2007)
Yang Dang (2010)
Ji Yun Lee (2010)
Bo Shen (2012-2013)
Ju-Young Shin (2013)
Yue Hua (2014-2015)
Abhishek Sarkar (2015)

Zhijuan Li (2017-2018)
Tong Liu (2018-2019)
Yiwen Dong (2018-2019)
Jaewon Saw (2020-2021)

Former Undergraduate Students Supervised (with publications)

Jaelen Sobers (2023)
Esther Filipek (2022)
Jenny Levitt (2019-2021)
Kei Tomozawa (2019-2021)
Samuel Cortes (2012-2013)

Visiting Scholars Hosted

Lukas Bodenmann (2022)
Adam Zsarnóczay (2017-2018)
Elena Ongaretto (2017)
Ethan Thompson (2016-2017)
Marcello Bianchini (2006-2008)

External PhD students advised

Nicole Paul (University College London), Co-Advisor
Jared DeBock (CU Boulder), PhD Thesis Committee
Camilo Gomez (University de los Andes), PhD Thesis Committee
Vahid Valamanesh (Northeastern University), PhD Thesis Committee
Mauricio Reyes Canales (University of Alberta), PhD Thesis Committee
Lukas Bodenmann (ETH Zurich), PhD Thesis Committee
Jorge Mario Lozano (Georgia Tech), PhD Thesis Committee
Nicole Paul (University College London), PhD Thesis Committee

High School Summer Interns Advised

Joshua Salas, 2009
Jessica Jacobo, 2012
Jorenne Flores, 2013
Jeltsin Obregon, 2017

SYNERGISTIC ACTIVITIES

- Member of the NHERI DesignSafe Advisory Board, 2023-present.
- Member of the Building Seismic Safety Committee (BSSC) Provisions Update Committee (PUC) to select design hazard levels for functional recovery performance objectives of new buildings, 2022-2024.
- Steering Committee member for the U.S. Geological Survey National Seismic Hazard Model Program, 2020-present.

- Member of the Natural Hazards Engineering Research Infrastructure Computational Modeling and Simulation Center (NHERI SimCenter) Socio-Economic Impacts Working Group and Regional Risk Working Group, 2021-present.
- Domain Expert and Faculty Advisor for the Natural Hazards Engineering Research Infrastructure Computational Modeling and Simulation Center (NHERI SimCenter), 2018-present.
- Director, Stanford Urban Resilience Initiative, 2016-present.
- Member of the International Scientific Advisory Panel for QuakeCoRE Center for Earthquake Engineering Resilience, 2017-present.
- Member of the Board of Directors, and Treasurer, for the Civil Engineering Risk and Reliability Association (CERRA), 2015-present.
- Co-director of the Stanford Center for Induced and Triggered Seismicity, 2013-present.
- Instructor, Stanford Center for Professional Development course on Enterprise Risk Management, 2022
- Member of SOMPO Energy Resilience Study Group, 2020-2022.
- Research Committee member, Pacific Earthquake Engineering Research Center, 2017-2019.
- Member of the Building Seismic Safety Council (BSSC) 2020 National Earthquake Hazard Reduction Program (NEHRP) Provisions Update Committee. Member of Issue Team 1—Seismic Performance Objectives, 2016-2018.
- Member of SCEC Committee on Utilization of Ground Motion Simulations (UGMS), organized to develop long-period response spectral acceleration maps for Los Angeles region for inclusion in NEHRP and ASCE 7 Seismic Provisions and in Los Angeles City Building Code, 2013-2021.
- Member of the Technical Committee on Life-Cycle Performance, Cost and Optimization, within the International Association for Structural Safety and Reliability, 2013-2016.
- Member of the Building Seismic Safety Council Issue Team 4, Evaluation of the Current Response History Analysis Procedures (ASCE 7 Chapter 16), 2011-2014.
- Member of the Southern California Earthquake Center's Planning Committee, as chair of the Earthquake Engineering Implementation Interface focus group, 2011-2018.
- Global Ground Motion Prediction Equations (GMPE) Program team member for the Global Earthquake Model (GEM) initiative—chair of task group for inclusion of near-fault effects, 2010-2012.
- Member of the ASCE Task Group on Risk Assessment of Structural Infrastructure Facilities and Risk-Based Decision Making (part of the Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems), 2009-2015.
- Host of the JCSS Second Workshop on Structural Robustness, Stanford University, October 26-27, 2008.

- Member of the Executive Committee for the Extreme Ground Motions Project (a Department of Energy research program to identify limits on ground motions to constrain seismic risk at the Yucca Mountain Nuclear Waste Repository), 2008-2010.
- Host and Chair of the Special Workshop on Risk Acceptance and Risk Communication, Stanford University, March 26-27, 2007. www.ripid.ethz.ch.
- Validation team member for Applied Technology Council project ATC-58, "Next-Generation Performance-Based Seismic Design Guidelines for New and Existing Buildings."
- Technical Advisory Committee member for the Pacific Earthquake Engineering Research (PEER) center's Ground Motion Selection and Modification Program, 2006-2012.
- Project team member, Design Ground Motion Library (DGML), 2006-2007.

PROFESSIONAL MEMBERSHIPS

- American Society of Civil Engineers (ASCE)
    - Ang Award Committee, 2021-2022
- Consortium of Universities for Research in Earthquake Engineering (CUREE)
    - Member of Board of Directors, 2011-2012.
    - Member of Executive Committee, 2012
- Earthquake Engineering Research Institute (EERI)
    - Editor in Chief, Earthquake Spectra, 2023-present
    - Editor, Earthquake Spectra, 2018-2022
    - Associate Editor, Earthquake Spectra, 2013-2018
    - Shah Family Innovation Prize Selection Committee, 2015-2021
- Joint Committee on Structural Safety (JCSS)
- Civil Engineering Risk and Reliability Association
    - Member of Board of Directors, 2015-present
    - Treasurer, 2015-present
- Pacific Earthquake Engineering Research (PEER) Center
    - Member of Research Committee, 2017-2019
- Seismological Society of America (SSA)
    - Associate Editor, Bulletin of the Seismological Society of America, 2008-2013.
- Southern California Earthquake Center (SCEC)
    - Member of Planning Committee, 2011-2019

UNIVERSITY AND DEPARTMENTAL SERVICE

- Associate Dean for Faculty Affairs, Doerr School of Sustainability, 2022-present
- Search committee member for the inaugural Director of the Stanford Sustainable Societies Institute, 2024
- Member of Faculty Senate, 2023-present
- Faculty Co-director of the Stanford Doerr School of Sustainability faculty mentoring program, 2023-present
- Faculty Advisor for the Doerr School & Naval Postgraduate School Climate Security Fellows program
- Member of Civil and Environmental Engineering PhD admissions committee, 2023-2024
- Member of Civil and Environmental Engineering ad hoc committee to devise a CEE PhD cohort experience, 2023
- Member of the HAI AI + Sustainability working group, 2023
- VPDoR Limited Submissions Faculty Review Committee, 2022-2023
- Structural Engineering and Geomechanics Program Coordinator, 2016-2022
- Member of Stanford WorkLife Office's Dependent Care Working Group, 2022-2023
- Member of graduate curriculum committee, CEE, 2022-present
- Tenure committee member, Haeyoung Noh, 2021-2022
- Search committee member for the inaugural Dean of the Stanford Doerr School of Sustainability, 2021-2022
- Substitute search committee member, CEE department faculty search, 2022
- Chair of promotion committee for Mike Lepech, 2020-2021
- Faculty mentor for Prof. Haeyoung Noh, 2020-present
- Member of the Board of Trustees Committee on Land and Buildings, 2018-2020.
- Reappointment committee member, Catherine Gorle, 2019-2020
- Member of CEE Website committee, 2018-2020
- Member of the Child Care Working Group (CCWG), under the Affordability Task Force (ATF) of the Stanford Long-Range Planning process, 2018-2021
- Appointment committee member for Haeyoung Noh's appointment to Associate Professor (Untenured), 2018-2019
- Board of Directors, Children's Center of the Stanford Community, 2017- 2019
    - President of the Board, 2017-2018
    - Secretary and member of the Executive Committee, 2018-2019
- Promotion committee member for Christian Linder, 2017-2018
- Pre-Major Advisor, 2016-2019
- Member of CEE Undergraduate Curriculum Committee, 2012-2014

- Coordinator of CEE 298 seminar series, 2012-present
- Member of Civil & Environmental Engineering department faculty search committee, 2009-2010.
- Co-host of Stanford Center for Teaching and Learning's Science and Engineering Teaching Lunch series, 2009-2010.
- Subject matter expert regarding seismic risk to the Stanford campus, including meetings with the Chief Financial Officer, Office of Emergency Management, and Stanford's seismic risk consultants, 2008-present.
- Faculty advisor for the Stanford Chapter of the American Society of Civil Engineers (ASCE), 2007-2010.
- Coordinator of Structural Engineering and Geomechanics group PhD admissions, 2007-2009.

ACADEMIC SERVICE

- Editor in Chief, Earthquake Spectra, 2022-present
- Editor, Earthquake Spectra, 2018-2022
- Associate Editor for:
    - Earthquake Engineering and Structural Dynamics, 2016-present
    - Structural Safety, 2017- present
    - Earthquake Spectra, 2013-2018
    - Bulletin of the Seismological Society of America, 2008-2013.
    - Earthquakes and Structures, 2010-2013.
- Volunteer advisor of first-generation college students, via ScholarMatch, 2022-2023
- Speaker and workshop host to train students and young professionals in writing and professional skills
    - "Thoughts on Writing," Oregon State University Civil and Construction Engineering's Write Club, March 2020.
    - "Technical Writing Skills," Earthquake Engineering Research Institute Younger Members Forum, December 2020.
    - "Getting Published, with a focus on Earthquake Spectra," Earthquake Engineering Research Institute, February 2021.
    - "Transitioning from Graduate Studies to Securing Faculty Positions," Canadian Society for Civil Engineering, May 2021.
    - "Designing and Delivering an Effective Lecture," Stanford University Civil and Environmental Engineering graduate student pedagogy training, October 2021.
    - "Effective Writing Workshop," Earthquake Engineering Research Institute Younger Members Forum, July 2022.

  - "Getting Published in Earthquake Spectra," Earthquake Engineering Research Institute, October 2022.
  - "Effective Technical Presentations and Visual Communication Workshop," Earthquake Engineering Research Institute Younger Members Forum, April 2023.
  - "Academic Publishing Workshop," NHERI Graduate Student Council, June 2023.
  - "Research overview and academic advice," Stanford summer undergraduate intern programs (SUPER, MUIR, CEE), July 2023
  - "Working with your advisor," Stanford CEE 379, Intro to the PhD, October 2023.
  - "What I like and don't like about being a professor," Stanford Doerr School of Sustainability Pro Seminar, October 2023.
  - "Reflections on my career path," QuakeCoRE Young Investigators Program, December 2023.
- Research Committee Member, Pacific Earthquake Engineering Research Center, 2017-2019
- Proposal reviewer for:
  - Austrian Science Fund
  - EERI/FEMA NEHRP Graduate Research Fellowship
  - Isreali Ministry of Science, Technology and Space
  - Louisiana Board of Regents' University Seed Funding Proposals
  - Mitacs Accelerate program, Canada
  - National Science Foundation
  - New Zealand Earthquake Commission
  - Pacific Earthquake Engineering Research (PEER) Center Transportation Systems Research Program
  - Research Grant Council (RGC) of Hong Kong
  - Royal Society Newton International Fellowships
  - Southern California Earthquake Center
- Paper reviewer for
  - Acta Geotechnica
  - AGU Advances
  - ASCE Journal of Geotechnical and Geoenvironmental Engineering
  - ASCE Journal of Structural Engineering
  - ASCE Practice Periodical on Structural Design and Construction (recognized as 2019 Outstanding Reviewer)
  - ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering

- Bulletin of Earthquake Engineering
- Bulletin of the New Zealand Society for Earthquake Engineering
- Bulletin of the Seismological Society of America
- Canadian Geotechnical Journal
- Civil Engineering and Environmental Systems
- Computer-Aided Civil and Infrastructure Engineering
- Computers & Geosciences
- Earthquake Engineering and Structural Dynamics
- Earthquake Engineering and Engineering Vibration
- Earthquake Spectra
- Geophysical Journal International
- Geophysical Research Letters
- Georisk
- International Journal of Disaster Risk Reduction
- Journal of Bridge Engineering
- Journal of Geophysical Research - Solid Earth
- Journal of Earthquake Engineering
- Journal of Engineering Mechanics
- Journal of Infrastructure Systems
- Journal of Performance of Constructed Facilities
- Journal of Seismology
- Journal of Southwest Jiaotong University
- Materials and Structures
- Natural Hazards Review
- Nature Communications
- Nonlinear Dynamics
- npj Urban Sustainability
- Nuclear Engineering and Design
- Probabilistic Engineering Mechanics
- Risk Analysis
- Scientific Reports
- Seismological Research Letters
- Soil Dynamics and Earthquake Engineering
- Structural Engineering and Mechanics

  - Structural Engineering International
  - Structural Safety
  - Sustainable and Resilient Infrastructure
  - Terrestrial Atmospheric and Oceanic Sciences Journal
- Conference committee member for:
  - 14th International Conference on Structural Safety and Reliability (ICOSSAR'25), Los Angeles, 2025.
  - Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2025), Rhodes Island, Greece, 2025.
  - World Conference on Earthquake Engineering, Milan, 2024
  - Advancing Sustainable Urban Infrastructure Workshop, Stanford Graduate School of Business and Doerr School of Sustainability, 2023
  - Earthquake Engineering Research Institute Annual Meeting, San Francisco, 2023
  - 14th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP14), 2023
  - ASCE Lifelines Conference (Lifelines2021) San Fernando Earthquake Conference – 50 years of Lifeline Engineering
  - 13th International Conference on Structural Safety and Reliability (ICOSSAR2021), Shanghai
  - 7th Asia-Pacific Symposium on Structural Reliability and Its Applications (APSSRA2020) Tokyo, 2020
  - 13th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP13), Seoul, 2019
  - 11th National Conference on Earthquake Engineering, Los Angeles, 2018
  - 16th World Conference on Earthquake Engineering, Santiago, 2017
  - 10th Pacific Conference on Earthquake Engineering, Sydney, 2015
  - Engineering Mechanics Institute Conference, 2015
  - 10th National Conference on Earthquake Engineering, Anchorage, 2014
  - 4th IASPEI/IAEE International Symposium on the Effects of Surface Geology on Seismic Motion, Santa Barbara, 2011
  - First World Congress on Advances in Structural Engineering and Mechanics (ASEM'11), Seoul, 2011
  - 3rd International Symposium on Geotechnical Safety and Risk (ISGSR-2011), Munich, 2011
  - 10th International Conference on Structural Safety and Reliability (ICOSSAR2009), Osaka, 2009
  - Special Workshop and Risk Acceptance and Risk Communication, Stanford, 2007

TEACHING EXPERIENCE

Teaching scores are out of 5.0, with mean scores in the university near 4.0.

Course #	*Title*	*Term*	*Enroll.*	*Amt. Lrn.*	*Inst. Qual.*
CEE 203	Probabilistic Models for CEE	Aut 2006	32		
CEE 101A	Mechanics of Materials	Win 2007	25		
CEE 203	Probabilistic Models for CEE	Aut 2007	29		
CEE 101A	Mechanics of Materials	Win 2008	34		
CEE 204	Structural Reliability	Spr 2008	19		
CEE 203	Probabilistic Models for CEE	Aut 2008	40		
CEE 101A	Mechanics of Materials	Win 2009	41		
CEE 289	Random Vibrations	Spr 2009	10		
CEE 203	Probabilistic Models for CEE	Aut 2009	68		
CEE 101A	Mechanics of Materials	Win 2010	42		
CEE 204	Structural Reliability	Spr 2010	34		
CEE 203	Probabilistic Models for CEE	Aut 2010	53		
CEE 101A	Mechanics of Materials	Win 2011	35		
CEE 289	Random Vibrations	Spr 2011	14		
CEE 101A	Mechanics of Materials	Win 2012	39		
CEE 204	Structural Reliability	Spr 2012	39		
CEE 203	Probabilistic Models for CEE	Aut 2012	46		
CEE 101A	Mechanics of Materials	Win 2013	39		
CEE 298	SEG Seminar	Win 2013	66		
CEE 289	Random Vibrations	Spr 2013	15		
CEE 203	Probabilistic Models for CEE	Aut 2013	51		
CEE 29N	Managing Natural Disaster Risk	Win 2014	7		
CEE 298	SEG Seminar	Win 2014	65		
CEE 203	Probabilistic Models for CEE	Aut 2014	50		
CEE 29N	Managing Natural Disaster Risk	Win 2015	6		
CEE 298	SEG Seminar	Win 2015	67		
CEE 204	Structural Reliability	Spr 2015	20		
ENEQ601	Risk Management (U of Canterbury)	Fall 2015	28		
ENEQ610	Engineering Seismology (U of Cant.)	Fall 2015	37		
CEE 203	Probabilistic Models for CEE	Aut 2016	44		
CEE 29N	Managing Natural Disaster Risk	Win 2017	6		
CEE 204	Structural Reliability	Spr 2017	25		
CEE 203	Probabilistic Models for CEE	Aut 2017	59		
CEE 181	Design of Steel Structures	Aut 2017	11		
CEE 298	SEG Seminar	Win 2018	79	3.9	4.3
CEE 289	Random Vibrations	Spr 2018	19	4.6	4.7
CEE 203	Probabilistic Models for CEE	Aut 2018	44	4.3	4.8
CEE 181	Design of Steel Structures	Aut 2018	8	4.8	4.8
CEE 204	Structural Reliability	Win 2019	18	4.6	4.6

CEE 298	SEG Seminar	Win 2019	44	4.0	4.2
CEE 203	Probabilistic Models for CEE	Aut 2019	44	4.5	4.8
CEE 181	Design of Steel Structures	Aut 2019	12	4.4	4.7
CEE 289	Random Vibrations	Win 2020	11	-	-
CEE 298	SEG Seminar	Win 2020	50	-	-
CEE 203	Probabilistic Models for CEE	Aut 2020	38	4.5	4.7
CEE 204	Structural Reliability	Win 2021	13	4.6	4.8
CEE 298	SEG Seminar	Win 2021	47	4.2	4.7
CEE 203	Probabilistic Models for CEE	Aut 2021	65	4.4	4.7
CEE 289	Random Vibrations	Win 2022	11	4.8	4.9
CEE 298	SEG Seminar	Win 2022	50	4.2	4.2
CEE 296	Regional Seismic Risk Analysis	Spr 2022	12	4.2	4.3
CEE 203	Probabilistic Models for CEE	Aut 2022	79	4.5	4.6
CEE 209S	Disaster Resilience Seminar	Aut 2022	21	3.7	4.1
CEE 288	Seismic Hazard and Risk	Win 2023	36	4.8	4.7
CEE 298	SEG Seminar	Win 2023	58	4.0	4.4
CEE 203	Probabilistic Models for CEE	Aut 2023	61	4.5	4.7

PLENARY AND KEYNOTE LECTURES

"Engineering models to support regional disaster resilience assessment," *The 4th International Forum of NFEES on the Latest Development of Resilient City*. Tianjin, China. December 2023.

"Engineering models to support regional disaster resilience assessment," Te Hiranga Rū *QuakeCoRE Annual Meeting Distinguished Lecture*, Napier, New Zealand, August 2023.

"Recent advances in ground motion selection for seismic analysis," *9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering Plenary Lecture*, Athens, Greece, June 2023.

"Spatial correlation in ground motion intensities: Measurement, prediction, and seismic risk implications," *Seismological Society of America Annual Meeting Joyner Lecture*, San Juan, Puerto Rico, April 2023.

"Spatial correlation in ground motion intensities: Measurement, prediction, and seismic risk implications," *Earthquake Engineering Research Institute Annual Meeting Joyner Lecture*, San Francisco, April 2023.

"Performance-based engineering for simulation of regional post-earthquake recovery and resilience," *International Conference on Materials, Mechanics and Structures 2022 (ICMMS 2022)*.

"Engineering disaster-resilient systems in an uncertain future," *University of Michigan's Building the Future Distinguished Lecture Series*, April 2021.

"Advances in simulating post-earthquake recovery for performance-based engineering and resilience," *Plenary lecture at the Pacific Earthquake Engineering Research Center Annual Meeting*, Berkeley, January 2020.

"Advances in simulating post-earthquake recovery for performance-based engineering and resilience," *Keynote lecture at the Society for Earthquake and Civil Engineering Dynamics 2019 Conference*, London, September 2019.

"Performance-based earthquake engineering for transportation networks," *Theme Session lecture at the 10th National Conference on Earthquake Engineering*, Los Angeles, June 2018.

"Incorporating induced seismicity source models and ground motion predictions to forecast dynamic regional risk," *Keynote lecture at Geotechnical Earthquake Engineering and Soil Dynamics V*, Austin, June 2018.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *Plenary lecture at the 2018 PEER Annual Meeting*, Berkeley, January 2018.

"Unlocking value in earthquake resilience," *Plenary lecture at the Strengthening our Cities SEAOSC Summit*, Los Angeles, November 2017.

"Characterization of spatial correlations in ground motions—insights from physics-based simulations," *Keynote lecture at the Southern California Earthquake Center Annual Meeting*. Palm Springs, California. August 2017.

"Quantifying seismic risk to transportation networks: user impacts and at-risk communities," *New Zealand Society for Earthquake Engineering Traveling Lectureship*, talks given in Auckland, Wellington and Christchurch, New Zealand, 2015-2016.

"Ground motion selection for performance-based engineering, and the Conditional Mean Spectrum as a selection tool," *Plenary lecture at 10th Pacific Conference on Earthquake Engineering*, Sydney, Australia, October 2015.

"Quantifying seismic risk to transportation networks: user impacts and at-risk communities," IBK Kolloquium lecture at the Swiss Federal Institute of Technology, Zurich. March 2015.

"Recent progress in seismic hazard analysis and ground motion selection," *Plenary lecture at 2011 Pacific Earthquake Engineering Research Center*, Berkeley, California, October 2011.

"Effects of earthquake source geometry and site conditions on spatial correlation of earthquake ground motion hazard." *Keynote lecture at 4th IASPEI/IAEE*

International Symposium on Effects of Surface Geology on Seismic Motion, Santa Barbara, California, August 2011.

"An overview of the Conditional Mean Spectrum," *Keynote lecture at the 2010 COSMOS Technical Session*. San Francisco, California. October 2010.

"Active Region Time History Selection/Generation Approaches." *Keynote lecture at the Association of Environmental & Engineering Geologists Shlemon Specialty Conference.* Memphis, Tennessee. June 2009.

"Engineering use of ground motions: Challenges and opportunities." *Keynote lecture at the Southern California Earthquake Center Annual Meeting*. Palm Springs, California. August 2008.

OTHER INVITED LECTURES AND SEMINARS

"Engineering disaster-resilient systems in an uncertain future," Stanford Doerr School of Sustainability Faculty Forum. November 2023.

"Engineering disaster-resilient systems in an uncertain future," Sandia National Laboratories Bay Area Strategic Engagement Seminars (BASES), May 2023.

"Spatial correlation in ground motion intensities: Measurement, prediction, and implications," University of California, San Diego, February 2023.

"Physics-based ground motion simulations as a tool for earthquake engineering," University of Nevada, Reno. April 2022.

"A model for predicting response spectra while considering near-fault pulse-like motions," U.S. Geological Survey National Seismic Hazard Mapping Project workshop on Seismic Directivity. October 2021 (Virtual).

"Simulation of Post-Earthquake Recovery to Design Enhanced Resilience," Texas A&M University Department of Civil and Environmental Engineering, October 2021 (Virtual).

"Transitioning from Graduate Studies to Securing Faculty Positions" Canadian Society of Civil Engineers Annual Meeting student committee session. May 2021 (Virtual).

"Simulation of post-earthquake recovery for performance-based engineering and resilience" University of Southern California Department of Civil and Environmental Engineering, March 2021. (Virtual)

"Getting Published, with a focus on Earthquake Spectra" 2021 Earthquake Engineering Research Institute Annual Meeting, March 2021 (Virtual).

"Guidance on utilization of simulations in engineering practice, and an example ground motion set" Consortium of Organizations for Strong Motion Observation Systems (COSMOS) Technical Session, January 2021 (Virtual).

"U.S. Practice of performance-based engineering and treatment of epistemic uncertainty" Offshore Structures Reliability Conference. Delft University, the Netherlands, November 2020. (Virtual)

"Advances in simulation of post-earthquake recovery for performance-based engineering and resilience" Pennsylvania State University Department of Civil and Environmental Engineering, November 2020. (Virtual)

"Advice for productive academic writing" Oregon State University Department of Civil and Construction Engineering, March 2020. (Virtual)

"Selection of simulated CyberShake time series for engineering building code analyses" *National Earthquake Conference*, San Diego, March 2020.

"Advances in simulation of post-earthquake recovery for performance-based engineering and resilience" *UCLA EERI-SEAOSC Distinguished Speaker Series*, University of California, Los Angeles, February 2020.

"Consideration of network effects in identifying critical components of transportation infrastructure," *US Geological Survey's Geologic Hazards Science Seminar Series*, Golden, CO, September 2019.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *Johns Hopkins University*, Baltimore, April 2019.

"Use of ground motion simulations in engineering practice," *US Geological Survey Earthquake Science Seminar*, Menlo Park, CA, February 2019.

"Incorporating Induced Seismicity Source Models and Ground Motion Predictions to Forecast Dynamic Regional Risk," *University of California, Davis Geotechnical Graduate Student Society Seminar*, Davis, CA, January 2019.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *ASCE Los Angeles and Orange County Geo-Institute*, Los Angeles, December 2018.

"Ground motion selection for performance-based engineering, and the Conditional Mean Spectrum as a selection tool," *AECOM International Seismic Hazards Workshop*, Los Angeles, December 2018.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *University of Illinois, Urbana-Champaign*, Champaign, December 2017.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *Case Western Reserve University*, Cleveland, November 2017.

"Ground motion selection for performance-based engineering," *University of California San Diego*, San Diego, June 2015.

"Introduction to Probabilistic Seismic Hazard Analysis," *Short course for Stanford Center for Induced and Triggered Seismicity Affiliates*, Stanford, May 2015.

"Ground Motion Simulations: Validation and Application for Civil Engineering Problems," *SMIP14 Seminar on Utilization of Strong Motion Data*, Berkeley, October 2014.

"Ground motion selection for performance-based engineering," *University of California Los Angeles*, Los Angeles, May 2014.

"Ground motion selection for performance-based engineering, and the Conditional Mean Spectrum as a selection tool," *Structural Engineers Association of Northern California' Continuing Education and Sustainable Design Committees seminar*, San Francisco, May 2014.

"Characterization of ground motions for assessing seismic risk to infrastructure," *California Institute of Technology*, Pasadena, April 2013.

"Building code use of ground motions, and the role of simulations," Invited Presentation at the Seismological Society of America Annual Meeting, Salt Lake City, Utah. April 2013.

"Introduction to the conditional mean spectrum," *Structural Engineers Association of Northern California Seismology Ground Motions Subcommittee,* San Francisco, June, 2012.

"Characterization of ground motions for seismic evaluation," *Centre for Energy Advancement through Technological Innovation (CEATI) Seismic Hazard and Risk Workshop for Hydropower Projects*, San Francisco, May, 2012.

"Ground motion selection for structural analysis: current practice and future directions," *University at Buffalo Earthquake Engineering Research Seminar,* Buffalo, December, 2011.

"Ground motion selection for structural analysis: current practice and future directions," *Structural Engineers Association of Northern California Seismology Committee,* San Francisco, May, 2011.

"Using precarious rocks to compute points in hazard space and update seismic hazard analysis logic tree weights," *Workshop on the Applications of Precarious Rocks and Related Fragile Geological Features to US National Hazard Maps*, Reno, October, 2010.

"Innovations in seismic hazard and ground motion selection for risk analysis calculations," *CUREE-Kajima Phase IIV final project meeting*, Tokyo, October 2010.

"Ground motions for the PEER Transportation Systems Research Program," *PEER Annual Meeting*, San Francisco, October 2010

"Ground Plotting unexceeded ground motions: improved methodology and consideration of time dependent fragilities." *Southern California Earthquake Center workshop on Extreme Ground Motions,* September, 2010.

"Ground motion selection for structural analysis: current practice and future directions," *University of Washington Civil and Environmental Engineering Department Seminar,* Seattle, August, 2010.

"Spatial correlation of strong ground motion intensities: Measurement and implications for engineering applications." *Northwestern University, Civil and Environmental Engineering Department Seminar Series,* May, 2010.

"Signal processing and probabilistic seismic hazard analysis tools for characterizing near-fault directivity." *University of California, Berkeley, Reliability Seminar*. April, 2010.

"Refinements to the Conditional Mean Spectrum concept, to link seismic hazard and dynamic structural analysis." *U.S. Geological Survey Seminar.* Golden, Colorado. February 2010.

"Spatial correlation of strong ground motion intensities: Measurement and implications for engineering applications." *U.S. Geological Survey Seminar.* Golden, Colorado. February 2010.

"Spatial correlation of strong ground motion intensities: Measurement and implications for engineering applications." *University of Colorado, Boulder, Civil Environmental and Architectural Engineering Department Seminar,* February, 2010.

"Spatial correlation of strong ground motion intensities: Measurement and implications for engineering applications." *Georgia Institute of Technology, Civil and Environmental Engineering Department Seminar Series,* November, 2009.

"Spatial correlation of strong ground motion intensities: Measurement and implications for engineering applications." *University of Southern California, Civil and Environmental Engineering Department Seminar.* Los Angeles, California. October, 2009.

"Characterizing seismic hazard to distributed systems using efficient simulation techniques." *Pacific Earthquake Engineering Research Center Transportation Networks Workshop.* Berkeley, California. March 2009.

"Efficient techniques for seismic risk assessment of lifelines, considering spatial correlation of strong ground motion intensities." *U.S. Geological Survey Earthquake Seminar Series.* Menlo Park, California. February 2009.

"Ground motions and intensity measures as a link between seismology and engineering." *Stanford University, Department of Geophysics*. June, 2007.

"Ground motions and intensity measures for performance-based earthquake engineering" *University of California, Berkeley, Structural Engineering Mechanics and Materials Seminar*. April, 2008.

"Risk-based assessment of robustness: what can it do and what can't it do?" *Invited lecture at the European Union Robustness of Structures, 1st Workshop (COST Action TU601).* ETH Zurich, Switzerland. February, 2008.

"Ground motions and intensity measures as a link between seismology and engineering." *California Institute of Technology*. October, 2007.

"Breaking the Uniform Hazard Spectrum into component events: The effect of epsilon on response spectra and structural response." *2006 COSMOS Technical Workshop*. Berkeley, California. November 2006.

"Record selection and scaling using the conditional mean spectrum." *First workshop on ground motion selection and modification (GMSM) for nonlinear analysis*. Berkeley, California. October 2006.

"An overview of Probabilistic Seismic Hazard Analysis." *Swiss Federal Institute of Technology, Zurich*. March, 2006.

"Improved ground motion intensity measures for prediction of structural response." *Swiss Federal Institute of Technology, Zurich*. November, 2005.

"An improved vector-valued intensity measure for prediction of seismic response." *University of Illinois at Urbana-Champaign*. March, 2005.

"An improved vector-valued intensity measure for prediction of seismic response." *University of Minnesota.* March, 2005

"An improved vector-valued intensity measure for prediction of seismic response." *University of Michigan.* November, 2004

"Intensity measures and structural response." *Natural Hazards Mitigation in Japan Research Symposium, Tokyo Institute of Technology*. June, 2004.

OTHER PRESENTATIONS AT CONFERENCES AND SYMPOSIA (SINCE 2018, INCLUDING CO-AUTHORED PRESENTATIONS)

"Deep-learning-based seismic risk assessment and retrofitting of road networks," Pacific Earthquake Engineering Research Center Annual Meeting, 2023.

"Assessing Urban Post-Earthquake Community Recovery to Inform Pre-Disaster Planning," 2023 NIST-NSF Disaster Resilience Research Symposium, 2023.

"Using engineering models to compare social impacts of multiple hazards," 2023 Natural Hazards Center Researchers Meeting, 2023.

"Spatial correlation in ground motion intensities: Measurement, prediction, and seismic risk implications," 49th Risk, Hazard and Uncertainty Workshop, 2023.

“Participatory Scenario-based Approaches for Addressing Risk in Multi-hazard Contexts,” American Geophysical Union Fall Meeting, 2023.

“Functional recovery of tall buildings with pre-Northridge welded steel moment frames,” Pacific Conference on Earthquake Engineering, 2023.

"Combining Climate Change driven Sea Level Rise and Multi-hazard Impacts on the Built Environment," 2022 American Geophysical Union Fall Meeting

"Coastal Multi-hazard Workflow considering Sea Level Rise and various Impact Metrics," 2022 American Geophysical Union Fall Meeting**.**

"Improving Scenario Effectiveness in Motivating Mitigation for Geologic Hazards." 2022 American Geophysical Union Fall Meeting.

"Occurrence and Impacts of Atmospheric River Sequences in Present and Future Climates," International Atmospheric River Conference 2022.

"Deep learning-based retrofitting and seismic risk assessment of road networks," 2022 PEER Researchers' Workshop.

"Deep learning-based retrofitting and seismic risk assessment of road networks," 4th Kenji Ishihara Colloquium Series on Earthquake Engineering.

“Disaster resilience of infrastructure systems,” 43rd International Association for Energy Economics International Conference.

"Deducing Current Individual Household Income From Publicly Available Data," 2022 Natural Hazards Center Researchers Meeting.

"Modeling Rental Unit-Landlord Dependency for Post-Disaster Recovery," 2022 Natural Hazards Center Researchers Meeting.

"Combining Multi-Hazard Coastal Impacts Due to Climate Change," 2022 Natural Hazards Center Researchers Meeting.

"Future directions in earthquake risk assessment: High-fidelity optimization," Seismic Moment: From Rupture to Recovery symposium, 2022.

“Guidance on utilization of simulations in engineering practice, and an example ground motion set” Consortium of Organizations for Strong Motion Observation Systems (COSMOS) Technical Session, January 2021.

“Getting published in Earthquake Spectra” 2021 Earthquake Engineering Research Institute Annual Meeting, March 2021.

“Transitioning from Graduate Studies to Securing Faculty Positions” Canadian Society of Civil Engineers Annual Meeting student committee session. May 2021.

"Spatial correlations in CyberShake ground motion simulations: Validation and estimation of non-stationarities" Jack Baker and Yilin Chen. 2021 PEER International Pacific Rim Forum. June 2021.

"A model for predicting response spectra while considering near-fault pulse-like motions," U.S. Geological Survey National Seismic Hazard Mapping Project workshop on Seismic Directivity. October 2021.

“Getting Published, with a focus on Earthquake Spectra” 2021 Earthquake Engineering Research Institute Annual Meeting, March 2021.

"Differential household recovery: the factors not accounted for by a damage-based earthquake reconstruction policy and the disparate long-term results," Earthquake Engineering Research Institute Annual Meeting, 2021.

"Integrating Place Satisfaction into Housing Recovery Simulations," Natural Hazards Center Researchers Meeting. 2021.

"Contributors to Long-Term Recovery in Nepal: A Longitudinal Study Over Five Years," Natural Hazards Center Researchers Meeting. 2021.

"Deep-Learning Based Seismic Risk Assessment of Road Networks" PEER Researchers' Workshop. 2021.

“A Performance-Based Approach to Quantifying Atmospheric River Flood Risk in Northern California,” AGU Fall meeting, 2021.

“Using hypocenter-mapped fault structures for regional seismic risk analysis: A case study of Oklahoma County,” AGU Fall meeting, 2021.

"Selection of simulated CyberShake time series for engineering building code analyses" National Earthquake Conference, San Diego, March 2020.

"Assessing the Safety of Tall Pre-Northridge Steel Frame Buildings and Implications on Post-Earthquake Cordoning and Recovery," National Earthquake Conference, San Diego, March 2020.

"U.S. Practice of performance-based engineering and treatment of epistemic uncertainty" Offshore Structures Reliability Conference. Delft University, the Netherlands, November 2020. (Virtual)

"Selection of CyberShake Simulated Ground Motion Time Series for Engineering Analysis (invited presentation)" 2020 American Geophysical Union Fall Meeting (Virtual).

"Identifying Key Damage Drivers of Atmospheric River-Induced Flooding in Northern California" 2020 American Geophysical Union Fall Meeting (Virtual).

"Climate change and management decisions could transfer flood risk to socioeconomically disadvantaged communities along the San Francisquito Creek, California" 2020 American Geophysical Union Fall Meeting (Virtual).

"Short-Term Probabilistic Hazard Assessment in Regions of Induced Seismicity" 2020 American Geophysical Union Fall Meeting (Virtual).

"Consideration of network effects in identifying critical components of transportation infrastructure," *US Geological Survey's Geologic Hazards Science Seminar Series*, Golden, CO, September 2019.

"Use of ground motion simulations in engineering practice," *US Geological Survey Earthquake Science Seminar*, Menlo Park, CA, February 2019.

"Short-term probabilistic hazard assessment in regions of induced seismicity" at the SPE/SEG workshop, Injection Induced Seismicity – The Next Chapter, 2019.

"The Cascading Consequences of Sea Level Rise: Evaluating Flood-Induced Commute Disruption in the San Francisco Bay Area" at the 2019 Natural Hazards Workshop and Researchers Meeting.

"Data integration framework to rapidly estimate post-disaster damage for response and recovery planning" at the 2019 Natural Hazards Workshop and Researchers Meeting.

"Compound flood risk in the south San Francisco Bay: A city manager's worst nightmare," at the Workshop on Correlated Extremes organized by Columbia University's Initiative on Extreme Weather and Climate.

"Learning to Manage Bridges Subject to Seismic Hazard Using a Deep Q-network" at the 2019 Pacific Earthquake Engineering Research Center Annual Meeting.

"Modeling Bay Area Transportation Network Resilience" at the 2019 Pacific Earthquake Engineering Research Center Annual Meeting.

"Modeling Bay Area transportation network resilience" *PEER Researchers' Workshop*. University of California, Berkeley. August 2018.

"Quantifying seismic risk to transportation networks: user impacts and at-risk communities." Blume Center/SURI Affiliates and Alumni Meeting. 2018.

"Stochastic Optimization for Maintenance Decisions in Transportation Networks under Seismic Hazard" *INFORMS Annual Meeting.* San Francisco. 2018.

"Build human capacity through formal education, direct experience, and learning from others." *Hoover Institution workshop, Ready for Tomorrow: Achieving Climate-Resilient Infrastructure*. 2018.

"Quantifying Seismic Risk to Transportation Networks: User Impacts and At-Risk Communities," *ASCE Los Angeles and Orange County Geo-Institute*, 2018.

"Ground motion selection for performance-based engineering, and the Conditional Mean Spectrum as a selection tool," *AECOM International Seismic Hazards Workshop*, 2018.

"Spatial Integration of Modeled, Remotely-sensed, and Field Surveyed Building Damage Data to Support Post-Earthquake Response and Recovery Decisions." *AGU Annual Meeting*, 2018.

"Rethinking return levels: Towards a meaningful assessment of flood risk in a changing climate." AGU Annual Meeting, 2018.

When Floods Hit the Road: Commute Disruption due to Coastal Flooding and Sea Level Rise in the San Francisco Bay Area." AGU Annual Meeting, 2018.

PUBLICATIONS (STUDENT NAMES IN BOLD, POSTDOC NAMES IN ITALICS)

Google Scholar: https://scholar.google.com/citations?user=im82jgIAAAAJ&hl

Typical authorship convention: for student-authored publications, the student is the first author, and the advisor is the last author. For other authorship positions or larger collaborative papers, authorship order denotes contribution level.

Archival Journal Publications

1. **Bodenmann, L.**, Baker, J. W., and Stojadinović, B. (2023). "Accounting for ground motion uncertainty in empirical seismic fragility modeling." engrxiv preprint.

2. **Bowers, C**., Serafin, K. A., and Baker, J. W. (2023). "Uncovering Drivers of Atmospheric River Flood Damage using Interpretable Machine Learning." Natural Hazards Review, (in press).

3. **Bowers, C.**, Serafin, K. A., and Baker, J. W. (2024). "Temporal compounding increases economic impacts of atmospheric rivers in California." *Science Advances*, 10(3), eadi7905.

4. **Mongold, E.**, *Costa, R.*, Zsarnóczay, Á., and Baker, J. W. (2024). "Modeling post-disaster recovery: Accounting for rental and multi-family housing." Earthquake Spectra, (in press).

5. **Hulsey, A. M., Galvis, F. A.**, Baker, J. W., and Deierlein, G. G. (2024). "Elevated collapse risk based on decaying aftershock hazard and damaged building fragilities." Earthquake Spectra, (in press).

6. **Paul, N.**, Galasso, C., and Baker, J. (2024). "Household Displacement and Return in Disasters: A Review." *Natural Hazards Review*, American Society of Civil Engineers, 25(1), 03123006.

7. **Bowers, C.**, *Serafin, K. A.*, Tseng, K.-C., and Baker, J. W. (2023). "Atmospheric River Sequences as Indicators of Hydrologic Hazard in Historical Reanalysis and GFDL SPEAR Future Climate Projections." *Earth's Future*, 11(12), e2023EF003536.

8. Baker, J. W., Almeter, E., Cook, D., Liel, A. B., and Haselton, C. (2023). "A model for partially dependent component damage fragilities in seismic risk analysis." *Earthquake Spectra*, 40(1), 609–628.

9. *Costa, R.*, and Baker, J. W. (2023). "A methodology to estimate postdisaster unmet housing needs using limited data: Application to the 2017 California wildfires." *Risk Analysis*, (in press).

10. Tarbali, K., Bradley, B. A., and Baker, J. W. (2023). "Effect of near-fault directivity pulses on ground-motion intensity measure correlations from the NGA-West2 data set." *Earthquake Spectra*, 39(4), 2263–2280.

11. **Issa, O.**, **Silva-Lopez, R.**, Baker, J. W., and Burton, H. V. (2023). "Machine-learning-based optimization framework to support recovery-based design." *Earthquake Engineering & Structural Dynamics*, 52(11), 3256–3280.

12. Burton, H. V., and Baker, J. W. (2023). "Evaluating the effectiveness of ground motion intensity measures through the lens of causal inference." *Earthquake Engineering & Structural Dynamics*, 52(15), 4842–4864.

13. **Silva Lopez, R.**, and Baker, J. W. (2023). "Optimal bridge retrofitting selection for seismic risk management using genetic algorithms and neural network-based surrogate models." *ASCE Journal of Infrastructure Systems*, 29(4), 04023030.

14. **Galvis, F. A.**, **Hulsey, A. M.**, Baker, J. W., and Deierlein, G. G. (2023). "Simulation-Based Methodology to Identify Damage Indicators and Safety Thresholds for Post-Earthquake Evaluation of Structures." *Earthquake Engineering & Structural Dynamics*, 52(11), 3455–3476.

15. **Bodenmann, L.**, Baker, J. W., and Stojadinović, B. (2023). "Accounting for path and site effects in spatial ground-motion correlation models using Bayesian inference." *Natural Hazards and Earth System Sciences*, 23(7), 2387–2402.

16. **Markhvida, M.**, and Baker, J. W. (2023). "Modeling future economic costs and interdependent industry recovery after earthquakes." *Earthquake Spectra*, 39(2), 914–937.

17. Madden, I., Mariwala, A., Lindhart, M., Narayan, S., Arkema, K., Beck, M., Baker, J., and Suckale, J. (2023). "Quantifying the fragility of the coral reefs to hurricane impacts: A case study of the Florida Keys and Puerto Rico." *Environmental Research Letters*, 18, 024034.

18. **Loos, S.**, Lallemant, D., Khan, F., McCaughey, J. W., Banick, R., Budhathoki, N., and Baker, J. W. (2023). "A data-driven approach to rapidly estimate recovery potential to go beyond building damage after disasters." *Communications Earth & Environment*, 4(40).

19. **Bhattacharjee, G.,** and Baker, J. W. (2023). "Using global variance-based sensitivity analysis to prioritise bridge retrofits in a regional road network subject to seismic hazard." *Structure and Infrastructure Engineering*, 19(2), 164–177.

20. **Silva-Lopez, R.**, and Baker, J. W. (2022). "Use of corridors to select bridges to retrofit in road networks in seismic regions." *Sustainable and Resilient Infrastructure*, 7(6), 901–917.

21. **Silva-Lopez, R.**, **Bhattacharjee, G.**, Poulos, A., and Baker, J. W. (2022). "Commuter welfare-based probabilistic seismic risk assessment of regional road networks." *Reliability Engineering & System Safety*, 108730.

22. **Wang, C.**, *Costa, R.*, and Baker, J. W. (2022). "Simulating post-disaster temporary housing needs for displaced households and out-of-town contractors." *Earthquake Spectra*, 38(4), 2922–2940.

23. **Bassman, T. J.**, Zhong, K., and Baker, J. W. (2022). "Evaluation of conditional mean spectra code criteria for ground motion selection." *ASCE Journal of Structural Engineering*, 148(11), 04022177.

24. *Costa, R.*, **Wang, C.**, and Baker, J. W. (2022). "Integrating Place Attachment into Housing Recovery Simulations to Estimate Population Losses." *Natural Hazards Review*, American Society of Civil Engineers, 23(4), 04022021.

25. **Loos, S.**, **Levitt, J.**, **Tomozawa, K.**, Baker, J. W., and Lallemant, D. (2022). "Efficacy of damage data integration: A comparative analysis of four major earthquakes." *Natural Hazards Review*, 23(4), 04022026. *Selected Editor's Choice.*

26. **Bowers, C.**, *Serafin, K. A.*, and Baker, J. W. (2022). "A Performance-Based Approach to Quantify Atmospheric River Flood Risk." *Natural Hazards and Earth System Sciences*, 22(4), 1371–1393.

27. **Hulsey, A.**, Baker, J. W., and Deierlein, G. G. (2022). "High-Resolution Post-Earthquake Recovery Simulation: Impact of Safety Cordons." *Earthquake Spectra*, 38(3), 2061–2087.

28. Zhong, K., **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2022). "Site-specific adjustment framework for incremental dynamic analysis (SAF-IDA)." *Earthquake Spectra*, 38(3), 1893–1917.

29. **Silva Lopez, R.**, Baker, J. W., and Poulos, A. (2022). "Deep learning-based retrofitting and seismic risk assessment of road networks." *ASCE Journal of Computing in Civil Engineering*, 36(2), 04021038.

30. **Teng, G.**, Baker, J. W., and Wald, D. J. (2022). "Evaluation of intensity prediction equations (IPEs) for small-magnitude earthquakes." *Bulletin of the Seismological Society of America*, 112(1), 316–330.

31. Poulos, A., Miranda, E., and Baker, J. W. (2022). "Evaluation of Earthquake Response Spectra Directionality Using Stochastic Simulations." *Bulletin of the Seismological Society of America*, 112(1), 307–315.

32. *Kwong, N. S.*, Jaiswal, K. S., Baker, J. W., Luco, N., Ludwig, K. A., and Stephens, V. (2022). "Earthquake Risk of Gas Pipelines in the Conterminous United States and its Sources of Uncertainty." *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, 8(1), 04021081.

33. Argyroudis, S. A., Mitoulis, S. A., Chatzi, E., Baker, J. W., Brilakis, I., Gkoumas, K., Vousdoukas, M., Hynes, W., Carluccio, S., Keou, O., Frangopol, D. M., and Linkov, I. (2021). "Digital technologies can enhance global climate resilience of critical infrastructure." *Climate Risk Management*, 100387[1].

34. **Teng, G.**, and Baker, J. W. (2021). "Post shut-in hazard for hydraulic-fracturing-induced earthquakes: Analysis using data from the Guy-Greenbrier earthquake sequence." *Journal of Seismology*, (in press).

35. **Chen, Y.**, Bradley, B. A., and Baker, J. W. (2021). "Nonstationary spatial correlation in New Zealand strong ground-motion data." Earthquake Engineering & Structural Dynamics, 50(13), 3421–3440.

36. *Costa, R.*, and Baker, J. W. (2021). "SMOTE-LASSO Model of business recovery over time - case study of the 2011 Tohoku earthquake." *Natural Hazards Review*, 22(4), 04021038.

[1] Thorpe Medal Winner, recognizing a paper that contributes to either practical or research aspects of engineering informatics disciplines in the built environment.

37. Baker, J. W., Goulet, C., Luco, N., Rezaeian, S., and **Teng, G.** (2020). "A Subset of CyberShake Ground Motion Time Series for Response History Analysis." *Earthquake Spectra*, 37(2) 1162–1176.

38. **Chen, Y.**, and Baker, J. W. (2021). "Community Detection in Spatial Correlation Graphs: Application to Non-stationary Ground Motion Modeling." *Computers and Geosciences*, 154, 104779.

39. **Cremen, G.**, and Baker, J. W. (2021). "Variance-based Sensitivity Analyses and Uncertainty Quantification for FEMA P-58 Consequence Predictions." *Earthquake Engineering & Structural Dynamics*, 50(3), 811–830.

40. **Loos, S.**, Lallemant, D., Baker, J. W., McCaughery, J., Yun, S.-H., Budhathoki, N., Khan, F., and Singh, R. (2020). "G-DIF: A geospatial data integration framework to rapidly estimate post-earthquake damage." *Earthquake Spectra*, 36(4), 1695–1718[2].

41. Baker, J. W., and **Chen, Y.** (2020). "Ground motion spatial correlation fitting methods and estimation uncertainty." *Earthquake Engineering & Structural Dynamics*, 49(15), 1662–1681.

42. **Teng, G.**, and Baker, J. W. (2020). "Short-term probabilistic hazard assessment in regions of induced seismicity." *Bulletin of the Seismological Society of America*, 110(5), 2441-2453.

43. Schultz, R., Beroza, G. C., Ellsworth, W. L., and Baker, J. W. (2020). "Risk-informed recommendations for managing hydraulic fracturing induced seismicity via traffic light protocols." *Bulletin of the Seismological Society of America*, 110(5), 2411-2422.

44. **Wu, J.**, and Baker, J. W. (2020). "Statistical Learning Techniques for the Estimation of Lifeline Network Performance and Retrofit Selection." *Reliability Engineering & System Safety*, 200, 106921.

45. *Zsarnóczay, Á.*, and Baker, J. W. (2020). "Using model error in response history analysis to evaluate component calibration methods." *Earthquake Engineering & Structural Dynamics*, 49(2), 175–193.

46. **Markhvida, M.**, Walsh, B., Hallegatte, S., and Baker, J. W. (2020). "Quantification of disaster impacts through household well-being losses." *Nature Sustainability*, https://doi.org/10.1038/s41893-020-0508-7.

47. **Cremen, G.**, Seville, E., and Baker, J. W. (2019). "Modeling Post-Earthquake Business Recovery Time: An Analytical Framework." *International Journal of Disaster Risk Reduction*, 40, 101328.

[2] Recipient of the 2020 Earthquake Spectra Graduate Student Paper Award

48. **Chen, Y.**, and Baker, J. W. (2019). "Spatial correlations in CyberShake physics-based ground motion simulations." *Bulletin of the Seismological Society of America*, 109(6), 2447-2458.

49. **Teng, G.**, and Baker, J. W. (2019). "Seismicity Declustering and Hazard for Oklahoma and Kansas." *Bulletin of the Seismological Society of America*, 109(6), 2356–2366.

50. **Teng, G.**, and Baker, J. W. (2019). "Evaluation of CyberShake time series for engineering practice." *Earthquake Spectra*, 35(3), 1311–1328[3].

51. Silva, V., Akkar, S., Baker, J.W., Bazzurro, P., Castro, J. M., Crowley, H., Dolsek, M., Galasso, C., Lagomarsino, S., Monteiro, R., Perrone, D., Pitilakis, K., and Vamvatsikos, D. (2019). "Current Challenges and Future Trends in Analytical Fragility and Vulnerability Modelling." *Earthquake Spectra*, 35(4), 1927-1952.

52. **Cremen, G.**, and Baker, J. W. (2019). "Improving FEMA P-58 Non-Structural Component Fragility Functions and Loss Predictions." *Bulletin of Earthquake Engineering*, 17(4), 1941–1960.

53. **Gupta, A.**, and Baker, J. W. (2019). "A framework for time-varying induced seismicity risk assessment, with application in Oklahoma." *Bulletin of Earthquake Engineering*, 17(8), 4475–4493.

54. **Cremen, G.**, and Baker, J. W. (2019). "A Methodology for Benchmarking Loss Predictions of the FEMA P-58 Seismic Performance Assessment Procedure." *Earthquake Spectra*, 35(1), 193–210.

55. Tarbali, K., Bradley, B. A., and Baker, J. W. (2019). "Ground Motion Selection in the Near-Fault Region Considering Directivity-Induced Pulse Effects." *Earthquake Spectra*, 35(2), 759–786.

56. *Gomez, C.*, and Baker, J. W. (2019). "An optimization-based decision support framework for coupled pre- and post-earthquake infrastructure risk management." *Structural Safety*, 77, 1–9.

57. **Cremen, G.**, and Baker, J. W. (2018). "Quantifying the Benefits of Building Instruments to FEMA P-58 Rapid Post-Earthquake Damage and Loss Predictions." *Engineering Structures*, 176, 243–253.

58. **Markhvida, M.**, and Baker, J. W. (2018). "Unification of seismic performance estimation and real estate investment analysis to model post-earthquake building repair decisions[4]." *Earthquake Spectra*, 34(4), 1787–1808.

[3] Recipient of the 2019 Earthquake Spectra Graduate Student Paper Award
[4] Recipient of the 2018 Earthquake Spectra Graduate Student Paper Award

59. Tarbali, K., Bradley, B. A., and Baker, J. W. (2018). "Consideration and Propagation of Ground Motion Selection Epistemic Uncertainties to Seismic Performance Metrics." *Earthquake Spectra*, 34(2), 587–610.

60. Baker, J. W., and **Lee, C.** (2018). "An Improved Algorithm for Selecting Ground Motions to Match a Conditional Spectrum." *Journal of Earthquake Engineering*, 22(4), 708–723.

61. Worden, C. B., Thompson, E. M., Baker, J. W., Bradley, B. A., Luco, N., and Wald, D. J. (2018). "Spatial and Spectral Interpolation of Ground-Motion Intensity Measure Observations." *Bulletin of the Seismological Society of America*, 108(2), 866–875.

62. **Markhvida, M.**, Ceferino, L., and Baker, J. W. (2018). "Modeling spatially correlated spectral accelerations at multiple periods using principal component analysis and geostatistics." *Earthquake Engineering & Structural Dynamics*, 47(5), 1107–1123.

63. Bradley, B. A., Pettinga, D., Baker, J. W., and Fraser, J. (2017). "Guidance on the utilization of earthquake-induced ground motion simulations in engineering practice." *Earthquake Spectra*, 33(3), 809–835.

64. Baker, J. W., and Bradley, B. A. (2017). "Intensity Measure Correlations Observed in the NGA-West2 Database, and Dependence of Correlations on Rupture and Site Parameters." *Earthquake Spectra*, 33(1), 145–156.

65. **Gokkaya, B. U.**, Baker, J. W., and Deierlein, G. G. (2017). "Estimation and Impacts of Model Parameter Correlation for Seismic Performance Assessment of Reinforced Concrete Structures." *Structural Safety*, 69, 68–78.

66. **Gupta, A.**, Baker, J. W., and Ellsworth, W. L. (2017). "Assessing ground motion amplitudes and attenuation for small to moderate induced and tectonic earthquakes in the Central and Eastern United States." *Seismological Research Letters*, 88(5), 1379-1389.

67. Haselton, C. B., Baker, J. W., Stewart, J. P., Whittaker, A. S., Luco, N., Fry, A., Hamburger, R. O., Zimmerman, R. B., Hooper, J. D., Charney, F. A., and Pekelnicky, R. G. (2017). "Response History Analysis for the Design of New Buildings in the NEHRP Provisions and ASCE/SEI 7 Standard: Part I - Overview and Specification of Ground Motions." *Earthquake Spectra*, 33(2), 373–395.

68. Haselton, C. B., Fry, A., Hamburger, R. O., Baker, J. W., Zimmerman, R. B., Luco, N., Elwood, K. J., Hooper, J. D., Charney, F. A., Pekelnicky, R. G., and Whittaker, A. S. (2017). "Response History Analysis for the Design of New Buildings in the NEHRP Provisions and ASCE/SEI 7 Standard: Part II - Structural Analysis Procedures and Acceptance Criteria." *Earthquake Spectra*, 33(2), 397–417.

69. Zimmerman, R. B., Baker, J. W., Hooper, J. D., Bono, S., Haselton, C. B., Engel, A., Hamburger, R. O., Celikbas, A., and Jalalian, A. (2017). "Response History Analysis for the Design of New Buildings in the NEHRP Provisions and ASCE/SEI 7 Standard: Part

III - Example Applications Illustrating the Recommended Methodology." *Earthquake Spectra*, 33(2), 419–447.

70. **Gupta, A.**, and Baker, J. W. (2017). "Estimating Spatially Varying Event Rates with a Change Point using Bayesian Statistics: Application to Induced Seismicity." *Structural Safety*, 65, 1–11.

71. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2016). "Quantifying the influence of ground motion duration on structural collapse capacity using spectrally equivalent records." *Earthquake Spectra*, 32(2), 927-950.

72. **Seifried, A.E.**, and Baker, J. W. (2016). "Spectral Variability and its Relationship to Structural Response Estimated from Scaled and Spectrum-Matched Ground Motions." *Earthquake Spectra*, 32(4), 2191–2205.

73. **Gokkaya, B. U.**, Baker, J. W., and Deierlein, G. G. (2016). "Quantifying the Impacts of Modeling Uncertainties on the Seismic Drift Demands and Collapse Risk of Buildings with Implications on Seismic Design Checks." *Earthquake Engineering & Structural Dynamics*, 45(10), 1661–1683.

74. Baker, J. W., and **Gupta, A.** (2016). "Bayesian Treatment of Induced Seismicity in Probabilistic Seismic Hazard Analysis." *Bulletin of the Seismological Society of America*, 106(3), 860–870.

75. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2016). "Impact of hazard-consistent ground motion duration in structural collapse risk assessment." *Earthquake Engineering and Structural Dynamics*, 45(8), 1357–1379.

76. **Miller, M.**, and Baker, J. W. (2016). "Coupling mode-destination accessibility with a quantitative seismic-risk assessment to identify at-risk communities." *Reliability Engineering and System Safety*, 147, 60–71.

77. **Burks, L. S.**, and Baker, J. W. (2016). "A predictive model for fling-step in near-fault ground motions based on recordings and simulations." *Soil Dynamics and Earthquake Engineering*, 80(1), 119–126.

78. **Burks, L. S.**, Zimmerman, R. B., and Baker, J. W. (2015). "Evaluation of Hybrid Broadband Ground Motion Simulations for Response History Analysis and Design." *Earthquake Spectra*, 31(3), 1691–1710.

79. **Loth, C.**, and Baker, J. W. (2015). "Rational design spectra for structural reliability assessment using the response spectrum method." *Earthquake Spectra*, 31(4), 2007–2026.

80. Bradley, B. A., **Burks, L. S.**, and Baker, J. W. (2015). "Ground motion selection for simulation-based seismic hazard and structural reliability assessment." *Earthquake Engineering & Structural Dynamics*, 44(13), 2321–2340.

81. Baker, J. W. (2015). "Efficient analytical fragility function fitting using dynamic structural analysis." *Earthquake Spectra*, 31(1), 579-599.

82. Walters, R. J., Zoback, M. D., Baker, J. W., and Beroza, G. C. (2015). "Characterizing and Responding to Seismic Risk Associated with Earthquakes Potentially Triggered by Fluid Disposal and Hydraulic Fracturing." *Seismological Research Letters*, 86(4), 1110–1118.

83. **Miller, M.**, and Baker, J. W. (2015). "Ground-motion intensity and damage map selection for probabilistic infrastructure network risk assessment using optimization." *Earthquake Engineering & Structural Dynamics*, 44(7), 1139–1156.

84. Bradley, B. A., and Baker, J. W. (2015). "Ground motion directionality in the 2010-2011 Canterbury earthquakes." *Earthquake Engineering & Structural Dynamics*, 44(3) 371-384.

85. **Burks, L. S.**, and Baker, J. W. (2015). "Validation of ground motion simulations through simple proxies for the response of engineered systems." *Bulletin of the Seismological Society of America*, 104(4) 1930-1946.

86. **Shahi, S.K.** and Baker, J.W. (2014). "An efficient algorithm to identify strong velocity pulses in multi-component ground motions." *Bulletin of the Seismological Society of America,* 104(5), 2456–2466.

87. **Shahi, S. K.**, and Baker, J. W. (2014). "NGA-West2 models for ground-motion directionality." *Earthquake Spectra,* 30(3), 1285–1300.

88. Spudich, P., Rowshandel, B., **Shahi, S. K.**, and Baker, J. W. (2014). "Overview and Comparison of the NGA-West2 Directivity Models." *Earthquake Spectra*, 30(3), 1199–1221.

89. Bozorgnia, Y., Abrahamson, N. A., Al Atik, L., Ancheta, T. D., Atkinson, G. M., Baker, J. W., Baltay, A., Boore, D. M., Campbell, K. W., Chiou, B. S. J., Darragh, R., Day, S. M., Donahue, J., Graves, R. W., Gregor, N., Hanks, T. C., Idriss, I. M., Kamai, R., Kishida, T., Kottke, A. R., Mahin, S., Rezaeian, S., Rowshandel, B., Seyhan, E., **Shahi, S. K.**, Shantz, T., Silva, W. J., Spudich, P., Stewart, J. P., Watson-Lamprey, J., Wooddell, K., and Youngs, R. R. (2014). "NGA-West2 Research Project." *Earthquake Spectra*, 30(3), 973–987.[5]

90. Flint, M. M., Baker, J. W., and Billington, S. L. (2014). "A Modular Framework for Performance-Based Durability Engineering: from Exposure to Impacts." *Structural Safety*, 50, 78–93.

91. Lawrence, J. F., Cochran, E. S., Chung, A., Kaiser, A., Christensen, C. M., Allen, R., Baker, J. W., Fry, B., Heaton, T., Kilb, D., Kohler, M. D., and Taufer, M. (2014). "Rapid Earthquake Characterization Using MEMS Accelerometers and Volunteer Hosts

[5] Received the "Excellence in Structural Engineering Research" award from the Structural Engineers Association of California (SEAOC).

Following the M 7.2 Darfield, New Zealand, Earthquake." *Bulletin of the Seismological Society of America*, 104(1), 184–192.

92. Myers, A. T., Kanvinde, A. M., Deierlein, G. G., and Baker, J. W. (2013). "A probabilistic formulation of the cyclic void growth model to predict ultra-low cycle fatigue in structural steel." *Journal of Engineering Mechanics*, 140(6), 04014028.

93. **Yamamoto, Y.**, and Baker, J. W. (2013). "Stochastic model for earthquake ground motion using wavelet packets." *Bulletin of the Seismological Society of America*, 103(6), 3044–3056.

94. **Lin, T.**, Haselton, C. B., and Baker, J. W. (2013). "Conditional spectrum-based ground motion selection. Part I: Hazard consistency for risk-based assessments." *Earthquake Engineering & Structural Dynamics*, 42(12), 1847–1865.

95. **Lin, T.**, Haselton, C. B., and Baker, J. W. (2013). "Conditional spectrum-based ground motion selection. Part II: Intensity-based assessments and evaluation of alternative target spectra." *Earthquake Engineering & Structural Dynamics*, 42(12), 1867–1884.

96. Baker, J. W., Abrahamson, N. A., Whitney, J. W., Board, M., and Hanks, T. C. (2013). "Use of fragile geologic structures as indicators of unexceeded ground motions and direct constraints on probabilistic seismic hazard analysis." *Bulletin of the Seismological Society of America*, 103(3), 1898–1911.

97. **Lin, T.**, Harmsen, S. C., Baker, J. W., and Luco, N. (2013). "Conditional Spectrum Computation Incorporating Multiple Causal Earthquakes and Ground Motion Prediction Models." *Bulletin of the Seismological Society of America*, 103(2A) 1103-1116.

98. **Loth, C.**, and Baker, J. W. (2013). "A spatial cross-correlation model of ground motion spectral accelerations at multiple periods." *Earthquake Engineering & Structural Dynamics*, 42(3), 397–417.

99. **Burks, L. S.**, and Baker, J. W. (2012). "Occurrence of negative epsilon in seismic hazard analysis deaggregation, and its impact on target spectra computation." *Earthquake Engineering & Structural Dynamics*, 41(8), 1241–1256.

100. Chen, Q., **Seifried, A.**, Andrade, J. E., and Baker, J. W. (2012). "Characterization of random fields and their impact on the mechanics of geosystems at multiple scales." *International Journal for Numerical and Analytical Methods in Geomechanics*, 36(2), 140-165.

101. **Jayaram, N.**, Baker, J. W., Okano, H., Ishida, H., McCann, M. W., and Mihara, Y. (2011). "Correlation of response spectral values in Japanese ground motions." *Earthquakes and Structures*, 2(4), 357-376.

102. **Jayaram, N.**, **Lin, T.**, and Baker, J. W. (2011). "A computationally efficient ground-motion selection algorithm for matching a target response spectrum mean and variance[6]." *Earthquake Spectra*, 27(3), 797-815.

103. Stewart, J. P., Abrahamson, N. A., Atkinson, G. M., Baker, J., Boore, D. M., Bozorgnia, Y., Campbell, K. W., Comartin, C. D., Idriss, I. M., Lew, M., Mehrain, M., Moehle, J. P., Naeim, F., and Sabol, T. A. (2011). "Representation of bi-directional ground motions for design spectra in building codes." *Earthquake Spectra*, 27(3), 927-937.

104. **Shahi, S.**, and Baker, J. W. (2011). "An empirically calibrated framework for including the effects of near-fault directivity in probabilistic seismic hazard analysis." *Bulletin of the Seismological Society of America*, 101(2), 742-755.

105. Baker, J. W. (2011). "Conditional Mean Spectrum: Tool for ground motion selection." *Journal of Structural Engineering*, 137(3), 322-331.

106. Haselton, C., Baker, J. W., Liel, A. B., and Deierlein, G. G. (2011). "Accounting for ground motion spectral shape characteristics in structural collapse assessment through an adjustment for epsilon." *Journal of Structural Engineering*, 137(3), 332-344.

107. Bayraktarli, Y. Y., Baker, J. W., and Faber, M. H. (2011). "Uncertainty treatment in earthquake modeling using Bayesian probabilistic networks." *GeoRisk,* 5(1), 44 – 58.

108. **Jayaram, N.**, and Baker, J. W. (2010). "Considering spatial correlation in mixed-effects regression, and impact on ground-motion models." *Bulletin of the Seismological Society of America*, 100(6), 3295-3303.

109. **Jayaram, N.**, and Baker, J. W. (2010). "Efficient sampling and data reduction techniques for probabilistic seismic lifeline risk assessment." *Earthquake Engineering & Structural Dynamics*, 39(10), 1109-1131.

110. Young, Y.L., Baker, J.W., and Motley, M.R. (2010). "Reliability-based design and optimization of adaptive marine structures." *Composite Structures*, 92(2), 244-253.

111. **Jayaram N.** and Baker J.W. (2009). "Correlation model for spatially-distributed ground-motion intensities." *Earthquake Engineering and Structural Dynamic*s, 38(15), 1687-1708.

112. *Ryu, H.*, Kim, J. K., and Baker, J. W. (2009). "A probabilistic method for the magnitude estimation of a historical damaging earthquake using structural fragility functions." *Bulletin of the Seismological Society of America,* 99(2A), 520-537.

113. Liel A., Haselton C., Deierlein G.G., and Baker J.W. (2009). "Incorporating modeling uncertainties in the assessment of seismic collapse risk of buildings." *Structural Safety*, 31(2), 197-211.

---

[6] Recipient of the 2011 Earthquake Spectra Outstanding Paper Award

114. **Jayaram N.** and Baker J.W. (2008). "Statistical tests of the joint distribution of spectral acceleration values." *Bulletin of the Seismological Society of America*, 98(5), 2231-2243.

115. Baker J.W. and **Jayaram N. (**2008). "Correlation of spectral acceleration values from NGA ground motion models." *Earthquake Spectra*, 24(1), 299-317.

116. Andrade J.E. and Baker J.W. (2008). "Random porosity fields and their influence on the stability of granular media." *International Journal for Numerical and Analytical Methods in Geomechanics*, 32(10), 1147-1172.

117. Baker J.W. and Cornell C.A. (2008). "Vector-valued intensity measures incorporating spectral shape for prediction of structural response." *Journal of Earthquake Engineering* 12(4), 534-554.

118. Baker J.W. and Cornell C.A. (2008). "Vector-valued intensity measures for pulse-like near-fault ground motions." *Engineering Structures*, 30 (4), 1048-1057.

119. Baker J.W. and Cornell C.A. (2008). "Uncertainty Propagation in Probabilistic Seismic Loss Estimation, *Structural Safety*." 30(3), 236-252.

120. Baker J.W., Schubert M., and Faber M. (2008). "On the assessment of robustness," *Structural Safety*. 30(3), 253-267.

121. Baker J.W. and Faber M. (2008). "Liquefaction risk assessment using geostatistics to account for soil spatial variability." *ASCE Journal of Geotechnical and Geoenvironmental Engineering* 134(1), 14-23.

122. Tothong P., Cornell C.A., and Baker J.W. (2007). "Explicit-directivity-pulse inclusion in probabilistic seismic hazard analysis." *Earthquake Spectra* 23(4), 867-891.

123. Baker J.W. (2007). "Quantitative classification of near-fault ground motions using wavelet analysis." *Bulletin of the Seismological Society of America* 97(5), 1486-1501.

124. Baker J.W. (2007). "Probabilistic Structural Response Assessment Using Vector-Valued Intensity Measures." *Earthquake Engineering & Structural Dynamics* 36(13), 1861-1883.

125. Baker J.W. and Cornell C.A. (2006). "Correlation of Response Spectral Values for Multi-Component Ground Motions." *Bulletin of the Seismological Society of America* 96 (1), 215-227.

126. Baker J.W. and Cornell C.A. (2006). "Which Spectral Acceleration Are You Using?" *Earthquake Spectra,* 22(2), 293-312.

127. Baker J.W. and Cornell C.A. (2006). "Spectral Shape, Epsilon and Record Selection." *Earthquake Engineering & Structural Dynamics* 35(9), 1077-1095.

128. Baker J.W. and Cornell C.A. (2005). "A Vector-Valued Ground Motion Intensity Measure Consisting of Spectral Acceleration and Epsilon." *Earthquake Engineering & Structural Dynamics*, 34(10), 1193-1217.

Other Publications

129. **Paul, N.**, Galasso, C., Silva, V., and Baker, J. W. (2023). "Benchmarking housing damage as a driver of population displacement following earthquakes." *SECED 2023 Conference*, Cambridge, England.

130. *Costa, R.*, and Baker, J. W. (2023). "A Probabilistic Approach to Estimating Post-disaster Unmet Housing Needs Under Limited Information." *14th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP14*, Dublin, Ireland.

131. *Costa, R.*, **Wang, C.**, and Baker, J. W. (2022). "Logistic Models Linking Household Recovery Capacity to Demographic Characteristics." *13th International Conference on Structural Safety and Reliability (ICOSSAR 2021)*, Shanghai, China.

132. **Bassman, T. J.**, Zhong, K., and Baker, J. W. (2022). "Ground motion selection using code-compliant conditional mean spectra: Effects of conditioning period and amplitude constraints." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

133. **Chen, Y.**, and Baker, J. W. (2022). "Spatial correlation analysis of CyberShake simulations, considering multiple ruptures." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

134. Galvis, F. A., Deierlein, G. G., Molina Hutt, C., **Issa, O.**, Baker, J. W., and Zsarnóczay, Á. (2022). "Structural modeling and ground motion selection for risk assessment of pre-Northridge welded steel moment frames." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

135. Galvis, F. A., Deierlein, G. G., Molina Hutt, C., **Issa, O.**, Baker, J. W., and Zsarnóczay, Á. (2022). "Seismic assessment of pre-Northridge welded steel moment frame buildings and implications on community resilience." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

136. **Hulsey, A. M.**, Galvis, F. A., Baker, J. W., and Deierlein, G. G. (2022). "Decision-making based on the risk of building collapse due to aftershock hazard and post-earthquake damage." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

137. **Issa, O.**, Baker, J. W., and Silva Lopez, R. (2022). "Optimization framework to support recovery-based design of buildings— preliminary results." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

138. **Mongold, E.**, *Costa, R.*, Zsarnóczay, Á., and Baker, J. W. (2022). "Simulating post-disaster landlord residence and rental unit recovery." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

139. **Silva Lopez, R.**, and Baker, J. W. (2022). "Comparative study of retrofitting strategies for seismic risk management of road networks." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

140. **Zhang, J.**, *Costa, R.*, Zsarnóczay, Á., and Baker, J. W. (2022). "Enhancing post-disaster recovery modeling through high-fidelity household income estimation." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

141. Zhong, K., **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2022). "Site-specific adjustment framework for IDA (SAF-IDA) for regional earthquake damage and loss simulation." *12th National Conference on Earthquake Engineering*, Salt Lake City, Utah.

142. *Serafin, K.A.*, Koseff, J.R., Baker, J.W., and Suckale, J., (2022). Flood risk transfer as a consequence of climate change and infrastructure modifications along the San Francisquito Creek, California. *Advances in Extreme Value Analysis and Application to Natural Hazards (EVAN)*, Orlando, Florida.

143. Shokrabadi, M., Bozorgnia, Y., Burton, H. V., Askari, M., and Baker, J. W. (2022). An Efficient Computational Platform for Selecting and Scaling Ground Motion Records while Considering Multiple Target Spectra. Report GIRS 2022-02.

144. *Kwong, N. S.*, Jaiswal, K., Baker, J. W., Luco, N., Ludwig, K. A., and Stephens, V. J. (2022). "Open-source resources help navigate new IM regulations." *Oil & Gas Journal*. January 3, 2022. p46-52.

145. Baker, J. W., Bradley, B. A., and Stafford, P. J. (2021). *Seismic Hazard and Risk Analysis*. Cambridge University Press, Cambridge, England. 581p.

146. **Silva Lopez, R.**, and Baker, J. W. (2021). *Use of Corridors for Decision Making in Transportation Networks in Seismic Regions*. PEER Report No. 2021/09, Pacific Earthquake Engineering Research Center, Berkeley, California, 49p.

147. **Mongold, E.**, and Baker, J. W. (2021). A software repository of Ground Motion Models. Blume Earthquake Engineering Center Technical Report 207, version 1.0.0. 54p. https://doi.org/10.25740/qy113my5899

148. Deierlein, G. G., and Zsarnóczay, Á. (2021). State of the Art in Computational Simulation for Natural Hazards Engineering. Report No. 2021-01, http://doi.org/10.5281/zenodo.4558106.

149. Günay, S., Hu, F., Mosalam, K. M., Nema, A., Restrepo, J. I., *Zsarnóczay, A.*, and Baker, J. W. (2020). "Blind Prediction of Shaking Table Tests of a New Bridge Bent Design." PEER Report 2020/09. Pacific Earthquake Engineering Research Center, University of California at Berkeley, 147p.

150. Baker, J. W., **Markhvida, M.**, and Chen, Y. (2020). "Progress in measuring spatial correlations in ground motion intensity." *17th World Conference on Earthquake Engineering*, Sendai, Japan.

151. Deierlein, G. G., Yen, W.-Y., **Hulsey, A.**, Baker, J. W., and Molina Hutt, C. (2020). "Safety of tall pre-Northridge steel frame buildings and implications on cordoning and recovery." *17th World Conference on Earthquake Engineering*, Sendai, Japan.

152. Kwong, N. S., Jaiswal, K. S., Luco, N., and Baker, J. W. (2020). "Selecting three components of ground motions from conditional spectra for multiple stripe analyses." *17th World Conference on Earthquake Engineering*, Sendai, Japan.

153. **Loos, S.**, Lallemant, D., McCauley, J. L., Budhathoki, N., Khan, F., Singh, R., and Baker, J. W. (2020). "Beyond building damage: modeling post-disaster need." *17th World Conference on Earthquake Engineering*, Sendai, Japan.

154. **Markhvida, M.**, **Cremen, G.**, Grujic, O., Ceferino, L., and Baker, J. W. (2020). "Methods for evaluation and treatment of epistemic uncertainty in portfolio losses due to earthquakes." *17th World Conference on Earthquake Engineering*, Sendai, Japan.

155. Hill, A., Mason, D., Potter, J. R., Hellmuth, M., Ayyub, B., and Baker, J. W. (2019). *Ready For Tomorrow: Seven Strategies For Climate-Resilient Infrastructure*. Hoover Institution, 20p.

156. Deierlein, G. G., and Zsarnóczay, A., editors (2019). *State-of-Art in Computational Simulation for Natural Hazards Engineering*. Report No. 2019-01, SimCenter, 116p.

157. **Loos, S.**, Barns, K., **Bhattacharjee, G.**, Soden, R., Berfort, B., Eckle, M., Giovando, C., Deierlein, G. G., Kiremidjian, A., Baker, J. W., and Lallemant, D. (2018). Crowd-sourced remote assessments of regional-scale post-disaster damage. Blume Center Technical Report No.197, Stanford University, 126p.

158. Baker, J. W., and **Gupta, A.** (2018). "Incorporating induced seismicity source models and ground motion predictions to forecast dynamic regional risk." *Geotechnical Earthquake Engineering and Soil Dynamics V*, Austin, Texas, 10p.

159. Baker, J. W. (2018). "Issues with applying performance-based engineering to distributed infrastructure systems." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

160. Baker, J. W., and **Gupta, A.** (2018). "Risk analysis and risk management tools for induced seismicity." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

161. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2018). "Accounting for the influence of ground motion response spectral shape and duration in the equivalent lateral force design procedure." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

162. **Chen, Y.**, and Baker, J. W. (2018). "Spatial correlations in CyberShake physics-based ground motion simulations." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

163. Cook, D., Wade, K., Haselton, C. B., Baker, J. W., and DeBock, D. J. (2018). "A structural response prediction engine to support advanced seismic risk assessment." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

164. **Cremen, G.**, and Baker, J. W. (2018). "Quantifying the benefits of building instruments to FEMA P-58 damage and loss predictions." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

165. **Hulsey, A.**, Deierlein, G. G., and Baker, J. W. (2018). "Quantifying the post-earthquake downtime induced by cordons around damaged buildings." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

166. **Loos, S.**, **Barns, K.**, **Bhattacharjee, G.**, Soden, R., Berfort, B., Eckle, M., Giovando, C., Saito, K., Deierlein, G. G., Kiremidjian, A., Baker, J. W., and Lallemant, D. (2018). "Crowd-sourced remote assessments of regional-scale post-disaster damage." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

167. **Markhvida, M.**, and Baker, J. W. (2018). "Unification of probabilistic seismic performance estimation and real estate investment analysis to evaluate cost-effectiveness of post-earthquake building repair." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

168. **Teng, G.**, and Baker, J. W. (2018). "Selection of CyberShake time series for engineering building code analyses." *Eleventh U.S. National Conference on Earthquake Engineering*, Los Angeles, California, USA.

169. Baker, J. W., **Gokkaya, B. U.**, and Deierlein, G. G. (2017). "Model parameter uncertainties and correlations: quantification and assessment of impacts on seismic collapse risk." 12th International Conference on Structural Safety and Reliability (ICOSSAR), Vienna, Austria, 7p.

170. *Gomez, C.*, and Baker, J. W. (2017). "Large-scale optimization strategies for risk-informed decision support in infrastructure systems: an application to transportation networks exposed to seismic hazards." 12th International Conference on Structural Safety and Reliability (ICOSSAR), Vienna, Austria, 7p.

171. **Markhvida, M.**, Ceferino, L., and Baker, J. W. (2017). "Effect of ground motion correlation on regional seismic loss estimation: application to Lima, Peru using a cross-correlated principal component analysis model." 12th International Conference on Structural Safety and Reliability (ICOSSAR), Vienna, Austria, 10p.

172. Moehle, Jack P., Ron O. Hamburger, Jack W Baker, Jonathan D. Bray, C. B. Crouse, Greg G. Deierlein, John D. Hooper, et al. (2017) "Guidelines for Performance-Based Seismic Design of Tall Buildings Version 2.0." PEER Report 2017/06. Berkeley, CA.

173. Baker, J. W., and Lew, M. (2017). "Ground motion selection and acceptance criteria when multiple seismic sources contribute to MCE ground motions." *3rd International Conference on Performance-based Design in Earthquake Geotechnical Engineering (PBD-III)*, Vancouver, B.C., Canada, 7p.

174. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2017). "Physical mechanisms underlying the influence of ground motion duration on structural collapse capacity." *16th World Conference on Earthquake Engineering*, Santiago, Chile, 12p.

175. **Cremen, G.**, Abhineet Gupta, and Baker, J. W. (2017). "Evaluation of ground motion intensities from induced earthquakes using 'Did You Feel It?' data." *16th World Conference on Earthquake Engineering*, Santiago, Chile, 12p.

176. **Gupta, A.**, and Baker, J. W. (2017). "Sensitivity of induced seismicity risk to source characterization, ground motion prediction, and exposure." *16th World Conference on Earthquake Engineering*, Santiago, Chile, 12p.

177. **Wu, J.**, and Baker, J. W. (2017). "End-to-end simulation and analysis framework for efficient seismic retrofitting of water systems." *16th World Conference on Earthquake Engineering*, Santiago, Chile, 12p.

178. Bradley, B., Pettinga, D., and Baker, J. W. (2016). "Guidance on the utilisation of ground motion simulations in engineering practice." *QuakeCoRE Annual Meeting*, Taopo, New Zealand.

179. **Cremen, G.**, and Baker, J. W. (2016). "Linking building properties to earthquake-induced damage and business downtime using FEMA P-58 and REDi assessments." *QuakeCoRE Annual Meeting*, Taopo, New Zealand.

180. Tarbali, K., Bradley, B., and Baker, J. W. (2016). "Seismic hazard analysis and ground motion selection considering directivity effects." *QuakeCoRE Annual Meeting*, Taopo, New Zealand.

181. **Chandramohan, R.**, Deierlein, G. G., and Baker, J. W. (2016). "Quantifying the effect of ground motion duration on structural collapse risk." Seismological Society of America Annual Meeting, Reno, Nevada.

182. **Chandramohan, R.**, Deierlein, G. G., and Baker, J. W. (2016). "Influence of ground motion duration on structural collapse risk." Pacific Earthquake Engineering Research Center (PEER) Annual Meeting. Berkeley, California.

183. **Cremen, G.**, and Baker, J. W. (2016). "Preliminary evaluation of ground motion intensities from induced earthquakes using 'Did You Feel It?' data." Pacific Earthquake Engineering Research Center (PEER) Annual Meeting. Berkeley, California.

184. **Lee, C.**, and Baker, J. W. (2016). "An improved algorithm for ground motion selection." Pacific Earthquake Engineering Research Center (PEER) Annual Meeting. Berkeley, California.

185. **Wu, J.**, and Baker, J. W. (2016). "End to End Simulation and Analysis Framework for Seismic Retrofitting of Water Supply Systems." Pacific Earthquake Engineering Research Center (PEER) Annual Meeting. Berkeley, California.

186. Baker, J. W., **Cremen, G.**, Giovinazzi, S., and Seville, E. (2016). "Benchmarking FEMA P-58 performance predictions against observed earthquake data – A preliminary evaluation for the Canterbury earthquake sequence." *New Zealand Society for Earthquake Engineering Annual Technical Conference*, Christchurch, New Zealand, 7p.

187. Baker, J. W. (2015). "Ground motion selection for performance-based engineering, and the Conditional Mean Spectrum as a selection tool." *Proceedings of the Tenth Pacific Conference on Earthquake Engineering*, Sydney, Australia, 8p.

188. **Lin, T.**, and Baker, J. (2015). "Conditional Spectra." *Encyclopedia of Earthquake Engineering*, M. Beer, I. A. Kougioumtzoglou, E. Patelli, and I. S.-K. Au, eds., Springer Berlin Heidelberg, 13p.

189. Baker, J. W., Haselton, C. B., Luco, N., Stewart, J. P., and Zimmerman, R. (2015). "Updated ground motion spectral matching requirements in the 2015 NEHRP Recommended Seismic Provisions." *6th International Conference on Earthquake Geotechnical Engineering*, Christchurch, New Zealand, 8p.

190. Baker, J. W., **Miller, M. K.**, and **Markhvida, M.** (2015). "Local Measures of Disruption for Quantifying Seismic Risk and Reliability of Complex Networks." *12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12*, Vancouver, Canada, 8p.

191. **Gokkaya, B. U.**, Baker, J. W., and Deierlein, G. G. (2015). "Illustrating a Bayesian Approach to Seismic Collapse Risk Assessment." *12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12*, Vancouver, Canada, 8p[7].

192. **Gupta, A.**, and Baker, J. W. (2015). "A Bayesian change point model to detect changes in event occurrence rates, with application to induced seismicity." *12th International*

[7] Recipient of the Civil Engineering Risk and Reliability Association (CERRA) Student Recognition Award for best paper

Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12, Vancouver, Canada, 8p.

193. **Loth, C.**, and Baker, J. W. (2015). "Environmental contours for determination of seismic design response spectra." *12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12*, Vancouver, Canada, 8p.

194. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2015). "Robust and efficient estimation of structural collapse capacity using the central difference time integration scheme." *Engineering Mechanics Institute Conference,* Stanford, CA.

195. **Gokkaya, B. U.**, Baker, J. W., and Deierlein, G. G. (2015). "Seismic response assessment of structures in the presence of modeling uncertainty." *Engineering Mechanics Institute Conference,* Stanford, CA.

196. *Gomez, C.*, Baker, J. W., Castiblanco, D., and Faber, M. H. (2015). "Coupled pre- and post-disaster decisions in the context of infrastructure resilience." *8th International Forum on Engineering Decision Making*, Kyoto, Japan.

197. Baker, J. W., and **Gupta, A.** (2015). "Quantifying Changes in Site Hazard for Induced Seismicity through Bayesian Inference." *First Schatzalp Workshop on Induced Seismicity*, Davos, Switzerland.

198. **Miller, M.**, **Cortes, S.**, Ory, D., and Baker, J. W. (2015). "Estimating impacts of catastrophic network damage from earthquakes using an activity-based travel model." *Transportation Research Board 2015 Annual Meeting*, Washington, D.C. Paper 15-2366.

199. Walters, R., Zoback, M. D., **Gupta, A.**, Baker, J. W., and Beroza, G. C. (2014). "A Site Characterization Protocol for Evaluating the Potential for Triggered or Induced Seismicity Resulting from Wastewater Injection and Hydraulic Fracturing." *AGU Annual Meeting*, San Francisco, CA.

200. Baker, J. W., **Lin, T.**, and Haselton, C. B. (2014). "Ground motion selection for performance-based earthquake engineering: Effect of target spectrum and conditioning period." *Bled4 Workshop on Performance-based Seismic Engineering: Vision for an Earthquake Resilient Society*, Chapter 28. Springer.

201. **Victorsson, V. K.**, Baker, J. W., and Deierlein, G. G. (2014). "Reliability considerations in the seismic capacity design requirements for force-controlled components." *Bled4 Workshop on Performance-based Seismic Engineering: Vision for an Earthquake Resilient Society*, Chapter 29. Springer.

202. Baker, J. W., Luco, N., Abrahamson, N. A., Graves, R. W., Maechling, P. J., and Olsen, K. B. (2014). "Engineering uses of physics-based ground motion simulations." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

203. **Burks, L. S.**, and Baker, J. W. (2014). "Fling in near-fault ground motions and its effect on structural collapse capacity." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

204. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2014). "Hazard-consistent ground motion duration: calculation procedure and impact on structural collapse risk." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

205. Haselton, C. B., Fry, A., Baker, J. W., Hamburger, R. O., Whittaker, A. S., Stewart, J. P., Elwood, K. J., Luco, N., Hooper, J. D., Charney, F. A., Zimmerman, R., and Pekelnicky, R. G. (2014). "Response-History Analysis for the Design of New Buildings: A Fully Revised Chapter 16 Methodology Proposed for the 2015 NEHRP Provisions and the ASCE/SEI 7-16 Standard." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

206. **Loth, C.**, and Baker, J. W. (2014). "Calibrated response spectra for collapse assessment under multivariate hazard and structural response uncertainties." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

207. **Seifried, A.**, and Baker, J. W. (2014). "Spectral variability and its relationship to structural response estimated from scaled and spectrum-matched ground motions." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

208. **Ugurhan, B.**, Baker, J. W., and Deierlein, G. G. (2014). "Uncertainty estimation in seismic collapse assessment of modern reinforced concrete moment frame buildings." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

209. **Wu, J.**, and Baker, J. W. (2014). "Ground motion modeling for risk and reliability assessment of San Francisco infrastructure systems." Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Anchorage, Alaska, 10p.

210. Hanks, T. C., Abrahamson, N. A., Baker, J. W., Boore, D. M., Board, M., Brune, J. N., Cornell, C. A., and Whitney, J. W. (2013). Extreme Ground Motions And Yucca Mountain. Open-file report #2013–1245, US Geological Survey, Reston, Virginia, http://dx.doi.org/10.3133/ofr20131245. 105p.

211. Baker, J. W. (2013). "Trade-offs in ground motion selection techniques for collapse assessment of structures." *Vienna Congress on Recent Advances in Earthquake Engineering and Structural Dynamics 2013* (VEESD 2013), Vienna, Austria, 10p.

212. Spudich, P., Bayless, J., Baker, J. W., Chiou, B. S. J., Rowshandel, B., **Shahi, S. K.**, and Somerville, P. G. (2013). *Final Report of the NGA-West2 Directivity Working Group*. Pacific Earthquake Engineering Research Center, Report 2013/09, Berkeley, CA, 131p.

213. **Shahi, S. K.**, and Baker, J. W. (2013). *Directionality models for the NGA West 2 project*. Pacific Earthquake Engineering Research Center, Report 2013/10, Berkeley, CA, 46p.

214. **Loth, C.**, and Baker, J. W. (2013). "Reliability-based calibration of design seismic response spectra and structural acceptance criteria." *11th International Conference on Structural Safety & Reliability*, New York, NY, 8p.

215. **Miller, M.**, and Baker, J. W. (2013). "A Framework for Selecting a Suite of Ground-Motion Intensity Maps Consistent with Both Ground-Motion Intensity And Network Performance Hazards For Infrastructure Networks." *11th International Conference on Structural Safety & Reliability*, New York, NY, 8p.

216. **Ugurhan, B.**, Baker, J. W., and Deierlein, G. G. (2013). "Incorporating model uncertainty in collapse reliability assessment of buildings." *11th International Conference on Structural Safety & Reliability*, New York, NY, 8p.

217. **Lin, T.**, and Baker, J. W. (2013). "Introducing Adaptive Incremental Dynamic Analysis: A new tool for linking ground motion selection and structural response assessment." *11th International Conference on Structural Safety & Reliability*, New York, NY, 8p.

218. **Chandramohan, R.**, Baker, J. W., and Deierlein, G. G. (2013). "Influence of Ground Motion Duration on the Collapse Response of Bridge Structures." *Seventh National Seismic Conference on Bridges & Highways*, Oakland, California, 12p.

219. Baker, J. W., Coray, J., DeStefano, P., Duenas-Osorio, L., King, S., and Manuel, L. (2013). "Risk communication for critical civil infrastructure systems." *American Society of Civil Engineers Structures Congress*, Pittsburgh, PA. 10p.

220. **Chandramohan, R.**, Lin, T., Baker, J. W., and Deierlein, G. G. (2013). "Influence of ground motion spectral shape and duration on seismic collapse risk." *10th International Conference on Urban Earthquake Engineering*, Tokyo, Japan, 9p.

221. **Shahi, S. K.**, and Baker, J. W. (2012). "Preliminary NGA-West 2 models for ground-motion directionality." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 10p.

222. Spudich, P., Watson-Lamprey, J., Somerville, P. G., Bayless, J., **Shahi, S. K.**, Baker, J. W., Rowshandel, B., and Chiou, B. S. J. (2012). "Directivity models produced for the Next Generation Attenuation West 2 (NGA-West 2) project." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 9p.

223. Baker, J. W., Bozorgnia, Y., Di Alessandro, C., Chiou, B. S. J., Erdik, M., Somerville, P. G., and Silva, W. J. (2012). "GEM-PEER Global GMPEs Project Guidance for Including Near-Fault Effects in Ground Motion Prediction Models." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 10p.

224. Akkar, S. D., Douglas, J., Di Alessandro, C., Campbell, K. W., Somerville, P. G., Cotton, F., Silva, W., and Baker, J. W. (2012). "Defining a consistent strategy to model ground motion parameters for the GEM-PEER Global GMPEs Project." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 10p.

225. **Foschaar, J. C.**, Baker, J. W., and Deierlein, G. G. (2012). "Preliminary Assessment of Ground Motion Duration Effects on Structural Collapse." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 10p.

226. Haselton, C. B., Whittaker, A. S., Hortacsu, A., Baker, J. W., Bray, J. D., and Grant, D. N. (2012). "Selecting and Scaling Earthquake Ground Motions for Performing Response-History Analyses." *Proceedings of 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, 10p.

227. Walters, M., Berkowitz, R., Lau, D., Lee, W., and Baker, J. W. (2012). "Seismic Considerations and Evaluation Approach for 'Isolated' Rooftop PV Arrays." SEAOC 2012 Convention Proceedings, 13p.

228. Flint, M., Baker, J. W., and Billington, S. L. (2012). "A probabilistic framework for performance-based durability engineering." in *Durability of Building Materials and Components*, Springer-Verlag, 35p (in press).

229. NIST (2011). *Selecting and Scaling Earthquake Ground Motions for Performing Response-History Analyses*. Prepared by the NEHRP Consultants Joint Venture for the National Institute of Standards and Technology, Gaithersburg, Maryland. 256p.

230. **Victorsson, V.**, Deierlein, G. G., and Baker, J. W. (2011). "Capacity design in seismic resistant steel buildings: a reliability-based methodology to establish capacity-design factors." *EUROSTEEL 2011*, Budapest, Hungary, 6p.

231. **Loth, C.**, and Baker, J. W. (2011). Spatial cross-correlation of spectral accelerations at multiple periods: model development and risk assessments considering secondary earthquake effects. Project report, USGS award G10AP00046. 51p.

232. Baker, J. W., and **Miller, M.** (2011). "Effects of earthquake source geometry and site conditions on spatial correlation of earthquake ground motion hazard." *Keynote lecture at 4th IASPEI/IAEE International Symposium on Effects of Surface Geology on Seismic Motion*, Santa Barbara, California, 12p.

233. Baker, J. W., **Lin, T., Shahi, S. K.**, and **Jayaram, N.** (2011). New Ground Motion Selection Procedures and Selected Motions for the PEER Transportation Research Program. PEER Technical Report 2011/03. 106p.

234. **Shahi, S. K.**, and Baker, J. W. (2011). "Regression models for predicting the probability of near-fault earthquake ground motion pulses, and their period." 11th International Conference on Applications of Statistics and Probability in Civil Engineering, Zurich, Switzerland, 8p.

235. **Yamamoto, Y.**, and Baker, J. W. (2011). "Stochastic model for earthquake ground motions using wavelet packets." 11th International Conference on Applications of Statistics and Probability in Civil Engineering, Zurich, Switzerland, 8p.

236. **Miller, M.**, Baker, J. W., Lim, H. W., Song, J., and **Jayaram, N.** (2011). "A FORM-based analysis of lifeline networks using a multivariate seismic intensity model[8]." 11th International Conference on Applications of Statistics and Probability in Civil Engineering, Zurich, Switzerland, 8p.

237. **Jayaram, N.**, and Baker, J. W. (2011). "Seismic risk assessment of spatially-distributed systems using ground-motion models fitted considering spatial correlation." 11th International Conference on Applications of Statistics and Probability in Civil Engineering, Zurich, Switzerland, 6p.

238. Baker, J. W., **Seifried, A.**, Andrade, J. E., and Chen, Q. (2011). "Characterization of random fields at multiple scales: an efficient conditional simulation procedure and applications in geomechanics." 11th International Conference on Applications of Statistics and Probability in Soil and Structural Engineering (ICASP11), Zurich, Switzerland. 7p.

239. **Lin, T.**, and Baker, J. W. (2011). "Probabilistic Seismic Hazard Deaggregation of Ground Motion Prediction Models." Proceedings, 5th International Conference on Earthquake Geotechnical Engineering, Santiago, Chile, 12p.

240. McCann, M. W., Baker, J. W., **Jayaram, N.**, Gupta, A., and Syed, S. (2010). Seismic Fragility Evaluation for Structures. CUREE/Kajima Cooperative Agreement, project report, 149p.

241. **Lin, T.**, and Baker, J. W. (2010). "Advancement of hazard-consistent ground motion selection: refinements to conditional mean spectrum calculations." PEER Annual Meeting, San Francisco, CA.

242. **Yamamoto, Y.**, and Baker, J. W. (2010). "Stochastic model for earthquake ground motions using wavelet packets." Southern California Earthquake Center Annual Meeting. Palm Springs, CA.

243. **Jayaram, N.**, and Baker, J. W. (2010). "Characterizing spatial cross-correlation between ground-motion spectral accelerations at multiple periods." 9th US National and 10th Canadian Conference on Earthquake Engineering, Toronto, Canada, 7p.

244. **Shahi, S. K.**, and Baker, J. W. (2010). "Signal Processing and Probabilistic Seismic Hazard Analysis Tools for Characterizing the Impact of Near-Fault Directivity."

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[8] Recipient of Civil Engineering Risk and Reliability Association (CERRA) Student Recognition Award for best paper

Proceedings, 7th International Conference on Urban Earthquake Engineering (7CUEE) & 5th International Conference on Earthquake Engineering (5ICEE), Tokyo, Japan, 6p.

245. **Jayaram, N.**, and Baker, J. W. (2010). "Ground-Motion Selection for PEER Transportation Research Program[9]." Proceedings, 7th International Conference on Urban Earthquake Engineering (7CUEE) & 5th International Conference on Earthquake Engineering (5ICEE), Tokyo, Japan, 9.

246. Haselton, C. B., Baker, J. W., Bozorgnia, Y., Goulet, C. A., Kalkan, E., Luco, N., Shantz, T., Shome, N., Stewart, J. P., Tothong, P., Watson-Lamprey, J., and Zareian, F. (2009). Evaluation of Ground Motion Selection and Modification Methods: Predicting Median Interstory Drift Response of Buildings. *PEER Technical Report 2009/01*, Berkeley, California, 288p.

247. **Jayaram, N.** and Baker J.W. (2009). "Efficient sampling techniques for seismic risk assessment of lifelines." *10th International Conference on Structural Safety and Reliability* (ICOSSAR09), Osaka, Japan. 8p.

248. Bianchini, M., Diotallevi, P., and Baker, J. W. (2009). "Prediction of Inelastic Structural Response Using an Average of Spectral Accelerations." *10th International Conference on Structural Safety and Reliability* (ICOSSAR09), Osaka, Japan, 8p.

249. Baker, J. W., and Lepech, M. D. (2009). "Treatment of Uncertainties In Life Cycle Assessment." *10th International Conference on Structural Safety and Reliability* (ICOSSAR09), Osaka, Japan, 8p.

250. **Jayaram, N.** and Baker J.W. (2009). "Deaggregation of lifeline risk: Insights for choosing deterministic scenario earthquakes." *TCLEE2009 Conference: Lifeline Earthquake Engineering in a Multihazard Environment*, Oakland, California. 10p.

251. Baker, J. W. (2009). "Review of Recent Ground Motion Studies for Performance-based Engineering." A Workshop on Performance-Based Earthquake Engineering at the Centre for Scientific Culture of the University of Naples Federico II, Anacapri, Italy, 10p.

252. Motley, M. R., Young, Y. L., and Baker, J. W. (2009). "Reliability-based design and optimization of self-twisting composite marine rotors." *ASME 28th International Conference on Ocean, Offshore and Arctic Engineering*, Honolulu, Hawaii, 7p.

253. Baker, J.W. and **Lin, T. (**2008). "Ground Motion Target Spectra for Structures Sensitive to Multiple Periods of Excitation: Conditional Mean Spectrum Computation Using Multiple Ground Motion Prediction Models." *Final Technical Report for U.S. Geological Survey National Earthquake Hazards Reduction Program (NEHRP) External Research Program Award 08HQAG0115*.
http://earthquake.usgs.gov/research/external/reports/08HQAG0115.pdf. 38 p.

[9] Recipient of Best Presentation Award

254. Baker, J.W. and **Jayaram, N. (**2008). "Effects of spatial correlation of ground motion parameters for multi-site seismic risk assessment: Collaborative research with Stanford University and AIR." *Final Technical Report for U.S. Geological Survey National Earthquake Hazards Reduction Program (NEHRP) External Research Program Award 07HQGR0031*. http://earthquake.usgs.gov/research/external/reports/07HQGR0031.pdf. 69 p.

255. *Ryu H.*, Luco N., Baker J.W., and Karaca E. (2008). "Converting HAZUS capacity curves to seismic hazard-compatible building fragility functions: Effect of hysteretic models." *14th World Conference on Earthquake Engineering*. Beijing, China. 8p.

256. Green R.A. and Baker J.W. (2008). "The significance of near-fault effects on liquefaction." *14th World Conference on Earthquake Engineering*. Beijing, China. 8p.

257. Baker J.W. (2008). "Introducing correlation among fragility functions for multiple components." *14th World Conference on Earthquake Engineering*. Beijing, China. 8p.

258. Haselton C., Baker J.W., Goulet C., Watson-Lamprey J., and Zareian F. (2008). "The importance of considering spectral shape when evaluating building seismic performance under extreme ground motions." *SEAOC Convention* 2008, Kohala Coast, Hawaii 10 p.

259. Baker JW. (2008). "Identification of near-fault velocity pulses and prediction of resulting response spectra." *Geotechnical Earthquake Engineering and Soil Dynamics IV*. Sacramento, California. 10 p.

260. Goulet C.A., Watson-Lamprey J., Baker J.W., Luco N., and Yang T.Y. (2008). "Assessment of Ground Motion Selection and Modification (GMSM) methods for non-linear dynamic analyses of structures." *Geotechnical Earthquake Engineering and Soil Dynamics IV*, Sacramento, California, 10 p.

261. Baker JW. (2008). "Risk-Based Assessment of Robustness: What Can It Do and What Can't It Do?" *Robustness of Structures, COST Action TU0601 1st Workshop.* Zurich, Switzerland. 8 p.

262. Baker J.W. (2007). "Measuring bias in structural response caused by ground motion scaling." *8th Pacific Conference on Earthquake Engineering*, Nangyang Technological University, Singapore 8 p.

263. Liel A., Haselton C., Deierlein G.G., and Baker J.W. (2007). "Assessing the seismic collapse risk of reinforced concrete frame structures, including the effects of modeling uncertainties." *Special Workshop on Risk Acceptance and Risk Communication*, Stanford, California, 12 p.

264. Faber M.H., Schubert M., and Baker J.W. (2007). "Decision making subject to aversion of low frequency high consequence events." *Special Workshop on Risk Acceptance and Risk Communication*, Stanford, California, 13 p.

265. Baker J.W. (2007). "Correlation of ground motion intensity parameters used for predicting structural and geotechnical response." *10th International Conference on Application of Statistic and Probability in Civil Engineering (ICASP10)*, Tokyo, Japan, 7 p.

266. Park J., Bazzurro P., and Baker J.W. (2007). "Modeling spatial correlation of ground motion intensity measures for regional seismic hazard and portfolio loss estimation." *10th International Conference on Application of Statistic and Probability in Civil Engineering (ICASP10)*, Tokyo, Japan, 8 p.

267. Canisius T.D.G., Sorensen J.D., and Baker J.W. (2007). "Robustness of structural systems – a new focus for the joint committee on structural safety (JCSS)." *10th International Conference on Application of Statistic and Probability in Civil Engineering (ICASP10)*, Tokyo, Japan, 8 p.

268. Faber M.H., Maes M.A., Baker J.W., Vrouwenvelder T., and Takada T. (2007). "Principles of risk assessment of engineered systems." *10th International Conference on Application of Statistic and Probability in Civil Engineering (ICASP10)*, Tokyo, Japan, 8 p.

269. Baker J.W. (2007). "Automated identification of velocity pulses in near-fault ground motions." *Seismological Society of America Annual Meeting*, Kona, Hawaii.

270. Baker J.W. and Faber, M.H. (2006). "Sampling strategies to detect threshold excursions in random fields." *12th IFIP WG7.5 Working Conference on Reliability and Optimization of Structural Systems*, Kobe, Japan, 8 p.

271. Baker J.W. (2006). "Quantitative classification of near-fault ground motions." *Southern California Earthquake Center (SCEC) Annual Meeting*, Palm Springs, California.

272. Baker J.W., and Faber, M.H. (2006). "Geostatistics for modeling of soil spatial variability in Adapazari, Turkey." *Interdisciplinary Workshop on Management of Earthquake Risks*, Zurich, Switzerland.

273. Baker J.W., Bayraktarli Y.Y., and Faber M. (2006). "Accounting for soil spatial variability when assessing liquefaction risk." *Second International Forum on Engineering Decision Making*, Lake Louise, Canada, 18 p.

274. Faber M., Maes M.A., Straub D., and Baker J.W. (2006). "On the quantification of robustness of structures." *25th International Conference on Offshore Mechanics and Arctic Engineering (OMAE)*, Hamburg, Germany, 9 p.

275. Haselton C. and Baker J.W. (2006). "Ground motion intensity measures for collapse capacity prediction: Choice of optimal spectral period and effect of spectral shape." *8th National Conference on Earthquake Engineering*, San Francisco, California, 10 p.

276. Matsuki S., Billington S.L., and Baker J.W. (2006). "Impact of long-term material degradation on seismic performance of a reinforced concrete bridge." *8th National Conference on Earthquake Engineering*, San Francisco, California, 10 p.

277. Evans J.R. and Baker J.W. (2006). “Spatial covariance of ground motions in NGA data.” *American Geophysical Union (AGU) Fall Meeting*, San Francisco, California, S12B-01.

278. Baker J.W., Cornell C.A., Tothong P. (2005). “Disaggregation of Seismic Drift Hazard.” *9th International Conference on Structural Safety and Reliability (ICOSSAR05)*, Rome, Italy, 7 p.

279. Baker, J.W. (2005). "Vector-Valued Ground Motion Intensity Measures for Probabilistic Seismic Demand Analysis." *Ph.D. Thesis*, Stanford University; Stanford, California (co-published as Blume Center Technical Report #150 and PEER Technical Report 2006/08), 321p.

280. Baker, J.W. and Cornell, C.A. (2004). "Choice of a Vector of Ground Motion Intensity Measures for Seismic Demand Hazard Analysis." *13th World Conference on Earthquake Engineering*. Vancouver, Canada, 15 p.

281. Baker, J.W. and Cornell, C.A. (2003). "Uncertainty Specification and Propagation for Loss Estimation Using FOSM Methods." *Ninth International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP9)*. San Francisco, California, 8 p.

282. Baker, J.W. and Cornell, C.A. (2003). "Uncertainty Specification and Propagation for Loss Estimation Using FOSM Methods." *PEER Technical Report 2003-07*. Berkeley, California, 89 p.