Qindan (Chindan) Huang, Ph.D.

Professor | Civil, Construction, and Enviornmental Engineering
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EDUCATION

Ph.D.	Civil Engineering, Texas A&M University, College Station, TX Dissertation: *Adaptive Reliability Analysis of RC Bridges Using Nondestructive Testing* Research Supervisor: Dr. Paolo Gardoni	2010
M.S.	Civil Engineering, University of Toledo, Toledo, OH Thesis: *Simulation of a Discontinuous System* Research Supervisor: Dr. Naser Mostaghel	2004
B.S.	Structural Engineering, Tongji University, Shanghai, China	2001

RESEARCH INTERESTS

Probabilistic and statistical modeling in civil engineering; structural reliability; risk and life-cycle analysis; performance assessment of deteriorating systems; decision making under uncertainty; performance-based design; multi-hazard analysis.

APPOINTMENTS

2025 – Present	Professor, Dept. of Civil, Construction, and Enviornmental Engineering, Marquette University
2020 – 2025	Associate Professor, Dept. of Civil, Construction, and Enviornmental Engineering, Marquette University
2018 – 2019	Associate Professor, Dept. of Civil Engineering, The University of Akron
2011 – 2018	Assistant Professor, Dept. of Civil Engineering, The University of Akron

ACADEMIC AWARDS

2023,2025	Faculty Development Award, Research and Innovation, Marquette University
2016	NCERCAMP Travel Grant, NCERCAMP, The University of Akron
2014	ASCE ExCEEd Fellow, American Society of Civil Engineering (ASCE)
2010	Academic Excellence Award, Texas A&M University
2010, 2009, 2008	Zachry Endowed Fellowship, Texas A&M University
2010	The 2nd Place of Oral Presentation in Systems Engineering Section, The 13th Annual Student Research Week, Texas A&M University
2009	Workshop "Negotiating the Ideal Faculty Position" for senior women graduate students and post-docs (7% acceptance), Rice University
2008	Gerald E. Smith Memorial Scholarship, The American Society for Nondestructive Testing
2000, 1999, 1998	Outstanding Student Scholarship, Tongji University, Shanghai, China

AWARDED RESEARCH GRANTS

2025 Training Workforce for Infrastructure Construction and Engineering", *Department of Housing and Urban Development (HUD)*, Co-PI.

2024 "Optimization of Dowel Bars in Concrete Pavements," *Wisconsin Highway Research Program*, Co-PI.

2023 "A Novel Reliability-Based Approach for Assessing Pipeline Cathodic Protection Systems in External Corrosion Management," *Department of Transportation (DOT), PHMSA*, PI.

"Correlation Between Deck Patching Quantities and Chloride Concentration Levels", *Minnesota DOT*, PI.

"Automated 3DGPR Analysis for Concrete Pavement Evaluation", *National Road Research Alliance*, Co-PI.

"Laboratory Characterization of the Interaction between Corroded Dowel Bars and Concrete," *Faculty Development Award program*, *Opus College of Engineering*, Marquette University, Co-PI.

2022 "Reliable Coating Service Life Prediction Considering Prevailing Uncertainties", U.S. *Army Engineer Research and Development Center*, PI, (collaborated with University of Akron).

"Performance Evaluation and Risk Assessment of Excessive CP on Vintage Pipeline Coatings", *DOT-PHMSA*, PI @ Marquette (led by University of Akron).

Pilot undergraduate summer research program, *Research and Innovation, Marquette University*, PI.

2021 "Pipeline Risk Management Using Artificial Intelligence-Enabled Modeling and Decision Making", *DOT-PHMSA*, PI @ Marquette (led by Rutgers University).

2020 "Probabilistic Performance Evaluation of Cathodically Protected Pipeline Considering AC Corrosion", *DOT-PHMSA*, PI @ Marquette (led by University of Akron).

"Probabilistic Performance Modeling and Optimum Maintenance Planning of Plastic Pipeline with Piezoelectric-Based NDE Updating", *DOT-PHMSA*, PI @ Marquette (led by Rutgers University).

2019 "Multi-Modal NDE Assisted Probabilistic Pipeline Performance Evaluation under Interactive Anomalies", *DOT-PHMSA*, PI.

2017 "Evaluation of Effective Bridge Deck Repair Maintenance Methods (Phase I)", *Ohio Department of Transportation (ODOT)*, PI.

2016 "Probabilistic Characterization of Bond Behavior at Rebar-Concrete Interface in Corroded RC Structures: Experiment, Modeling, and Implementation", *National Science Foundation (NSF)*, PI.

"Surface Applied Corrosion Inhibitors Testing", *BASF*, Co-PI.

"Reliability-based life cycle cost analysis of corroded reinforced concrete substructures considering patch repair", *NCERCAMP Project Development Grant, The University of Akron*, PI.

2015 "Experimental Characterization of Coating Disbondment in Buried Pipelines by Frequency Domain", *Consolidated Edison Company of New York*, Co-PI.

2014 "Probabilistic Seismic Demand Models of Reinforced Concrete Bridges", *Faculty Research Committee, The University of Akron*, PI.

2013 "Damage evolution of DEFT coating/7075 T6 alloy-system under stress conditions based on advanced electrochemical techniques and reliability analysis", *Department of Defense (DoD)*, Co-PI.

2012 "Performance-Based Evaluation of Self-Centering Concentrically Braced Frames", *NSF*, Co-PI.

PUBLICATIONS

Peer reviewed journal articles

1. Khtami, A., & Huang, Q. (2025). "Cost Consequence Predictive Models for Hazardous Liquid & Gas Transmission Gathering Corroded Pipelines," *ASCE Journal of Pipeline Systems and Practice*, (accepted for publication).
2. Su, Y., Majdabadi Farahani, E., **Huang, Q.**, & Zhou, Q. (2025). "AC-Induced Corrosion of Cathodically Protected Pipelines: Experimental Study and Probabilistic Modeling," *Corrosion and Materials Degradation*, 6(2), 26.
3. Kere, K. J., & **Huang, Q.** (2025). "Development of probabilistic interaction rule and failure pressure model for pipelines with colony of corrosion defects," *ASCE Journal of Pipeline Systems Engineering and Practice*, Under Revision.
4. Kere, K. J., & **Huang, Q.** (2024). "An analytical approach to evaluate life-cycle cost of deteriorating pipelines," *Reliability Engineering & System Safety*, 110287.
5. Farahani, E. M., **Huang, Q.**, & Wang, H. (2024). "A Probabilistic Framework for External Pitting Corrosion Growth Modelling for Buried Steel Pipelines Considering Soil Properties," *International Journal of Pressure Vessels and Piping*, 105234.
6. Kere, K. J., & **Huang, Q.** (2024). "Probabilistic burst pressure prediction model for pipelines with single crack-like defect". *International Journal of Pressure Vessels and Piping*, 207, 105084.
7. Wang, H., Shah, J., Hawwat, S. E., **Huang, Q.**, & Khatami, A. (2024). "A Comprehensive Review of Polyethylene Pipes: Failure Mechanisms, Performance Models, Inspection Methods, and Repair Solutions". *Journal of Pipeline Science and Engineering*, 100174.
8. Farahani, E. M., Su, Y., Chen, X., Wang, H., Laughorn, T. R., Onesto, F., Zhou, Q. & **Huang, Q.** (2023). "AC corrosion of steel pipeline under cathodic protection: A state-of-the-art review". *Materials and Corrosion*.
9. Esteghamati, M. Z., & **Huang, Q.** (2023). "Evaluating the impact of higher-mode and inelastic dynamic responses of concrete frames on the performance of seismic intensity measures". *Structures*, 56, 105029.
10. Soraghi, A., & **Huang, Q.** (2022). "Probabilistic modeling of reinforced concrete bond behavior considering failure mode and corrosion". *Structure and Infrastructure Engineering*, 1-23.
11. Soraghi, A., & **Huang, Q.** (2022). Simple rebar anchorage slip macromodel considering corrosion. *Engineering Structures*, 262, 114357.
12. Kere, K. J., & **Huang, Q.** (2022). Development of probabilistic failure pressure models for pipelines with single corrosion defect. *International Journal of Pressure Vessels and Piping*, 197, 104656.
13. Alzioud, M., Abbas, A., & **Huang, Q.** (2022). Effect of traffic monitoring period on mechanistic-empirical pavement design. *Construction and Building Materials*, 360, 129584.
14. Soraghi, A., & **Huang, Q.** (2021). "Reliability Analysis of Corroded RC Beams Using Probabilistic Failure Mode Prediction Model," *Engineering Structures*, 233: 111944.
15. Kere, K.J., & **Huang, Q.** (2019). "Life-Cycle Cost Comparison of Corrosion Management Strategies for Steel Structures," *ASCE Journal of Bridge Engineering*, 24(4): 04019007.
16. Sajedi S., & **Huang, Q**. (2019). "Reliability-based life-cycle-cost comparison of different corrosion management strategies," *Engineering Structures*, 186: 52-63.

17. Daghash, S., **Huang, Q.**, & Ozbulut, O.E. (2019). "Tensile Behavior and Cost Efficiency Evaluation of ASTM A1010 Steel for Bridge Construction," *ASCE Journal of Bridge Engineering*, 24(8): 04019078.
18. **Huang, Q.**, Dyanati, M., Roke, D., Chandra, A., & Sett, K. (2018). "Economic Feasibility Study of Self-Centering Concentrically Braced Frame Systems," *ASCE Journal of Structural* Engineering, 144(8): 04018101.
19. Silwal, B., **Huang, Q.**, Ozbulut, O.E., & Dyanati, M. (2018). "Comparative seismic fragility estimates of steel moment frame buildings with or without superelastic viscous dampers," *Journal of Intelligent Material Systems and Structures*, 1045389X18798936.
20. Zaker Esteghamati, M., Banazadeh, M., & **Huang, Q.** (2018). "The effect of design drift limit on the seismic performance of RC dual high-rise buildings." *The Structural Design of Tall and Special Buildings*, 27(8): e1464.
21. Nikellis, A., Eshun, K. O., Dyanati, M., Roke, D. A., **Huang, Q.**, Chandra, A., & Sett, K. (2018). "Effect of site-specific soil nonlinearities and uncertainties on ground motion intensity measures and structural demand parameters." *Georisk: Assessment and Management of Risk for Engineered Systems and Geohazards*, 1-18.
22. Dyanati, M., **Huang, Q**., & Roke, D. (2017). "Sensitivity analysis of seismic performance and loss evaluation", *Bulletin of Earthquake Engineering*, DOI: 10.1007/s10518-017-0150-6.
23. Chandra, A., **Huang, Q.**, Roke, D., & Sett, K. (2017). "Improving precision in earthquake loss estimation," *Sustainable and Resilient Infrastructure*, DOI: 10.1080/23789689.2017.1365231.
24. Sajedi S., **Huang, Q**., Gandomi, A.H., & Kiani, B. (2017). "Reliability-based multi-objective design optimization of reinforced concrete bridges considering corrosion affect," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, DOI: 10.1061/AJRUA6.0000896.
25. Sajedi, S., & **Huang, Q.** (2016). "Load-Deflection Behavior Prediction of Intact and Corroded RC Bridge Beams with or without Lap Splices Considering Bond Stress-Slip Effect," *ASCE Journal of Bridge Engineering*, DOI: 10.1061/(ASCE)BE.1943-5592.0000981, 04016102.
26. Dyanati, M., **Huang, Q**., & Roke, D. (2016). "Cost-Benefit Evaluation of Self-centering Concentrically Braced Frames Considering Uncertainties", *Structure and Infrastructure Engineering*, DOI: 10.1080/15732479.2016.1173070.
27. Miran, S.A. **Huang, Q.**, & Castaneda, H. (2016). "Time-Dependent Reliability Analysis of Corroded Buried Pipelines Considering External Defects", *ASCE Journal of Infrastructure Systems*, DIO: 10.1061/(ASCE)IS.1943-555X.0000307, 04016019.
28. Kiani, B., Sajedi S., Gandomi, A.H., **Huang, Q**., & Liang, R.Y. (2016). "Optimal adjustment of ACI formulation for shrinkage of concrete containing pozzolans," *Construction & Building Materials*, 131: 485-495.
29. Sajedi S., Gandomi, A.H., Kiani, B., & **Huang, Q**. (2016). "Genetic Programming for Experimental Data Mining: A Case Study on Concrete Creep Formulation," *Automation in Construction*, 70(1): 89-97.
30. Holik, W., Schneider, W., & **Huang, Q.** (2016). "Winter Maintenance Fleet Savings from Implementing Specialty Winter Maintenance Equipment," *Cold Regions Science and Technology*, 127: 57-64.
31. Holik, W., Schneider, W., & **Huang, Q.** (2016). "Assessing the Vulnerability of Winter Maintenance Material Storage Facilities," *ASCE Journal of Cold Region Engineering*, 06016004.

32. Kafaeikivi, M., Roke, D., & **Huang, Q.** (2016). "Seismic Performance assessment of dual systems combining conventional and self-centering concentrically braced frames," *Structures*, 5: 88-100.
33. Sajedi S., & **Huang, Q**. (2015). "Probabilistic Model for Steel-Concrete Bond Strength Considering Corrosion Effect," *Engineering Structures*, 99: 120-131.
34. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2015). "Assessment of Modal Parameters Considering Measurement and Modeling Errors," *Journal of Smart Structures and Systems*, 15(3): 717-733.
35. Dyanati, M., **Huang, Q**., & Roke, D. (2015). "Seismic Demand Models and Performance Evaluation of Self-Centering and Conventional Concentrically Braced Frames," *Engineering Structures*, 84 (1): 368-381.
36. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2015). "Adaptive Reliability Analysis of Reinforced Concrete Bridges Subject to Seismic Loading Using Nondestructive Testing," *ASCE-ASME Journal of Risk & Uncertainty in Engineering Systems*, *Part A: Civil Engineering*, 1(4): 04015014.
37. Fan, H., **Huang, Q.**, & Liang, R. (2014). "Reliability and Importance Analysis of Piles in Spatially Varying Soils Considering Multiple Failure Modes," *Computers and Geotechnics*, 57: 97-104.
38. **Huang, Q.**, Gardoni, P., Pagnotta, A., & Trejo, D. (2014). "Probabilistic Model for Steel-concrete Bond Behavior of Bridge Columns Affected by Alkali Silica Reactions," *Engineering Structures*, 71: 1-11.
39. Pagnotta, A., Trejo, D., Gardoni, P., & Huang, Q. (2013). "Effects on Impact-Echo signals caused by adjacent steel reinforcing bars and voids in lap-splice regions: Experimental study," *ACI Special Publication*, 292: 1-14.
40. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2012). "A Probabilistic Damage Detection Approach Using Vibration-based Nondestructive Testing," *Structural Safety*, 38: 11-21.
41. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2011). "Predicting Concrete Compressive Strength Using Ultrasonic Pulse Velocity and Rebound Number Data," *ACI Materials Journal*, 108(4): 403-412.
42. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2010). "Probabilistic Seismic Demand Models and Fragility Estimates for Reinforced Concrete Highway Bridges with One Single-Column Bent," *ASCE Journal of Engineering Mechanics,* 136(11): 1340-1353.
43. **Huang, Q**., Gardoni, P., & Hurlebaus, S. (2009). "Probabilistic Capacity Models and Fragility Estimates for Reinforced Concrete Columns Incorporating NDT Data," *ASCE Journal of Engineering Mechanics,* 135(12): 1384-1392.

Peer-Reviewed Other Publications

1. Ludzia, K., Bevan, V. S., Huang, Q., Newman, D., & Hernandez, J. (2025). "Bond Performance for Corroded and Epoxy-Coated Steel and Glass Fiber Reinforced Polymer Dowel Bars," In *Airfield and Highway Pavements 2025* (pp. 412-422).
2. Kere, K.J., and **Huang, Q**. "Development of probabilistic models of defect interaction identification and failure pressure for pipelines with colony of corrosion defects," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, AMPP Annual Conference & Expo 2023, Denver, Colorado, 2023.
3. Kere, K.J., and **Huang, Q**. "Risk management strategies and probabilistic failure pressure model development for pipelines with crack-like defect," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.

4. Farahani, E.M., and **Huang, Q**. "Probabilistic Corrosion Growth Models of Buried Steel Pipelines Using Inspection and Soil Survey Data," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.
5. Khatami, A., **Huang, Q**., and Kere, K.J. "Monetary consequence prediction of hazardous liquid pipelines in US," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.
6. Zaker Esteghamati, M., and **Huang, Q.** (2019). "An efficient stratified-based ground motion selection for cloud analysis," *13th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP13, Seoul, South Korea, 2019.
7. Soraghi, A., **Huang, Q.,** and Hauff, D. (2019) "Probabilistic model for rebar-concrete bond failure mode prediction considering corrosion," *Structures Congress 2019*, Orlando, FL.
8. Hillegas, J. A., Liua, R., Liua, B., Sancheza, A., and **Huang, Q.** (2018). "Engineering Properties Influencing Clayey Materials for Additive Manufacturing," *Proceedings of the IASS Symposium 2018*, Boston, USA.
9. Sajedi, S., **Huang, Q.**, and Mohebbi, M. (2017). "Comparison of Corrosion Management Strategies of RC Structures Using a Reliability-Based Approach," *NACE International Corrosion Conference & Expo*, New Orleans, LA.
10. Sajedi, S., **Huang, Q.**, and Miran, S.A. (2016). "Reliability-based life-cycle-cost-analysis of corroded reinforced concrete substructures considering patch repair," *NACE Corrosion Risk Management Conference*, Houston TX, May 2016.
11. Miran, S.A., **Huang, Q.**, and Castaneda, H., and Sajedi, S. (2016). "Optimal Inspection Interval Based on Reliability Assessment of Corroded Pipelines," *NACE Corrosion Risk Management Conference*, Houston TX, May 2016.
12. Sajedi S., and **Huang, Q**. (2015). "Time-Dependent Reliability Analysis on the Flexural Behavior of Corroded RC Beams before and after Repairing," *Structures Congress 2015*, Portland, Oregon.
13. Dyanati, M., **Huang, Q.,** and Roke, D. (2015). "Life Cycle Cost-Benefit Evaluation of Self-centering and Conventional Concentrically Braced Frames," *12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12*, Vancouver, Canada.
14. Dyanati, M., and **Huang, Q.** (2014). "Seismic Reliability of a Fixed Offshore Platform Against Collapse," *Proceedings of the ASME 2014 33rd International Conference on Ocean, Offshore and Arctic Engineering*, San Francisco, CA.
15. Dyanati, M., **Huang, Q.,** and Roke, D. (2014) "Structural and Nonstructural Performance Evaluation of Self-Centering Concentrically Braced Frames Under Seismic Loading," *Structures Congress 2014*, Boston, MA.
16. **Huang, Q.,** Gardoni, P., Trejo, D., and Pagnotta, A. (2013). "Probabilistic Model for Steel-Concrete Bond Behavior of Bridge Columns Considering the Effect of ASR," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.
17. Pagnotta, A., Gardoni, P., Trejo, D., and **Huang, Q.** (2013). "Probabilistic Impact-Echo Method to Detect Debonding of Steel Reinforcement in RC structures," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.
18. Fan, H., **Huang, Q.,** and Liang, R. (2013). "Reliability Analysis of Drilled Shafts Subjected to Axial and Lateral Loading Considering Soil Spatial Variability," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

19. Dyanati, M., **Huang, Q.,** and Roke, D. (2013). "Seismic Performance and economic feasibility Evaluation of Self-Centering Concentrically-Braced-Frame (SC-CBF) System," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.
20. Kafaeikivi, M., Roke, D., and **Huang, Q.** (2013). "Seismic Performance assessment of dual systems combining conventional and self-centering concentrically braced frames," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.
21. Roke, D., Chandra, A., **Huang, Q.**, and Sett, K. (2013). "Methodology for Life Cycle Cost Assessment of Self-Centering Concentrically Braced Frame Systems," *The 10th International Conference on Urban Earthquake Engineering Proceedings*, March, Tokyo, Japan.
22. M.R., H., Roke, D., and **Huang, Q.** (2013). "Quantification of Higher Mode Responses for Steel Self-Centering Concentrically Braced Frames," *The 7th International Structural Engineering and Construction Conference*, Honolulu, Hawii.
23. Pagnotta, A., Gardoni, P., Trejo, D., and **Huang, Q.** (2012). "Assessing impact-echo test variables for detecting loss of bond in RC bridge columns," *Proceedings of the 6th International Conference on Bridge Maintenance, Safety, and Management*, Stresa, Italy.
24. **Huang, Q.**, Gardoni, P., Pagnotta, A., and Trejo, D. (2012). "Probabilistic Model for Steel-Concrete Bond Behavior of Bridge Columns Considering the Effect of ASR," *Proceedings of the 6th International Conference on Bridge Maintenance, Safety, and Management*, Stresa, Italy.
25. **Huang, Q.**, Gardoni, P., and Hurlebaus, S. (2011). "Adaptive Reliability Analysis of Reinforced Concrete Bridges Using Nondestructive Testing," *International Conference on Vulnerability and Risk Analysis and Management*, Hyattsville, MD.
26. **Huang, Q.**, Gardoni, P., and Hurlebaus, S. (2009). "Updating Structural Properties using Modal Parameters Considering Measurement Errors," *ASCE Structures Congress 2009*, Austin, TX.
27. **Huang, Q.**, Gardoni, P., and Hurlebaus, S. (2009). "Updating Fragility Estimates for Reinforced Concrete Bridges Using Nondestructive Testing," *The 10th International Conference on Structural Safety and Reliability* (ICOSSAR2009), Osaka, Japan.
28. **Huang, Q.**, Gardoni, P., and Hurlebaus, S. (2009). "Updating Structural Properties Using Vibration based Nondestructive Testing with Modal Parameters," *The 7th International Symposium on Non Destructive Testing in Civil Engineering* (NDTCE'09), Nantes, France.
29. **Huang, Q.** (2007). "Vibration Based Energy Harvesting Technique to Drive Wireless Sensor Networks," *The Proceedings of 1st Civil Engineering Student Research Symposium*, Texas A&M University, College Station, TX.

Dissertation

1. Huang, Q. (2010). *Adaptive reliability analysis of reinforced concrete bridges using nondestructive testing.* Texas A&M University.

Research Report

1. **Huang, Q.**, Thomas, J., & Tao, J. J. (2018). *Evaluation of Effective Bridge Deck Repair Maintenance Methods* (No. FHWA/OH-2018-11). Ohio. Dept. of Transportation. Office of Statewide Planning and Research.
2. Castaneda-Lopez, H., Yajima, A., Li, X., & Huang, Q. (2018). *U.S. Patent No. 10,082,478*. Washington, DC: U.S. Patent and Trademark Office.

3. Gardoni, P., Pagnotta, A., **Huang, Q.**, & Trejo, D. (2012). *Evaluation of concrete structures affected by alkali-silica reaction and delayed ettringite formation-part 2* (No. FHWA/TX-13/0-6491-1). Texas. Dept. of Transportation. Research and Technology Implementation Office.

INVITED PRESENTATIONS

2017 "Application of Life-cycle Cost Analysis in Civil Engineering," *Center for Environmentally Sustainable Transportation in Cold Climates*, University of Alaska, Fairbanks, Apr. 27, 2017.

2016 "Reliability-Based Corrosion Management of Pipelines Using ILI Data," *National Corrosion and Materials Reliability 1st Workshop*, Texas A&M University, College Station, Aug. 9, 2016.

"Application of Life-cycle Cost Analysis in Civil Engineering," *College of Transportation Engineering*, Tongji University, Shanghai, Jul. 29, 2016.

"Cost-Benefit Evaluation of Self-Centering Concentrically Braced Frames," *Department of Civil Engineering*, Case Western University, Jan. 15, 2016.

2015 "Cost-Benefit Evaluation of Self-Centering Concentrically Braced Frames Considering Uncertainties," *Research for Lunch*, The University of Akron, Nov. 5, 2015.

CONFERENCE PRESENTATIONS (BY RESEARCH TEAM)

2025 "Bond Performance for Corroded and Epoxy-Coated Steel and Glass Fiber Reinforced Polymer Dowel Bars," *2025 International Airfield & Highway Pavements Conference*, Glendale, AZ.

2024 "An analytical approach of determining life-cycle cost of deteriorating pipelines," *2024 ASCE Engineering Mechanics Institute Conference and Probability Mechanics & Reliability Conference*, Chicago, IL, 2024.

"Experimental Study and Probabilistic modeling of Pipeline Corrosion with AC Interference Under CP," AMPP Annual Conference & Expo 2024, New Orleans, LA, 2024.

2023 "Development of probabilistic models of defect interaction identification and failure pressure for pipelines with colony of corrosion defects," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, AMPP Annual Conference & Expo 2023, Denver, Colorado, 2023.

"Risk management strategies and probabilistic failure pressure model development for pipelines with crack-like defect," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.

"Probabilistic Corrosion Growth Models of Buried Steel Pipelines Using Inspection and Soil Survey Data," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.

"Monetary consequence prediction of hazardous liquid pipelines in US," *14th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP14, Dublin, Ireland, 2023.

2022 "Probabilistic models development and risk management strategies for pipeline with anomalies", 2022 Forward Thinking Research Symposium, Marquette University.

"Development of probabilistic models of defect interaction identification and failure pressure for pipelines with colony of corrosion defects," ASCE UESI Pipelines 2022, Indianapolis, Indiana, July 31 – August 3, 2022.

2021 "Rebar-Concrete Bond Strength Prediction Considering Corrosion and Bond Failure Mode," *Corrosion Virtual Conference & Expo 2021*, Apr. 2021.

"Multi-modal NDE Assisted Probabilistic Pipeline Performance Evaluation under Interactive Anomalies," 2021 PHMSA R&D Forum.

2019 "An efficient stratified-based ground motion selection for cloud analysis," *13th International Conference on Applications of Statistics and Probability in Civil Engineering*, ICASP13, Seoul, South Korea, May 2019.

"Probabilistic model for rebar-concrete bond failure mode prediction considering corrosion," *Structures Congress 2019*, Orlando, FL, Apr. 2019.

2018 "Life-cycle cost comparison of corrosion management strategies for steel structures," *TRB Annual Meeting*, Bridge Life Cycle Cost Analysis Subcommittee AHD35(2), Jan. 2018.

2017 "Reliability of a fixed offshore platform against collapse subjected to multi-hazards," *ASCE Structure Congress*, Denver, Colorado, Apr. 2017.

"Comparison of Corrosion Management Strategies of RC Structures Using Reliability-Based Approach," *NACE Corrosion Conference & Expo 2017*, New Orleans, LA, Mar. 2017.

"Comparison of Corrosion Management Strategies of RC Structures Using Reliability-Based Approach," *TRB Annual Meeting*, Corrosion Committee, Jan. 2017.

"Economic Feasibility Study of Self-Centering Concentrically Braced Frame Systems," *2016 ACCMES*, Sapporo, Japan, July 2016.

2016 "Optimal Inspection Interval Based on Reliability Assessment of Corroded Pipelines," *NACE Corrosion Risk Management Conference*, Houston TX, May 2016.

"Reliability-based life cycle cost analysis of corroded reinforced concrete substructures considering patch repair," *NACE Corrosion Risk Management Conference*, Houston TX, May 2016.

2015 "Life Cycle Cost-Benefit Evaluation of Self-centering and Conventional Concentrically Braced Frames," *12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12*, 2015, Vancouver, Canada.

"Time-Dependent Reliability Analysis on the Flexural Behavior of Corroded RC Beams before and after Repairing," *Structures Congress 2015*, Portland, Oregon.

2014 "Seismic Reliability of a Fixed Offshore Platform against Collapse," *ASME 2014 33rd International Conference on Ocean, Offshore and Arctic Engineering*, San Francisco, CA.

"Structural and Nonstructural Performance Evaluation of Self-Centering Concentrically Braced Frames Under Seismic Loading," *Structures Congress 2014*, Boston, MA.

2013 "Flexural behavior of corroded RC beams rehabilitated using patch-repair," *EMI 2013*, Chicago, IL, Aug. 2013.

"Corrosion assessment of underground coated pipelines based on coating/steel damage evolution and system reliability analysis," *NACE Eastern conference*, Hawaii, Nov. 2013.

"Seismic Performance Evaluation of Self-Centering Concentrically Braced Frames (SC-CBF) Systems," *Structures Congress 2013*, Pittsburgh, PA, May 2013.

"Seismic Performance Assessment of Dual Systems Combining Conventional and Self-Centering Concentrically Braced Frames," *Structures Congress 2013*, Pittsburgh, PA, May 2013.

"Probabilistic Model for Steel-Concrete Bond Behavior of Bridge Columns Considering the Effect of ASR," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

"Probabilistic Impact-Echo Method to Detect Debonding of Steel Reinforcement in RC structures," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

"Reliability Analysis of Drilled Shafts Subjected to Axial and Lateral Loading Considering Soil Spatial Variability," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

"Seismic Performance and economic feasibility Evaluation of Self-Centering Concentrically-Braced-Frame (SC-CBF) System," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

"Seismic Performance assessment of dual systems combining conventional and self-centering concentrically braced frames," *The 11th International Conference on Structural Safety and Reliability* (ICOSSAR2013), New York.

"Methodology for Life Cycle Cost Assessment of Self-Centering Concentrically Braced Frame Systems," *The 10th International Conference on Urban Earthquake Engineering*, Tokyo, Japan.

"Quantification of Higher Mode Responses for Steel Self-Centering Concentrically Braced Frames," *The 7th International Structural Engineering and Construction Conference*, Honolulu, Hawii.

2012 "Probabilistic Model for Steel-Concrete Bond Behavior of Bridge Columns Considering the Effect of ASR", *The 6th International Conference on Bridge Maintenance, Safety, and Management*, Stresa, Italy, July 2012.

"Probabilistic Capacity Model for Bridge Columns Considering the Effect of ASR on Steel-concrete Bond Behavior in the Lap-splice Region," *The 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, South Bend, IL, Jun 2012.

2010 "Damage Detection Using Global Nondestructive Testing," *The 13th Annual Student Research Week*, Mar. 24 – 26, 2010, Texas A&M University, College Station, TX.

2009 "Updating Fragility Estimates for Reinforced Concrete Bridges Using Nondestructive Testing," *The 10th International Conference on Structural Safety and Reliability* (ICOSSAR 2009), Sep. 14 – 17, 2009, Osaka, Japan.

"Updating Structural Properties Using Vibration-based Nondestructive Testing with Modal Parameters," *The 7th International Symposium on Non Destructive Testing in Civil Engineering* (NDTCE'09), Jun. 30 – Jul. 3, 2009, Nantes, France.

"Updating Structural Properties using Modal Parameters Considering Measurement Errors," *Structures Congress 2009*, Apr. 30 – May 2, 2009, Austin, TX.

2008 "Probabilistic Demand Models and Fragility Estimates for Reinforced Concrete Highway Bridges with One Single-column Bent," *Reliability and Risk Analysis Seminars*, Apr. 2008, Texas A&M University, College Station, TX.

2007 "Vibration Based Energy Harvesting Technique to Drive Wireless Sensor Networks," *The 1st Civil Engineering Student Research Symposium*, Nov. 2007, Texas A&M University, College Station, TX.

STUDENT RESEARCH ADVISING

Committee Chair (Ph.D.)

1. Mojtaba Dyanati, Ph.D., *Seismic performance of self-centering concentrically braced frame*, completed Spring 2016
2. Siavash Sajedi, Ph.D., *Reliability-based design optimization of corrosion management strategies of reinforced concrete structures*, completed Summer 2017
3. (Co-chair) Mahmoud Alzioud, Ph.D. candidate, *Assessing the Impact of Traffic Coverage Time Scenarios on Predicting Alligator Bottom-Up Fatigue Cracking*, completed Spring 2020
4. AhmadReza Soraghi, Ph.D. candidate, *Probabilistic Characterization of Bond Behavior at Rebar-Concrete Interface in Corroded RC Structures*, completed Fall 2021
5. Kiswendsida Jules Kere, Ph.D. student, *Probabilistic Models Development and Risk Management Strategies for Pipelines with Anomalies*, completed Spring 2023

6. Farahani, Emad, Ph.D. student, *External Corrosion Management of Buried Steel Pipelines* (started Spring 2022)
7. Khatami, Alireza, Ph.D. student, *Life-cycle Analysis of Transmission Pipeline Systems* (started Spring 2022)
8. Mehran Mozaffar, Ph.D. student, *Predictive Modeling of RC Bridge Deck Performance for Bridge Network Management Considering Chloride-induced Corrosion*, (started in Spring 2023)
9. Brigida Zhunio Cardenas, Ph.D. student, *To-be-determined* (started Spring 2024)

Committee Chair (M.S.)

10. Syedeh Azadeh Miran, M.S., *Time-dependent reliability analysis of corroded pipelines*, completed Summer 2016
11. Li Zhao, M.S., *Spatial Reliability Analysis for Corroded Reinforced Concrete Structures from Incomplete Monitoring Data*, completed Fall 2016
12. Kiswendsida Jules Kere, M.S., *Life-cycle cost comparison of corrosion management strategies for a steel roadway bridge*, completed Fall 2017
13. James Hillegas, M.S. student, *Studies on Additive Manufacturing for Civil Engineering Applications*, completed Summer 2018
14. Josh Thomas, M.S. student, *Performance Evaluation of Weathering Steel and Hydrodemolition on Bridge Structures*, completed Summer 2019
15. Derek Hauff, M.S. student, *Study of Bond Behavior at Rebar and Concrete Interface Through Beam-end Specimens with Consideration of Corrosion*, completed Spring 2022
16. Alyssa Beasley (non-thesis), completed Spring 2022
17. (Co-chair) Brigida Zhunio Cardenas, M.S. (thesis), *Steel Corrosion Rate Modeling for Reinforced Concrete with FRP Repair*, completed Fall 2024)
18. David Zeller (non-thesis), completed Spring 2025
19. Kinga Ludzia (non-thesis), completed Summer 2025

Committee Members @ Marquette University

1. Michael Phelan, M.S. (thesis), completed Spring 2022
2. Noah Meisner, M.S. (thesis), completed Spring 2023
3. Sahara Adhikari, M.S. (thesis), completed Spring 2023
4. Gabby Lukanus, M.S. (thesis), completed Summer 2023
5. Cater Deinhammer, M.S. (thesis), completed Spring 2025
6. Sisi Han, Ph.D., completed Fall 2024

PROFESSIONAL & RESEARCH EXPERIENCE

Postdoctoral Research Associate Texas A&M University, College Station, TX 2010 – 2011

Research project: *Nondestructive Evaluation (NDE) of In-Service Concrete Structures Affected by Alkali-Silica Reaction (ASR) or Delayed Ettringite Formation (DEF)*

- Investigating potential NDE methods to detect de-bonding between the rebar and concrete in reinforced concrete (RC) columns subjected to ASR/DEF
- Evaluating the capacity of the deteriorated RC columns subjected to ASR/DEF

Graduate Research Assistant Texas A&M University, College Station, TX 2006 – 2010

Research project: *Adaptive Reliability Analysis of RC Bridges Using Nondestructive Testing (NDT)*

- Developed probabilistic capacity and seismic demand models for RC bridges
- Developed a probabilistic damage detection approach using vibration-based NDT
- Developed an adaptive reliability framework for RC bridges incorporating the information obtained from NDT

Research project: *Wireless Instrumentation for Railroad Infrastructure Management*

- Investigated damage identification methods that can be programmed in the wireless sensors
- Clarified the modal parameter extracting method program used in the wireless sensors

Structural Engineer Malcolm Pirnie, Inc., Columbus, OH 2004 – 2006

- Designed structures for water and wastewater treatment plants
- Coordinated with other engineering disciplines and other divisions

Structural Engineering Intern A&A Engineering, Toledo, OH 2003 – 2004

- Designed civil structures following US design codes and specifications

Graduate Research Assistant University of Toledo, OH 2002 – 2004

Research project: *Simulation of a Discontinuous System*

- Developed a continuous function to describe Coulomb friction in base isolation systems
- Evaluated the performance of a frictional base-isolated structure subjected to seismic loads

Research project: *Periodical Generator Using Piezoelectric Compressor*

- Developed a piezoelectric generator using water waves to transit mechanical energy into electrical energy

PROFESSIONAL & OTHER SERVICE

Service to Marquette University

- Teaching Efficiency, College of Engineering 2025 Spring – Present
- Faculty and Staff Support Working Group, College of Engineering 2024 Summer – Present
- Guest Lectures: CEEN 1200 Introduction to Infrastructure (4 lectures) 2023 Fall
- Guest Lectures: GEEN 1200 Engineering Discovery 1 (2 lectures) 2023 Fall
- Committee Chair, Faculty Search Committee, College of Engineering 2025 Fall
- Faculty Search Committee, College of Engineering 2023 Fall
- PHD 101 Panel,Department of Electrical Engineering and Computer Engineering 2022 Fall
- Chair of SESM Committee, Department of CCEE 2021 – Present
- Coordinator of Statics, College of Engineering 2021 – Present
- Mechanics Committee, College of Engineering 2021 – Present

Service to The University of Akron

- Honor student advisor, Department of Civil Engineering 2017 – 2020
- Coordinator of Statics 2019 – 2020
- Coordinator of Mechanics of Solids 2019 – 2020
- Undergraduate Committee, Department of Civil Engineering 2011 – 2020
- Graduate Committee, Department of Civil Engineering 2011 – 2020
- Faculty Search Committee, Department of Civil Engineering 2012, 2016, 2017
- Scholarship Committee, Honors College 2013
- Presenter, "See UA" summer camps for high school and middle school girls who are interested in engineering 2013 – 2018
- Assistant advisor for incoming CE freshmen 2012, 2013

Service with Professional Organizations:

- Committee Chair, ASCE-SEI Life-Cycle Performance and Cost 2022 – present
- Committee member, TRB Structure Maintenance Committee 2022 – 2025
- Committee member, AMPP Research Program Committee 2019 – 2022
- Committee member, ASCE-SEI Technical Council on Life-Cycle Performance, Safety, Reliability, and Risk of Structural Systems - Task Group 1 2014 – 2018
- Committee member, SEI Technical Activities Division Committee on Multiple Hazard Mitigation, of the Technical Administrative Committee on Dynamic Effects 2014 – 2018

Service to National Conferences/Review Panels/Journals:

- ASCE Engineering Mechanics Institute Conference, Women in Engineering Panel Discussion 2024
- ASCE Engineering Mechanics Institute Conference and Probability Mechanics & Reliability Conference, Local Organizing Committee 2024
- NCHRP Proposal & Project Panel 2018 – 2022
- ASCE Structural Congress 2020, Session Moderator 2020
- University Transportation Center, Tran-SET, Proposal & Project Reviewer 2019
- University Transportation Center, Mountain-Plains Consortium, Proposal Reviewer 2019
- The State Water Resources Research Institute (WRRI) Program 2017
- National Science Foundation (NSF) Proposal Review Panel 2012, 2016
- Annual Small Grants program, Illinois Water Resources Center 2016
- Engineering Mechanics Institute (EMI) Scientific Committee 2013
- Reviewer for Peer Review Journals 2010 – Present
  ASCE Journal of Bridge Engineering, *ASCE Journal of Structural Engineering*, *ASCE Journal of Infrastructure Systems*, *ASCE Journal of Materials in Civil Engineering*, *ASCE Journal of Materials in Civil Engineering*, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems*, *ACI Journal*, *Natural Hazard*, *Engineering Structures, Smart Structures and Systems*, *Structure and Infrastructure Engineering*, *Journal of Aerospace Engineering, NDT & Evaluation*, *Applied Ocean Research*, *Journal of Constructional Steel Research, Sustainable and Resilient Infrastructure*, *Computers & Structures*

Professional Affiliation

- American Society of Civil Engineers (ASCE)
- American Concrete Institute (ACI)
- Transportation Research Board (TRB)

PROFESSIONAL DEVELOPMENT ACTIVITY

KEEN Design Your Academic Life Workshop Summer 2024
Faculty Mentoring Sessions, Center for the Improvement of Mentored Experiences in Research funded by NSF, Marquette U. Fall 2023
Summer 2023 NSF BETTER Community of Practice (CoP) cohort, Marquette U. Summer 2023
National Effective Teaching Institute (NETI-1 and 2) Spring and Summer 2019

CERTIFICATIONS

Graduate Teaching Academy (GTA) Fellow, 2009

International Teaching Assistant (ITA) Learning Community, 2009

Construction Documents Technology (CDT) Exam, 2005

E.I.T. (FE) Exam, 2004

ACHIEVEMENTS BY ADVISED GRADUATE STUDENTS

First Place in Best Poster Awards, College of Engineering, The University of Akron, Akron, OH, 2018 (AhmadReza Soraghi, Ph.D. student)

Institute of Transportation Engineers Scholarship, 2018 (Josh Thomas, M.S. student)

HDR Transportation Scholarship, 2018 (Josh Thomas, M.S. student)

Outstanding contribution in reviewing, Engineering Structures, Elsevier, 2016 (Siavash Sajedi, Ph.D. student).

Year's recipient of the Graduate Student Award, National Association for Corrosion Engineers, New Orleans, LA, 2017 (Siavash Sajedi, Ph.D. student).

Second Place in Best Poster Awards, DOD Corrosion Conference, Pittsburgh, PA, 2015 (Siavash Sajedi, Ph.D. student).

ASME OMAE2014, Outreach for Engineers Scholarship Award, 2014 (Mojtaba Dyanati, Ph.D. student)

Second Place in Best Poster Awards, College of Engineering, The University of Akron, Akron, OH, 2014 (Siavash Sajedi, Ph.D. student).