

Exponent®
Engineering & Scientific Consulting

Ezra Jampole, Ph.D., P.E.

Principal Engineer | Civil and Structural Engineering
New York
+1-212-895-8139 | ejampole@exponent.com

Professional Profile

Ezra Jampole, Ph.D., P.E., is a principal in Exponent's Civil & Structural Engineering practice with over 10 years of experience in structural failure investigations, risk analysis, and infrastructure dispute resolution. He specializes in expert witness support, utility wildfire and climate risk quantification, and performance-based structural engineering across energy, transportation, and building sectors.

Dr. Jampole advises utilities, energy generators, transportation authorities, developers, construction managers, engineering design firms, and legal counsel on structural failure investigations, probabilistic and quantitative risk analysis, international construction disputes, construction defects, risk-informed capital project investments, and adjacent construction disputes, with particular depth in identifying the causes of structural failures and natural hazard risk analysis for energy and infrastructure.

Probabilistic and Quantitative Risk Analysis

Dr. Jampole performs probabilistic and quantitative risk assessments (PRA and QRA) for electric utilities, gas utilities, bridges, buildings, dams, and other infrastructure to support asset management, enterprise risk management, capital project planning, and regulatory compliance. He has a particular focus on natural hazards, including seismic hazard, flooding, extreme wind, wildfire ignitions caused by structural failures, and cold weather risks.

Dr. Jampole has led the development of engineering-based quantitative and probabilistic risk analysis models that translate physical failure mechanisms and natural hazards into decision-ready measures of risk for electric and gas utilities. His analysis combines first-principles engineering, probabilistic hazard and fragility analysis, historical failure and outage data, and, where appropriate, statistical calibration to estimate asset-level failure probabilities and aggregate risk across large utility systems.

The resulting models have been used to compare and prioritize risk-mitigation strategies, including undergrounding, covered conductors, changes in phase spacing, pole upgrades, and other wildfire mitigations; support long-term asset-management and resilience planning; inform cost-benefit and investment decisions; and provide technical support for regulatory filings. Dr. Jampole has published on probabilistic risk analysis, wildfire risk mitigation, and the use of fragility curves in climate change risk analysis, laying the technical foundation used to satisfy regulatory requirements, insurers, and risk-conscious investors.

Forensic Structural Failure Investigations

Dr. Jampole has extensive experience investigating structural failures and assessing the origin, cause, and extent of damage to buildings and civil infrastructure. His work has addressed structures subjected to earthquakes, hurricanes, and other extreme weather events, flooding, adjacent construction, corrosion

and deterioration, settlement, and long-term performance issues. His investigations have included the collapse of bridges and buildings, water intrusion into metro stations, earthquake damage to schools and other buildings, foundation and underpinning failures, and damage associated with construction activities.

Dr. Jampole's experience encompasses steel, concrete, and wood-framed buildings as well as bridges, viaducts, highways, tunnels, metro systems, and other complex infrastructure, across engagements that span the project lifecycle, including failures during construction, service life, renovation, dismantling, and demolition. He approaches these investigations by combining field observations and engineering judgment with analytical methods including nonlinear structural analysis, finite element and applied element analysis, probabilistic hazard analysis, and incremental dynamic analysis.

Dr. Jampole's investigative work is reinforced by an active publication record addressing structural failure, forensic engineering, and lessons from extreme events. Recent publications include work on seismic performance and damage assessment of bridges following the 2023 Türkiye earthquakes, numerical modeling of damaged bridges, distinguishing earthquake-induced damage from pre-existing conditions in older buildings, tornado effects on buildings, technical issues in design/build disputes from an expert-witness perspective, and assessment of damage arising from adjacent construction. He also teaches a graduate course in forensic structural engineering at Columbia University, providing an additional connection between his investigation and expert-witness practice and the broader development and communication of forensic engineering methods.

International Arbitration & Disputes

Dr. Jampole has significant experience supporting international arbitration matters involving complex engineering and infrastructure disputes, with particular emphasis on structural performance, engineering standard of care, and the technical causes of construction and design issues. His international arbitration work has involved major infrastructure, including airports, bridges, viaducts, highways, tunnels, metro systems, and energy facilities, where he has evaluated the performance of owners, contractors, and designers, investigated the causes of change orders, and assessed field design changes and other disputed technical issues.

Dr. Jampole has conducted expert witness investigations and provided testimony in international arbitration proceedings for engagements through the International Chamber of Commerce (ICC), applying his structural and forensic engineering expertise to questions involving damage, failure, causation, and engineering standard of care. He has published on themes in design/build disputes from a technical expert witness perspective.

Adjacent Construction

Dr. Jampole has substantial experience investigating adjacent construction damage and disputes, particularly those involving excavation, underpinning, dewatering, pile installation, construction vibration, demolition, and other activities that may affect neighboring structures. His forensic evaluations focus on determining whether observed distress is attributable to nearby construction or represents pre-existing conditions, using evidence such as pre-construction surveys, observed damage patterns, indicators of recency, optical and crack monitoring, vibration data, construction sequencing, and site conditions. His investigative experience includes matters involving partial collapse and collapse as well as damage allegations in dense urban environments.

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, Stanford University, 2016

M.Sc., Civil and Environmental Engineering, Stanford University, 2013

B.S., Civil Engineering, Northeastern University, 2011

Earthquake Engineering Research Institute: Friedman Family Visiting Professionals Program Lecturer, 2019-present

Earthquake Engineering Research Institute: Younger Member Award 2018

National Science Foundation Graduate Research Fellow, 2012-2015

John D. and Mary L. Carpenter Fellowship, Stanford University, 2011-2012

Chi Epsilon Joseph L. Brandes National Scholarship, 2011

Carl S. Ell Scholarship, Northeastern University, 2006-2011

Licenses and Certifications

Professional Engineer Civil, California, #89153

Professional Engineer, Connecticut, #PEN.0035565

Professional Engineer, Delaware, #33145

Professional Engineer, Idaho, #4161379

Professional Engineer, Maine, #PE18009

Professional Engineer, Maryland, #66741

Professional Engineer Civil, Massachusetts, #57085

Professional Engineer, Michigan, #6201315921

Professional Engineer, New Jersey, #24GE05847000

Professional Engineer, New York, #101955

Professional Engineer, Pennsylvania, #PE093958

Professional Engineer, Rhode Island, #PE.0014186

Professional Engineer Civil, Vermont, #018.0135792

Professional Engineer Civil, Washington, #24028128

Academic Appointments

Adjunct Associate Professor at Columbia University – CIEN E4210 Forensic Structural Engineering 2022-present

Adjunct Professor at the New Jersey Institute of Technology – CE 634 Structural Dynamics 2017-2022

Professional Affiliations

Earthquake Engineering Research Institute (EERI) member

American Society of Civil Engineers member

ASCE 7-28 Future Loads Committee member

Structural Engineering Association of New York member

Society of Risk Analysis member

Reviewer for Engineering Structures, Earthquake Spectra, Journal of Structural Engineering

Publications

Dutta, D., Burton, H., Liu, Y., Jampole, E. and Bean, B., 2026. Probabilistic risk-based assessment of structural performance under rain loads. Reliability Engineering & System Safety, p.113401.

Bhattacharjee, G., Jampole, E., Wu, Y., Bhargava, Y., and Shahsiah, A. A probabilistic method for estimating rates of pipeline leaks and ruptures due to arc faulting in shared utility rights-of-way. Proceedings of the International Council on Large Electric Systems (CIGRE) Conference, Paris, France, 2026.

Bhattacharjee, G. and Jampole, E. Quantifying the probability of avian electrocution on overhead transmission and distribution structures. Proceedings of the International Council on Large Electric Systems (CIGRE) Conference, Paris, France, 2026.

West, J., Jampole, E., Levine, N., Kemal, A., and Menesses, M. Modeling wildfire-induced thermal risk to above-ground gas infrastructure under future climate scenarios. Proceedings of the American Society of Civil Engineers UESI Pipelines Conference, Detroit, Michigan, 2026.

Faraji, S., Shokrabadi, M., Jampole, E., and Medhekar, S. Hyperscale data centers: risks, reliability, and interconnection. Western Energy Magazine, Spring 2026 Issue (pp. 17-20).

Jampole, E. and Morgan, T. Cracks, claims, and culpability: Assessing damage from adjacent construction. American Bar Association Under Construction Magazine, Midwinter 2026 Issue.

Bhattacharjee, G., Jampole, E., and Palmquist, K. Considering community: new tools allow utilities to consider environmental justice when investing in power grids. Western Energy Magazine, Spring 2025 Issue (pp. 24-28).

Jampole, E. and McDonald, B. Fragility curves for quantifying physical climate risk in the electric power sector. Electric Power Research Institute Climate READi Technical Report. April 2025.

McDonald, B., Griffith, M., Bhattacharjee, G. and Jampole, E., 2025. A quantitative risk-based framework for asset health assessment of overhead lines. In The Sustainable Power Grid (pp. 59-83). Elsevier.

Jampole E, and Bhattacharjee, G. Quantitative risk analysis for utilities. 18th U.S.-Japan-New Zealand Workshop on the Improvement of Structural Engineering and Resilience, Applied Technology Council, San Diego, California, 2024.

Kytömaa H, Jampole E, McDonald B. Proactive Risk-Informed Hardening for Cold Weather Grid Reliability. WE Magazine 2024; 20-23.

Bas, S., Hunt, J., Gencturk, B., Jampole, E., Sonmezer, Y.B., Chancellor, B., Bassal, P., Celiker, M.,

Apaydin, N. and Sezen, H., 2024. Seismic performance and damage assessment of bridges during the 2023 Kahramanmaraş, Türkiye earthquakes (M w= 7.8, M w= 7.6). Earthquake Spectra, DOI: 10.1177/87552930241262043.

Martin, A., Jampole, E. and Hunt, J., Numerical modeling of damaged bridges in Türkiye following the Kahramanmaraş earthquake events. Proceedings of the 18th World Conference on Earthquake Engineering, 18WCEE, Milan, Italy, 2024.

Jampole, E. and Hunt, J. Insights for the utility industry in the aftermath of the 2023 Türkiye – Syria Earthquake. Western Energy Magazine, Summer 2023 Issue (pp. 22-27).

Bhattacharjee, G., Jampole, E. and Kemal, A., A Probabilistic Method to Assess the Risk of Contamination-Induced Insulator Flashover. In ASCE Inspire 2023 (pp. 683-691).

Jampole E., Kenawy, M. Probabilistic Risk Assessment of Electric Power Infrastructure Subjected to Earthquake-Induced Landslides. Proceedings of the 14th International Conference on Application of Statistics and Probability in Civil Engineering, Trinity College, Dublin, Ireland, 9 to 13 July 2023.

Cappa, C., Jampole, E., Wham, B., Hunt, J., Kraus, R., Chancellor, B., Pehlivan, M, Akinci, O., Guldur, B., Bayraktar, M., Citipitioglu, A., Toprak, S., Nacaroglu, E., Ceyaln, M., and Bayram, A., 2023. “Performance of Lifelines.” February 6, 2023 Türkiye earthquakes: report on geoscience and engineering impacts. Earthquake Engineering Research Institute and Geotechnical Extreme Event Reconnaissance Association (USA) and the Earthquake Engineering Association and Earthquake Engineering Foundation of Türkiye. pp. 280-347.

Tariq, H., Jampole, E.A. and Bandelt, M.J., 2023. Seismic collapse assessment of archetype frames with ductile concrete beam hinges. Resilient Cities and Structures, 2(1), pp.103-119.

Amoroso, A, Jampole, E, and Morgan, T. Tornado effects on buildings: are target performance objectives consistent with recent damage observations? Structure Magazine. July 2022.

Jampole E, Osteraas, O. Distinguishing between earthquake-induced and pre-existing conditions in older buildings following earthquakes. Proceedings of the 12th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Salt Lake City, UT, 27 June to 1 July 2022.

Jampole E, Amoroso, S, Morgan, T, and McDonald, B. Themes in design/build disputes, from a technical expert witness perspective. Construction Law International, Volume 17 Issue 1, March 2022.

Tariq, H., Jampole, E.A. and Bandelt, M.J., 2021. Development and Application of Spring Hinge Models to Simulate Reinforced Ductile Concrete Structural Components under Cyclic Loading. Journal of Structural Engineering, 147(2), p.04020322.

Jampole, E., Swensen, S., Miranda, E. and Deierlein, G.G., 2020. Parametric Study of Seismic Isolation Properties for Light-Frame Houses. Journal of Structural Engineering, 146(10), p.04020207.

He, T., Hulsey, A., Jiminian, M., Jampole, E., Morales Cartagena, A., Pérez Irizarry, A., Shrestha, S., and Wichman, S. Reconfiguring New Zealand’s Built Environment After the 2010-2011 Canterbury Earthquake Sequence and the 2016 Mw 7.8 Kaikoura Earthquake. EERI-LFE Travel Study Report. July 2019.

Jampole, E. Cushing, Oklahoma: What’s Happened to the historic downtown? EERI’s Younger Members Committee Blog. Earthquake Engineering Research Institute. September 15, 2019. https://ymc.eeri.org/cushing-oklahoma-whats-happened-to-the-historic-downtown/

Jampole, E., Miranda, E. and Deierlein, G.G., 2019. Predicting Earthquake-induced Sliding Displacements using Effective Incremental Ground Velocity. Earthquake Spectra.

Kytomaa HK, Boehm P, Osteraas J, Haddad B, Hacker J, Gilman L, Jampole E, Murphy P, and Souri S. An integrated method for quantifying and managing extreme weather risks and liabilities for industrial infrastructure and operations. Process Safety Progress. 2019; e12087. https://doi.org/10.1002/prs.12087.

Kytomaa, H., Boehm, P., Osteraas, J., Haddad, B., Hacker, J., Gilman, L., Jampole, E., Murphy, P., and Souri, S. "A Non-Stationary Approach to Conducting Site-Specific Integrative Risk Management Assessments at Industrial Facilities at Risk from Extreme Weather Events." Proceedings from the American Institute of Chemical Engineers 2019 Spring Meeting and 15th Global Congress on Process Safety, New Orleans, Louisiana, 2019.

Tariq, H, EA Jampole, and MJ Bandelt (2019). "Calibration of Plastic- and Fiber-Hinge Models for Simulation of Reinforced HPFRCC Flexural Elements." Engineering Structures, 182: 62-78. DOI: 10.1016/j.engstruct.2018.11.076.

Jampole E, Hunt J. Structural performance factors and building damage following the 19 September 2017 Puebla, Mexico Earthquake. 17th U.S.-Japan-New Zealand Workshop on the Improvement of Structural Engineering and Resilience, Applied Technology Council, Queenstown, New Zealand, 2018.

Weiser D, Hunt, Jampole E, Gobbato M. EERI Earthquake Reconnaissance Team Report: M7.1 Puebla, Mexico Earthquake on September 19, 2017. Earthquake Engineering Research Institute, Oakland, CA, 2018.

Jampole E, Miranda E, Deierlein G. Effective incremental ground velocity for estimating the peak sliding displacement of rigid structures to pulse-like earthquake ground motions. Journal of Engineering Mechanics 2018; 144(12):04018113.

Jampole E, Miranda, E, Deierlein, G. Effective incremental ground velocity: an IM to estimate sliding isolation displacement. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA, 2018.

Jampole E, Bomba G, Roufegarinejad A. Earthquake-resilient design of homes in near field regions: a case study of implementing a low-cost base isolation system. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA, 2018.

Gilbert A, Jampole E, Deierlein G, Miranda E. Mapping demand parameters in high-friction sliding isolated houses to identify regions for implementation in the Western U.S. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA, 2018.

Tariq H, Jampole E, Bandelt M. Fiber-based modeling of reinforced HPFRCC hinge regions. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, California, 2018.

Acevedo C, Swensen S, Jampole E, Deierlein G, Miranda E, Fell B. Comparing the seismic performance of unibody and conventional construction of a two-story wood-frame house. Proceedings of the 11th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, California, 2018.

Taylor J, Celebi M, Greer A, Jampole E, Masroor A, Melton S, Norton D, Paul N, Wilson E, Xiao Y. EERI Earthquake Reconnaissance Team Report: M5.0 Cushing, Oklahoma, USA Earthquake on November 7, 2016. Earthquake Engineering Research Institute, Oakland, California. 2017.

Jampole EA, Deierlein GG, Miranda E, Fell B, Swensen SD, Acevedo CA. An economic sliding isolation system for residential light frame structures. Proceedings of the 16th World Conference in Earthquake

Engineering, 16WCEE, Santiago, Chile, 2017.

Swensen S, Deierlein G, Miranda E, Fell B, Acevedo C, Jampole E. Performance-based seismic assessment of a wood-frame house with strength and stiffness enhancements. Proceedings of the 16th World Conference in Earthquake Engineering, 16WCEE, Santiago, Chile, 2017.

Acevedo CA, Deierlein GG, Miranda E, Fell B, Swensen SD, Jampole EA. Development of a unibody system to improve the performance of lightweight residential wood structures. Proceedings of the 16th World Conference in Earthquake Engineering, 16WCEE, Santiago, Chile, 2017.

Jampole E High-friction sliding seismic isolation for enhanced performance of light frame structures during earthquakes. Doctoral Dissertation. Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, 2016.

Jampole E, Deierlein G, Miranda E, Fell B, Swensen S, Acevedo C. Full scale dynamic testing of a sliding seismically isolated unibody house. Earthquake Spectra 2016.

Morgan T, Jampole E. Performance of base isolated structures in recent pacific rim earthquakes: Lessons learned and implications for US practice. Proceedings of the Structural Engineering Association of California 2016 Conference, SEAOC, Maui, HI, 2016.

Jampole E, Chandramohan R, Frank T, Bandelt M. Shelter, retrofit, and reconstruction of housing: a summary of previously used strategies in developing regions applicable for the 2015 Lamjung, Nepal Earthquake. The World Bank, Washington DC, USA, 2015.

Swensen S, Acevedo C, Jampole E, Miranda E, Deierlein G, Hopkins A, Fell B. Toward damage free residential houses through unibody light-frame construction with seismic isolation. Proceedings, SEAOC 2014 83rd Annual Convention, Indian Wells, CA, 2014.

Jampole EA, Swensen SD, Fell B, Miranda E, Deierlein GG. Dynamic testing of a low-cost sliding isolation system for light-frame residential structures. Proceedings of the 10th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Anchorage, AK, 2014.

Jampole E, Swensen S, Acevedo C, Fell B, Miranda E, Deierlein G. Testing a low cost sliding isolation system for light frame structures. Proceedings, Ten Successful Years of Research within NEES@Berkeley, RFS, Richmond, CA, 2014.

Hajjar JF, Sesen A, Jampole E, Wetherbee A. A synopsis of sustainable structural systems with rocking, self-centering, and articulated energy-dissipating fuses. Report No. NEU-CEE-2013-01, Department of Civil and Environmental Engineering, Northeastern University, Boston, MA, 2013.

Jampole EA, Spurgeon N, Avant T, Farinholt K. Characterization of bio-inspired synthetic hair cell sensors. Proceedings of the 30th International Modal Analysis Conference (IMAC), Jacksonville, FL, January 30-February 2, 2012.

Presentations

Abdollahi, R., Jampole, E., and Vavila, A. “What Lawyers Need to Know: Bridging the Legal-Engineering Divide in Construction Litigation.” New York State Bar Association Seminar. New York, New York. September 30, 2026.

Bhatia, K., Jampole, E., Vecchi, G., and Keys, B. “Rethinking Risk in a Changing Climate.” Marsh Climate Week. New York, New York. September 24, 2026.

Roohi, M., Esteghamati, M., van de Lindt, J., Jampole, E., Filizadeh, R., Sarmadi, H., and Orozco, J. “Translating AI and Analytics into Multi-Sector Action for Earthquake and Multi-Hazard Resilience.” 13th

National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Portland, Oregon. July 14, 2026.

Berman, A., Jampole, E., Masters, S., Reeves, J., and Miller, J. “The Pros and Cons of ADR, including International Arbitration.” 2025 FDCC Corporate Counsel Symposium, Chicago, Illinois. September 15, 2025.

Jampole, E. “Fragility curves for quantitative risk analysis, considering climate change.” Climate READi Fragility Curve Development and Application in Climate Resilience Assessments Webcast. August 27, 2025.

Jampole, E. and Griffith, M. “Performance-based structural design for utilities.” Pacific Northwest Utility Conference Committee Board of Directors Meeting, Portland, Oregon. May 9, 2025.

Jampole, E. and Thompson, A. “Climate adaptation vulnerability assessment for Southern California Edison.” Western Energy Operations Conference, Vancouver British Columbia. April 17, 2025.

Jampole, E. and Camello, N. “Estimating wildfire mitigation effectiveness using quantitative risk analysis.” Distributech, Dallas, Texas. March 26, 2025.

Jampole, E., Palmquist, K., Chedrawe, J., and Foty, C. “New Clean Energy and Dispute Resolution: Mitigating the Risk of Performance Issues and Defects with Novel Technologies.” Webinar Panel. November 6, 2024.

Bozorgnia, P., Jampole, E., Owen, J., Bisadi, M., and Lanz, T. “Risk Mitigation on Major Transit Programs.” Association for the Advancement of Cost Engineering Metro New York Panel. October 30, 2024.

Jampole, E., Bhargava, Y., Kwan, A., and Patrick, B. “A probabilistic risk model for arc faulting between overhead utility structures and buried pipelines.” PHMSA Risk Modeling Workshop, Houston, Texas. October 23, 2024.

Jampole, E. “Ethics seminar: Structural engineering failures and the standard of care.” Structural Engineers Association of New York Seminar, New York, New York. August 15, 2024.

Jampole, E. “Bridge Demolition Gone-Wrong.” ASCE Met Section Spring Seminar, ASCE-STR-0158, New York, New York. May 21, 2024.

Shahsiah, A. and Jampole, E. “Climate Adaptation Vulnerability Assessment for Utility Assets: A Quantitative Approach.” Distributech International 2024, Orlando, Florida. February 28, 2024.

Jampole, E. and Bhattacharjee, G. “Structural Engineering Failure and Risk Analysis.” Rutgers University, Department of Civil & Environmental Engineering Seminar. December 6, 2023.

Jampole, E. “Earthquake Engineering Gone Wrong: Legal and Insurance Disputes.” University of California, Los Angeles, CEE 200 Seminar Series. November 28, 2023.

Jampole, E. “Transportation and Electrical Infrastructure Reconnaissance in Türkiye after the Devastating 2023 Earthquakes.” Earthquake Engineering Research Institute San Diego Chapter, 2023 Kenji Ishihara Colloquium: Advancing Earthquake Engineering in the Wake of the Turkey-Syria Earthquake. October 27, 2023.

Jampole, E. “Summary of Preliminary Observations from March 17-23, 2023 Reconnaissance Investigation of the February 6, 2023 Turkey Earthquake Sequence.” Institution of Civil Engineers, New York Metropolitan Chapter Seminar. October 23, 2023.

Jampole, E. “Summary of Preliminary Observations from March 17-23, 2023 Reconnaissance Investigation of the February 6, 2023 Turkey Earthquake Sequence – Lifelines.” Structural Engineering Association of Northern California, Seismology Committee Meeting. May 30, 2023.

Cappa, R., Jampole, E., Guldur, B., Chancellor, B., Hunt, J., Kraus, R., Pehlivan, M., Wham, B., Toprak, S., and Bayraktar, M. “Summary of Preliminary Observations from March 17-23, 2023 Reconnaissance Investigation of the February 6, 2023 Turkey Earthquake Sequence – Lifelines.” Earthquake Engineering Research Institute Webinar. May 9, 2023.

Cappa, R., Jampole, E., and Wham, B. “EERI Lifelines Reconnaissance Investigation – Overview and Preliminary Observations.” Special Session on the 2023 Turkey/Syria Earthquake Sequence. Earthquake Engineering Research Institute Annual Meeting, San Francisco, CA. April 11, 2023.

Jampole, E. “Defense of Physics-Based Models in Earthquake Engineering.” Machine Learning Applications in Earthquake Engineering: Hope, Hype or Hindrance (A Debate). 12th National Conference in Earthquake Engineering, Earthquake Engineering Research Institute, Salt Lake City, UT. June 30, 2022.

Jampole, E. “Structural Engineering Failures, Safety, and the Standard of Care.” Oregon State University Structural Engineering Institute Seminar. May 9, 2022.

Jampole, E. “Legal and Insurance Disputes in Earthquake Engineering.” EERI Friedman Family Visiting Professionals Program.

- University of California, Los Angeles, Department of Civil and Environmental Engineering. April 9, 2026.
- University of Minnesota, Department of Civil, Environmental, and Geo- Engineering. March 7, 2025
- University of California, San Diego, Department of Structural Engineering. April 23, 2023
- Oregon State University, School of Civil and Construction Engineering. May 9, 2022.
- University of Toronto, Department of Civil and Mineral Engineering. March 15, 2022.
- Cornell University Department of Civil and Environmental Engineering Seminar. Virtual. May 5, 2021.
- University at Buffalo Department of Civil, Structural, and Environmental Engineering Seminar. Virtual. April 16, 2021.
- Johns Hopkins University Civil Engineering Department Seminar. Baltimore, MD, USA. January 30, 2020.

Jampole, E., and Moore, E. “Structural Engineering Failure and Risk Analysis.” University of California, Los Angeles Department of Civil and Environmental Engineering, CEE 200 Seminar. April 19, 2022.

Peraza, D. and Jampole, E. “Parking Deck Collapse.” American Society of Civil Engineering Metropolitan Section, Forensics Group Seminar. Virtual. April 5, 2022.

Jampole, E. “Case Studies in Structural Failure Investigations.” Stanford University CEE290: Structural Performance and Failures, Guest Lecture. Virtual. May 10, 2021.

Miranda, E., Mieler, M., Mitrani-Reiser, J., Fischer, E., and Jampole, E. “LFE into the Future: Conversation with the new Learning from Earthquakes Program Chairs.” Earthquake Engineering

Research Institute Annual Meeting. Virtual. March 25, 2021.

Jampole, E. “Structural Failure Investigations and Legal Disputes.” University of California, Los Angeles Department of Civil and Environmental Engineering, CEE 200 Seminar. Virtual. February 2, 2021.

Jampole, E. “Learning From Earthquakes New Zealand Travel Study Program: Challenges in Rebuilding the Built Environment.” National Earthquake Conference. San Diego, CA, USA. March 6, 2020.

Jampole, E. “Challenges in Rebuilding the Built Environment in New Zealand following Earthquakes.” Earthquake Engineering Research Institute Webinar: Reconnaissance Lessons Learned from the 2019 EERI New Zealand Travel Study Program. May 26, 2020.

Jampole, E. and Pérez Irizarry, A. “Opportunities: Rebuilding Better Following the New Zealand Earthquakes”. EERI Learning From Earthquakes Travel Study Program. Wellington, New Zealand. May 11, 2019.

Jampole, E. and Sain, S. “Machine Learning for Assessing Non-Stationary Hazards and Mitigating Risk from Extreme Weather Events.” American Gas Association Transmission Integrity Management Program Committee Meeting. Nashville, Tennessee. April 30, 2019.

Jampole, E. “Mitigating Risk at Industrial Facilities from Non-Stationary Extreme Weather Hazards.” New Jersey Institute of Technology Civil Engineering Seminar Series. Newark, New Jersey. April 22, 2019.

Jampole, E. “Earthquake Reconnaissance Following the 19 September 2017 M7.1 Puebla-Morelos, Mexico Earthquake.” United States Military Academy Civil Engineering Seminar Series. West Point, New York. April 4, 2019.

Boehm, P., Haddad, R., Kytomaa, H., Jampole, E., Sorkin, R., Harr, P., and Stein, M. “Advances in Managing Climate and Extreme Weather Event Risks and Liabilities for Industrial Infrastructure.” Exponent Webinar. February 28, 2019.

Jampole E. High-friction sliding seismic isolation for light frame structures. University of Canterbury. Christchurch, New Zealand. November 19, 2018.

Jampole E. Seismic isolation for light frame residential structures. Blume Center / Stanford Urban Resilience Initiative Affiliates and Alumni Meeting: Convergence of Performance-Based Engineering with Urban Resilience. Stanford, CA, USA, October 5, 2018.

Jampole E. Rapid damage assessments after earthquakes using the ATC-20 procedure. Post-earthquake Reconnaissance Workshop at the 11th National Conference on Earthquake Engineering. Los Angeles, California, USA, June 28, 2018.

Jampole E. Estimating inelastic displacement in sliding isolation systems using effective incremental ground velocity. Engineering Mechanics Institute, Cambridge, MA, May 30, 2018.

Jampole E. Earthquake reconnaissance following the M7.1 September 19, 2017 Puebla, Mexico Earthquake. ASCE Metropolitan Section Student Competition Dinner, Newark, NJ, May 4, 2018.

Jampole E. Mapping EDPs in high-friction isolated houses. Structures Congress, Fort Worth, TX, April 20, 2018.

Jampole E. Behavior of prototypical concrete frame buildings in Mexico City. EERI Technical Case Studies Webinar: September 19, 2017 Mexico Earthquake, Oakland, CA, April 5, 2018.

Jampole E. Seismic isolation concepts for light frame structures: from research and development to implementation. University of California, Davis Civil Engineering Graduate Seminar Series, Davis, CA,

April 4, 2018.

Jampole E. Building damage reconnaissance following the M7.1 September 19, 2017 Puebla, Mexico Earthquake. New York University EERI Lecture Series, New York, New York, USA, December 4, 2017.

Jampole E. Seismic risk assessment, design, and reconnaissance. New Jersey Institute of Technology Civil Engineering Seminar Series, Newark, New Jersey, USA, December 4, 2017.

Jampole E. Natural hazards engineering in practice. Cornell University Civil Engineering Seminar Series, Ithaca, New York, USA, October 19, 2017.

Jampole E. Uncertainty in friction model parameters for high-friction sliding isolation systems. Engineering Mechanics Institute, San Diego, CA, USA, June 6, 2017.

Jampole E. Reconnaissance following the November 7, 2016 Cushing, OK Earthquake, Post-Earthquake Reconnaissance Workshop at the EERI Annual Meeting. Portland, OR, USA, March 7, 2017.

Jampole EA. High friction sliding seismic isolation for enhanced performance of light frame structures during earthquakes. Northeastern University Structural Engineering Seminar Series, Boston, MA, October 6, 2016.

Jampole EA. Full scale shaking table testing of a low-cost sliding isolation system for light frame buildings. Engineering Mechanics Institute, Stanford, CA, June 17, 2015.

Jampole EA. New concepts to reduce damage in light frame residential structures: the unibody and low-cost isolation. Ten Successful Years of Research within NEES@Berkeley, RFS, Richmond, CA, May 28, 2014.

Jampole EA. Developing a low cost isolation system to achieve "Nearly Damage Free DBE" light frame construction. Quake Summit, Reno, NV, August 8, 2013.

Project Experience

Probabilistic and Quantitative Risk Analysis

Dr. Jampole has performed probabilistic and quantitative risk analysis for major energy and civil infrastructure, as well as residential structures, leading the development of new engineering models using fragility-based approaches.

- Plutonium Facility: Applied advanced structural dynamics and numerical modeling to evaluate the seismic performance of a critical component within a U.S. Department of Energy plutonium storage facility. Developed analysis-based testing criteria to support evaluation of component performance under earthquake demands and provided expert peer review of earthquake ground-motion selection, helping establish a technically rigorous basis for seismic testing and performance assessment.
- Bridge Seismic Risk: Applied structural engineering, seismic risk assessment, and performance-based engineering principles to review the structural evaluation of a bridge located in a high-seismic region. Identified the engineering analyses and risk assessment techniques needed to evaluate and justify a proposed change in use from a railroad bridge to a pedestrian crossing, providing a technically defensible framework for assessing seismic performance and supporting future-use decisions.

- Climate Change Risk Assessment for Southern California Edison: Developed and implemented a probabilistic, performance-based framework for evaluating the vulnerability of electric transmission infrastructure to climate change. Led development of fragility curves and evaluation of aging and degradation mechanisms for wood poles, steel towers, conductors, underground structures, foundations, and insulators, considering changing precipitation, temperature, wildfire, and sea-level conditions. Developed hazard curves from downscaled climate models and integrated them with asset fragilities to estimate annual failure rates under changing climate conditions. The analysis provided a quantitative basis for identifying vulnerabilities and developing asset-specific risk mitigation recommendations.
- Quantitative Risk Assessment of Electric Utility Assets: Developed engineering-based quantitative risk assessment frameworks for evaluating the performance of utility infrastructure exposed to multiple hazards and failure mechanisms. Applied probabilistic and seismic risk analysis methods to assess wood poles and steel transmission towers subjected to earthquake loading and earthquake-induced landslides, and led development of a probabilistic framework for assessing contamination-induced flashover of electrical insulators. The work provided quantitative measures of asset risk to support more rigorous evaluation and management of utility infrastructure.
- Wildfire Mitigation Effectiveness for Southern California Edison**:** Managed and led the technical development of first-principles, engineering-based quantitative risk models to evaluate the effectiveness of wildfire mitigation strategies for electric transmission infrastructure. Developed models addressing ignition mechanisms associated with vegetation, birds, vehicles, balloons, wind-induced failures, and conductor clashing, and evaluated mitigations including undergrounding, covered conductors, changes in phase spacing, bird guards, and pole upgrades. Calibrated the models using historical outage data to quantify overall mitigation effectiveness across multiple hazards and asset types, providing technical inputs for risk spend efficiency calculations and supporting risk-informed investment decisions.
- Benefit-Cost Analysis for Undergrounding: Managed and led the technical development of a benefit-cost framework for evaluating potential undergrounding of portions of nearly 200 feeders within a large electric distribution system. Integrated safety, reliability, and direct financial considerations using statistical analysis of historical outages, wildfire loss analysis, and evaluation of vegetation management and operations and maintenance costs. The analysis provided a consistent quantitative basis for comparing undergrounding investments and prioritizing projects based on their expected benefits and costs.
- Covered Conductor Risk Assessment: Led development of engineering-based quantitative risk models to evaluate the effectiveness of replacing bare overhead conductors with covered conductors for reducing arcing and wildfire ignition risk. Integrated models of wind-induced conductor failure, tree strikes, conductor slapping, and probabilistic aerodynamic modeling of debris bridging between phases. Developed hazard and fragility curves to quantify and compare the occurrence rates of adverse outcomes for bare conductors and multiple covered-conductor configurations, providing a physics-based basis for assessing the relative risk-reduction benefits of alternative conductor technologies.
- Gas Transmission Network Risk Analysis for FortisBC: Managed and led development of a quantitative risk analysis framework for evaluating a large natural gas transmission network exposed to flooding, landslides, earthquakes, and other natural hazards. Integrated engineering assessments of pipeline segments, compressor stations, and pipe-carrying bridges with consequence models addressing financial losses and customer outage days. Applied Monte Carlo simulation to characterize uncertainty and quantify system-level risk, providing a risk-

informed basis for evaluating vulnerabilities and potential mitigation strategies. The analysis supported an application to build a resilient gas supply facility, which was ultimately approved by the regulatory commission without modification.

- Arc Faulting Risk Analysis: Developed a first-of-its-kind engineering-based quantitative risk model to evaluate the potential for electrical arc faulting to damage natural gas transmission pipelines where overhead electric transmission lines cross or pass near gas infrastructure. Applied engineering and probabilistic risk analysis techniques to characterize the conditions leading to arc-fault exposure and resulting pipeline damage, providing a quantitative framework for identifying and evaluating locations where interactions between electric and gas infrastructure could create elevated risk.
- Electric Transmission Physics-Based Asset Vulnerability Risk Model: Managed and led development of an integrated suite of physics-based models to quantify failure and wildfire ignition risk across a large electric transmission system in the Western United States. Developed engineering models addressing wood-pole and crossarm failure, wood decay, steel-structure failure, atmospheric corrosion, aeolian-vibration fatigue and failure of conductors, mechanical wear and fatigue of hardware, tree strikes, avian and balloon contact, and contamination-induced insulator flashover. The work established a common engineering-based framework for quantifying diverse failure and ignition mechanisms and supporting risk-informed wildfire mitigation and asset-management decisions.
- Climate Change Impacts on Wildfire Risk Posed to Natural Gas Transmission Assets: Managed a climate risk analysis study evaluating how changing wildfire conditions could affect a major Canadian utility's natural gas transmission infrastructure. Analyzed multiple downscaled climate models under an SSP5-8.5 scenario and evaluated changes in fire return intervals at asset locations, fire-generated heat flux and exposure duration, and the probability of assets reaching different damage states under those exposures. The analysis connected projected changes in climate and wildfire behavior to engineering measures of asset vulnerability, providing a quantitative basis for understanding potential changes in future infrastructure risk.
- Climate Change Impacts on Rainfall-Induced Landslide Risk Posed to Natural Gas Transmission Assets: Managed a probabilistic climate risk study evaluating how climate change could affect rainfall-induced landslide hazards along a major Canadian utility's natural gas transmission system. Evaluated projected changes in precipitation, antecedent precipitation, soil moisture, and other landslide-related factors under an SSP5-8.5 scenario to characterize changes in future hazard conditions. The analysis provided a quantitative basis for identifying areas of changing landslide exposure and informing longer-term infrastructure risk management and mitigation planning.
- Benefit-Cost Analysis for Wildfire Mitigation Strategies for a West Coast Utility: Managed and led a quantitative benefit-cost and risk analysis of alternative wildfire mitigation strategies, including undergrounding, covered conductors, and covered conductors combined with solar and battery storage. Integrated estimates of wildfire risk reduction and mitigation costs while evaluating the effects of climate change, population and housing growth, and risk aversion on future wildfire risk. The analysis produced benefit-cost ratios and risk-reduction estimates to support comparison and prioritization of mitigation alternatives and provided technical support for numerous utility regulatory filings.
- Consumers Energy Distribution Reliability Regression Analysis: Conducted a statistical analysis of electric distribution reliability to quantify differences in service experiences across customer groups. Applied regression and reliability analysis at both census-tract and distribution-circuit levels using metrics including SAIDI, CAIDI, SAIFI, and CELID, together with evaluation of

customer disconnection rates. The analysis provided a quantitative framework for identifying and characterizing differences in reliability performance across the distribution system and customer populations.

- Seismic Isolation of a Residential Structure: Provided specialized structural dynamics and earthquake engineering guidance for the design of a seismically isolated light-frame residence located approximately one mile from the San Andreas Fault. Performed nonlinear response-history analysis to evaluate seismic performance, developed details for isolation units, and established prototype and production isolator laboratory testing loading protocols consistent with ASCE 7 requirements. Coordinated with peer reviewers to support development and technical evaluation of the isolation system for an exceptionally high-seismic-hazard site.
- Mounted Solar Battery Systems: Applied structural and earthquake engineering expertise to evaluate approaches for mounting solar battery systems to structures in high-seismic regions. Developed conceptual connection details considering seismic demands and the interaction between the battery equipment and supporting structure, providing engineering guidance to support development of appropriate mounting solutions for high-seismic-hazard applications.

Forensic Structural Failure Investigations

Dr. Jampole has performed forensic investigations of building and bridge collapses and evaluated other reported deficiencies in design, construction, and performance.

- Collapse of a Steel K-Frame Bridge in Pennsylvania: Applied forensic structural engineering, finite element analysis, and bridge engineering principles to investigate the collapse of a large steel K-frame bridge. Conducted field investigations and examinations of preserved evidence, analyzed critical structural components, and performed load-rating calculations to evaluate structural performance and determine the cause of collapse. Assessed the adequacy of prior bridge inspections, repair and maintenance recommendations, and the bridge owner's obligations to perform repairs, providing a comprehensive technical evaluation of the factors contributing to the failure.
- Bridge Demolition in Massachusetts: Applied forensic engineering and advanced structural analysis to investigate damage to bridge piers during explosive demolition of the superstructure. Developed applied element method (AEM) models of the demolition sequence and evaluated numerous hypothesized failure scenarios to determine potential causes of the observed damage. Validated analytical results against field conditions, providing a physics-based basis for evaluating the sequence of events and mechanisms that produced the damage.
- Bridge Dismantling Failure in New York: Conducted an expert investigation of a component failure that occurred during dismantling of a long-span bridge, focusing on whether the engineer's dismantling design met the applicable standard of care. Applied structural engineering and construction-sequence analysis to evaluate the planned dismantling approach and alternative methods for felling the structure. Served as a named expert, providing technical analysis of the design decisions and engineering practices associated with the dismantling operation.
- Partial Collapse of a Parking Garage in Massachusetts: Applied forensic structural engineering techniques to investigate the partial collapse of precast structural members during dismantling of a parking garage. Conducted a field investigation, determined the cause of the incident, and evaluated the demolition design and associated engineering standard of care. The investigation provided a technical basis for understanding the collapse mechanism and assessing the adequacy of the engineering associated with the dismantling operation.

- Collapse of a Parking Deck in New York: Conducted a forensic structural investigation of the partial collapse of a parking deck, including a comprehensive evaluation of the condition and stability of the remaining structure. Applied structural engineering judgment to assess whether the surviving portions of the deck could be safely shored and stabilized for repairs, providing technical guidance to support post-collapse safety and repair decisions.
- Failure of a Railing in New Jersey: Applied forensic structural engineering principles to investigate the failure of a railing during a concert that resulted in multiple injuries. Evaluated the physical and structural factors associated with the failure to determine its cause, providing a technical basis for understanding the failure mechanism and the circumstances leading to the incident, including the adequacy of maintenance procedures.
- Scaffold Collapse in New York: Conducted a forensic engineering investigation into the collapse of scaffolding during a windstorm. Applied structural and wind engineering principles to evaluate the behavior of the scaffold under environmental loading and determine the cause of collapse, providing an engineering basis for understanding the factors contributing to the failure.
- Collapse of a Roof in Pennsylvania: Applied forensic structural engineering to investigate the collapse of a roof at an industrial facility following a rainstorm. Evaluated the original structural design, subsequent modifications, facility use, and maintenance history to identify factors contributing to the collapse. The investigation integrated structural performance and historical information to establish the technical causes and contributing conditions associated with the failure.
- Collapse of a Bus Duct: Conducted a forensic investigation into the collapse of a bus duct within an underground electrical vault. Combined field investigation, preservation and examination of physical evidence, and materials testing to determine the cause of failure, providing an evidence-based technical assessment of the mechanisms contributing to the collapse.
- Collapse of an Awning in Massachusetts: Applied forensic structural engineering to investigate an awning collapse that resulted in an injury. Evaluated the physical conditions and failure mechanism and assessed whether observable deficiencies should have been identified and corrected by the owner. The investigation addressed both technical causation and the engineering significance of conditions that existed before the collapse.
- Collapse of a Retaining Wall in Massachusetts: Investigated the collapse of a basement retaining wall during demolition of the basement slab and associated underpinning activities. Applied forensic structural engineering and construction-sequence analysis to compare field activities with the demolition plans and determine the mechanism leading to failure. The investigation determined that portions of the slab were demolished inconsistently with the plans, providing a technical basis for identifying the cause of the collapse.
- Collapse during Construction of a Concrete Curing Chamber in Maine: Applied forensic structural engineering to investigate the collapse of cold-formed steel framing for a concrete curing chamber during construction. Evaluated the structural behavior and conditions present during erection to determine the cause of collapse, providing a technical assessment of the factors contributing to failure during the construction phase.
- Collapse of a Crane During Erection in Delaware: Conducted a forensic engineering investigation into the collapse of a crane during erection. Evaluated the circumstances and engineering issues associated with the failure, including the obligations of the involved parties with respect to site safety. The investigation provided a technical basis for assessing both the cause of the collapse and the responsibilities associated with the erection operation.

- Collapse of Stadium Seating in New York: Applied forensic structural engineering principles to investigate the collapse of sections of seating at a large stadium following impact by a crane during erection. Evaluated the structural response and circumstances surrounding the impact to determine the cause of the seating collapse, providing a technical basis for understanding the relationship between construction operations, impact, and resulting structural damage.
- Failure of a Coastal Bulkhead in New Jersey: Applied structural, materials, and forensic engineering principles to investigate the failure of a fiber-reinforced polymer bulkhead at a coastal condominium complex. Evaluated the adequacy of the structural design and material specifications and analyzed the observed failure conditions to determine the cause of failure, providing a comprehensive assessment of both design and material performance.
- Post-Earthquake Damage Assessment of Schools in Oklahoma: Conducted forensic structural investigations of alleged earthquake damage to numerous school buildings, applying earthquake engineering principles to distinguish earthquake-related distress from other conditions. Evaluated the cause of observed damage and assessed the implications of that damage for the buildings' future seismic performance, providing a technical basis for understanding both the immediate effects of the earthquake and the structures' expected behavior during future seismic events.
- Earthquake-Resisting System Evaluation in California: Applied advanced earthquake engineering and finite element analysis to investigate allegations that water leakage had reduced the seismic resistance of a tall building in a seismically active region. Developed and analyzed models representing numerous damage scenarios and earthquake intensities to evaluate their effects on structural performance. The analysis provided a quantitative basis for assessing whether the reported conditions materially affected the building's earthquake-resisting capacity.
- Post-Hurricane Damage Assessments in the Southeastern U.S.: Conducted numerous forensic investigations of hurricane-related damage to residential and commercial buildings. Applied structural, wind, and forensic engineering principles to differentiate damage caused by wind from that caused by water and to distinguish storm-related damage from pre-existing conditions. These evaluations provided an engineering basis for determining damage causation and attributing observed building conditions to appropriate mechanisms.
- Truck Strikes on Infrastructure in the Northeastern U.S.: Conducted forensic structural evaluations of numerous incidents involving large trucks striking bridges and buildings. Assessed resulting structural damage and applied engineering analysis and judgment to evaluate appropriate repair strategies and, where applicable, demolition decisions. The work supported rapid and technically informed decision-making regarding the safety, repairability, and disposition of damaged infrastructure.
- Highway Expansion in the Western U.S.: Served as an appointed expert evaluating the adequacy of the tender design for a major highway widening project and whether the available design information provided an appropriate technical basis for bid pricing. Evaluated engineering issues involving new and replacement bridges, bearings, abutments, sign structures, culverts, and drainage systems, applying infrastructure design and standard-of-care expertise to assess the completeness and adequacy of the tender-phase design.
- Railway Bridge in the Western U.S.: Applied bridge engineering and design-review expertise to evaluate the adequacy of the tender design for a railway bridge. Assessed the design against applicable ARIBA standards, providing a technical basis for determining whether the tender-stage engineering satisfied relevant design requirements.
- Condominium Design in New Jersey: Served as an appointed expert evaluating the seismic design of a concrete condominium building where the adequacy of the design was challenged

based on the identification and selection of the site soil classification. Performed extensive structural analysis and applied seismic design and code expertise to evaluate the implications of the disputed soil classification and determine whether the building satisfied applicable codes and standards.

- Partition Wall Design Evaluation in New York: Served as an appointed expert evaluating the adequacy of the tender-phase design of partition walls within a subway-system depot facility. Applied structural engineering and design-review expertise to assess the information available during bidding and evaluate whether the partition-wall subcontractor could reasonably have anticipated the required member sizes and structural deflections. The analysis provided a technical basis for evaluating design adequacy and the information available to the subcontractor at the tender stage.
- Tall Building Partition Wall Cracking in New Jersey: Conducted a forensic investigation of widespread cracking in partition walls and ceilings throughout a high-rise condominium building. Evaluated construction documents, specifications, and observed conditions to identify the mechanism responsible for the distress. The investigation determined that the drywall subcontractor had not followed the plans and specifications governing construction joints, providing a technical basis for attributing the observed cracking to construction practices.

International Arbitration & Disputes

Dr. Jampole has investigated the design and construction of large infrastructure projects as part of international arbitration disputes.

- Underground Metro System in the Middle East: Applied civil and structural engineering, design review, and construction-stage assessment to evaluate modifications to the design of multiple underground metro stations and associated infrastructure, including entrance canopies, emergency exits, switchboxes, launch boxes, and tunnels. Assessed site conditions and the progression of civil and structural work to determine whether modifications represented changes to the contractor’s scope and estimated the engineering level of effort required to implement those changes. Provided sworn expert testimony, translating detailed technical findings into opinions relevant to the underlying construction dispute.
- Urban Transportation System in the Middle East: Managed a multidisciplinary engineering team investigating an entitlements dispute involving civil and structural design changes for a new underground and elevated metro system, including stations and viaducts. Evaluated the nature and extent of design changes and quantified the engineering level of effort required to implement them, providing a technical basis for assessing claimed changes in scope. Provided sworn expert testimony regarding the engineering analyses and resulting opinions.
- Urban Transportation System in the Middle East: Managed a team investigating claims regarding the adequacy of the tender-stage engineering for an EPC contract involving a new metro system, including stations and ancillary facilities. Applied civil and structural engineering and design-review expertise to evaluate whether the tender design provided sufficient technical information for the contractor to develop its bid, supporting assessment of disputed issues concerning design completeness and bid preparation.
- Underground Metro Stations in the Middle East: Managed a team investigating alleged civil and structural engineering design changes arising during a design-build project for underground metro stations. Assessed design maturity and quantified the percentage of design completion at the time the contractor was de-scoped, evaluated whether owner instructions resulted in changes to the technical scope, and investigated the causes and impacts of construction defects. The work

provided an engineering basis for assessing responsibility, scope changes, and the technical consequences of disputed design and construction issues.

- Underground Transportation System in South America: Applied earthquake engineering, structural dynamics, and numerical modeling expertise to evaluate the seismic design of an underground metro system in a high-seismic region. Assessed the earthquake intensity used as the basis for design and independently evaluated the accuracy of the designer's numerical model for predicting system behavior during earthquakes, providing a technical basis for assessing the adequacy of the seismic analysis and design assumptions.
- Underground Metro Station in the Middle East Shoring Design: Applied structural and temporary-works engineering expertise to evaluate the shoring and reshoring design for an underground metro station. Assessed compliance with applicable codes and standards and evaluated whether contractor-requested design modifications were technically necessary to achieve compliance, providing an independent engineering basis for distinguishing required design changes from discretionary modifications.
- Seismically Isolated Bridge in Europe: Conducted a performance-based seismic assessment of a seismically isolated bridge in a high-seismicity region using advanced structural dynamics and probabilistic engineering techniques. Performed incremental dynamic analysis to quantify collapse capacity and estimate both the probability of collapse during a design-intensity earthquake and the lifetime probability of collapse. The analysis provided a quantitative, risk-based basis for determining whether the bridge, as designed, posed a safety risk.
- Airport: Applied structural engineering and design-review expertise to evaluate the design of the main terminal building and ancillary facilities at a major airport. Assessed the capacities and deflections of structural components including slabs, beams, and arched columns, as well as floor-vibration requirements, providing an independent technical evaluation of structural performance and design adequacy.
- LNG Facility: Applied engineering design-review and project assessment expertise to audit the design performance of an EPCM contractor on a major LNG plant development project on behalf of a large oil and gas company. Evaluated the contractor's engineering performance to provide an independent technical assessment of design execution.
- Solar Plant in the Western U.S.: Applied quantitative analysis and energy-performance modeling to evaluate the expected output of a solar thermal power plant under observed weather conditions relative to baseline facility models developed for a standard meteorological year. The analysis normalized plant performance for differences in weather conditions and provided the quantitative basis for calculating performance payments stipulated under the EPC contract, connecting technical performance assessment directly to contractual outcomes.

Adjacent Construction Investigations

Dr. Jampole has performed many investigations into damage to buildings caused by adjacent construction activity, such as evaluating whether damage to a high-rise condominium was caused by dewatering at a nearby site; investigating the partial collapse of a foundation during underpinning; investigating the collapse of a ceiling while vibratory equipment was in use; and evaluating the likely origin of damage to a church with multiple adjacent structures under construction.

Post-Earthquake Reconnaissance

2023 Türkiye/Syria Earthquakes

2017 M7.1 Puebla-Morelos, Mexico Earthquake

2016 M5.0 Cushing, Oklahoma Earthquake

2010, 2011, 2016 New Zealand Earthquakes