

# Jack W. Baker

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*CV Date: 8/12/2024*

## 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

- Invited member of the Stanford Leadership Academy, 2023-24
- 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 the textbook 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

## **ADVISING AND COLLABORATION**

### ***Current Ph.D. Students***

1. Omar Issa, Anticipated date of graduation: 2024
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***

Simona Meiler (2024-present)  
Nikola Blagojevic (2024-present)  
Neetesh Sharma (2022-2024), Now at Florida State University/Florida A&M University  
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)***

Peter Lee (2023-2024)

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

***Other M.S. Research Students (non-exhaustive list)***

Victor Calderon (2024)  
Bofan Yu (2024)  
Chuting Sun (2024)  
Anna Cecil (2024)  
Samson Chau (2024)  
Rahemeen Ahmed (2023)  
Lu Tang (2023)  
Jaewon Saw (2020-2021)  
Yiwen Dong (2018-2019)  
Tong Liu (2018-2019)  
Zhijuan Li (2017-2018)  
Abhishek Sarkar (2015)  
Yue Hua (2014-2015)  
Ju-Young Shin (2013)  
Bo Shen (2012-2013)  
Ji Yun Lee (2010)  
Yang Dang (2010)  
Sara Jozefiak (2006-2007)

***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

***PhD Thesis Committee Member (non-exhaustive list)***

Jenny Skerker, present  
Yiwen Dong, present  
Yongsoo Park, present  
Mofan Zheng, present  
Alan Poulos, 2023  
Melissa Zirps, 2023  
Francisco Galvis, 2022  
Irene Alisjahbana, 2022  
Amanda Gaggioli, 2022  
Ziyi Yang, 2021  
Weixuan Gao, 2021  
Max Ferguson, 2020  
Fatimah Al-Ismail, 2020  
Laura Eads  
Eileen Martin  
Anna MacPherson

***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](http://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)
  - o Ang Award Committee, 2021-2022
- Consortium of Universities for Research in Earthquake Engineering (CUREE)
  - o Member of Board of Directors, 2011-2012.
  - o Member of Executive Committee, 2012
- Earthquake Engineering Research Institute (EERI)
  - o Editor in Chief, Earthquake Spectra, 2023-present
  - o Editor, Earthquake Spectra, 2018-2022
  - o Associate Editor, Earthquake Spectra, 2013-2018
  - o Shah Family Innovation Prize Selection Committee, 2015-2021

- Joint Committee on Structural Safety (JCSS)
- Civil Engineering Risk and Reliability Association
  - o Member of Board of Directors, 2015-present
  - o Treasurer, 2015-present
- Pacific Earthquake Engineering Research (PEER) Center
  - o Member of Research Committee, 2017-2019
- Seismological Society of America (SSA)
  - o Associate Editor, Bulletin of the Seismological Society of America, 2008-2013.
- Southern California Earthquake Center (SCEC)
  - o Member of Planning Committee, 2011-2019
- North American Alliance of Hazards and Disaster Research Institutes

## **UNIVERSITY AND DEPARTMENTAL SERVICE**

- Associate Dean for Faculty Affairs, Stanford Doerr School of Sustainability, 2022-present
- Search committee member for the inaugural Director of the Stanford Sustainable Societies Institute, 2024
- Evaluation committee member for faculty candidate, CEE department, 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, 2023-present
- Member of graduate curriculum committee, CEE, 2022-present
- Coordinator of CEE 298 seminar series, 2012-present
- 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
- Tenure committee member, Haeyoung Noh, 2021-2022
- Search committee member for the inaugural Dean of the Stanford Doerr School of Sustainability, 2021-2022
- Fill-in 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
  - o President of the Board, 2017-2018
  - o 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
- 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:
  - o Earthquake Engineering and Structural Dynamics, 2016-present
  - o Structural Safety, 2017- present
  - o Earthquake Spectra, 2013-2018
  - o Bulletin of the Seismological Society of America, 2008-2013.
  - o 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
  - o "Thoughts on Writing," Oregon State University Civil and Construction Engineering's Write Club, March 2020.
  - o "Technical Writing Skills," Earthquake Engineering Research Institute Younger Members Forum, December 2020.
  - o "Getting Published, with a focus on Earthquake Spectra," Earthquake Engineering Research Institute, February 2021.
  - o "Transitioning from Graduate Studies to Securing Faculty Positions," Canadian Society for Civil Engineering, May 2021.
  - o "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
  - Israeli 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
- 11<sup>th</sup> National Conference on Earthquake Engineering, Los Angeles, 2018
- 16th World Conference on Earthquake Engineering, Santiago, 2017
- 10<sup>th</sup> Pacific Conference on Earthquake Engineering, Sydney, 2015
- Engineering Mechanics Institute Conference, 2015
- 10<sup>th</sup> National Conference on Earthquake Engineering, Anchorage, 2014
- 4<sup>th</sup> 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
- 3<sup>rd</sup> 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.

| <i>Course #</i> | <i>Title</i>                 | <i>Term</i> | <i>Enroll.</i> | <i>Amt. Lrn.</i> | <i>Inst. Qual.</i> |
|-----------------|------------------------------|-------------|----------------|------------------|--------------------|
| 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 |
| CEE 288  | Seismic Hazard and Risk             | Win 2024  | 32 | 4.8 | 4.9 |
| CEE 298  | SEG Seminar                         | Win 2024  | 46 | 4.3 | 4.5 |

## 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 10<sup>th</sup> 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 10<sup>th</sup> 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: The Doerr School of Sustainability and Stanford Urban Resilience Initiative,” Japan-US Research Collaboration Week 2024, July 2024.
- “Utilization of the conditional mean spectrum in risk and building code assessments,” 18<sup>th</sup> World Conference on Earthquake Engineering, invited talk. July 2024.
- “Physics-based ground motion simulations as a tool for earthquake engineering,” 18<sup>th</sup> World Conference on Earthquake Engineering, invited talk. July 2024.
- “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, 1<sup>st</sup> 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)**

- “A predictive model for post-earthquake displacement based on housing damage and social factors,” 18<sup>th</sup> World Conference on Earthquake Engineering. 2024.
- “Next-generation geologic hazard event scenarios to support decision-making for community resilience,” 18<sup>th</sup> World Conference on Earthquake Engineering. 2024.
- “Bayesian analysis to account for path and site effects in spatial ground motion correlation models,” 18<sup>th</sup> World Conference on Earthquake Engineering. 2024.
- "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 Francisco 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.*

### **Textbooks**

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

### **Archival Journal Publications**

1. Baker, J. W., Crowley, H., Wald, D., Rathje, E., Au, S.-K., Bradley, B. A., Burton, H., Cabas, A., Cattari, S., Cauzzi, C., Cavalieri, F., Contreras, S., Costa, R., Eguchi, R. T., Lallemant, D., Lignos, D. G., Maurer, B. W., Molina Hutt, C., Sextos, A., Seyhan, E., Silva, V., Sucuoğlu, H., Taciroglu, E., and Thompson, E. M. (2024). "Sharing data and code facilitates reproducible and impactful research." *Earthquake Spectra*, 40(3), 2210–2218.
2. Sánchez-Silva, M., and Baker, J. W. (2024). "Dynamic Infrastructure Systems: advancing sustainable urbanization and climate change." *Environment Systems and Decisions*.
3. **Bodenmann, L.**, Baker, J. W., and Stojadinović, B. (2024). "Accounting for ground motion uncertainty in empirical seismic fragility modeling." *Earthquake Spectra* (in press).
4. **Bowers, C.**, Serafin, K. A., and Baker, J. W. (2024). "Uncovering Drivers of Atmospheric River Flood Damage using Interpretable Machine Learning." *Natural Hazards Review*, 25(3), 04024022.
5. **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.
6. **Mongold, E.**, *Costa, R.*, Zsarnóczy, Á., and Baker, J. W. (2024). "Modeling post-disaster recovery: Accounting for rental and multi-family housing." *Earthquake Spectra*, 40(2), 1353–1375.
7. **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*, 40(1), 674–704.
8. **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.
9. *Costa, R.*, and Baker, J. W. (2024). "A methodology to estimate postdisaster unmet housing needs using limited data: Application to the 2017 California wildfires." *Risk Analysis*, 44(4), 850–867.
10. Baker, J. W., Almeter, E., Cook, D., Liel, A. B., and Haselton, C. (2024). "A model for partially dependent component damage fragilities in seismic risk analysis." *Earthquake Spectra*, 40(1), 609–628.

11. **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.
12. **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.
13. **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.
14. **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.
15. **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.
16. **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.
17. **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.
18. **Markhvida, M., and Baker, J. W.** (2023). “Modeling future economic costs and interdependent industry recovery after earthquakes.” *Earthquake Spectra*, 39(2), 914–937.
19. **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.
20. **Loos, S., Lallemand, 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).
21. **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.
22. **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.
23. **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.
24. **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.

25. **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.
26. **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.
27. **Loos, S.**, **Levitt, J.**, **Tomozaawa, K.**, Baker, J. W., and Lallemand, D. (2022). "Efficacy of damage data integration: A comparative analysis of four major earthquakes." *Natural Hazards Review*, 23(4), 04022026. *Selected Editor's Choice*.
28. **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.
29. **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.
30. 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.
31. **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.
32. **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.
33. 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.
34. **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.
35. **Argyroudis, S. A.**, **Mitoulis, S. A.**, **Chatzi, E.**, Baker, J. W., **Brilakis, I.**, **Gkoumas, K.**, **Vousdoulas, 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<sup>1</sup>.
36. **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).

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



37. **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.
38. *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.
39. 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.
40. **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.
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<sup>6</sup> Recipient of the 2011 Earthquake Spectra Outstanding Paper Award

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### **Other Publications**

131. Anderson, J. G., Atkinson, G. M., Baker, J. W., Campbell, K. W., DeShon, H. R., Jordan, T. H., Shome, N., and Stewart, J. P. (2024). "Recommendations on best available science for the United States National Seismic Hazard Model." *18th World Conference on Earthquake Engineering*, Milan, Italy.
132. Baker, J. W., Haselton, C. B., Almeter, E., and Cook, D. (2024). "FMEA P-58 resilience analysis of building portfolios considering ground motion correlations." *18th World Conference on Earthquake Engineering*, Milan, Italy.
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138. *Sharma, N.*, and Baker, J. W. (2024). "Selecting earthquake scenarios for risk analysis that preserve joint distributions of regional ground-motion intensities." *18th World Conference on Earthquake Engineering*, Milan, Italy.
139. **Zhu, T.**, Issa, O., Markhvida, M., Costa, R., and Baker, J. W. (2024). "Simulating the aftermath of earthquakes on regional economies using an extended adaptive regional input-output model." *18th World Conference on Earthquake Engineering*, Milan, Italy.
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141. Galvis, F. A., Deierlein, G. G., Issa, O., Zsarnoczay, A., Hutt, C. M., and Baker, J. W. (2023). "Functional Recovery Assessment of Tall Buildings with pre-Northridge Welded Steel Moment Frames." *Pacific Conference on Earthquake Engineering*, Vancouver, British Columbia.
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143. 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.



144. **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.
145. **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.
146. Galvis, F. A., Deierlein, G. G., Molina Hutt, C., **Issa, O.**, Baker, J. W., and Zsarnóczyay, 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.
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148. **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.
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151. **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.
152. **Zhang, J.**, Costa, R., Zsarnóczyay, 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.
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