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Summary of Accomplishments

Scholarly Contribution

44 published peer-reviewed journal articles
2 awarded patents
+70 conference presentations and invited talks
Citation: 904, h-index: 18

Research Funding

Total funding as a lead PI: \$4,264,493
Total funding as a Co-PI: \$3,460,829 (My share: \$575,550)
7 NSF-Funded projects a lead PI

Graduate Students Advised

6 completed PhD students
2 completed MS (with thesis) students
3 current PhD students

Professional Service

Associate Editor for the Journal of Bridge Engineering (ASCE)
Guest Editor for a special collection on application on UHPC

ACADEMIC APPOINTMENTS

University of Connecticut, Storrs, CT

Associate Professor, Department of Civil and Environmental Engineering	08/2017-Present
Associate Head for Research Development and Graduate Education	08/2018-08/2019
Assistant Professor, Department of Civil and Environmental Engineering	09/2011-08/2017
Member, Institute of Materials Science	04/2016-Present

Teaching structural and bridge design related courses. Performing research on novel structural materials and technologies to enhance the robustness and sustainability of critical infrastructure. Conducting engineering education research on the creative potential of engineering students with ADHD.

FHWA Turner-Fairbank Highway Research Center, McLane, VA

Senior Research Associate, National Research Council (NRC) of the National Academies (NAE)	05/2019-05/2020
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Collaborated with the Bridge Engineering Team to study various applications of Ultra-High Performance Concrete (UHPC) in bridge construction and bridge rehabilitation. The works involved large-scale experiments and analytical simulations.

University of Nevada, Reno, NV

Research Scientist, Department of Civil and Environmental Engineering	12/2009-08/2011
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Led the design of a large-scale test-bed structure for NSF NEESR-Grand Challenge: Simulation of the Seismic Performance of Nonstructural Systems. Studied the seismic performance of nonstructural systems as part of NSF NEESR-GC, NEES TIPS, and E-Defense experiments on a full-scale, five-story steel frame. Assisted in the design of the largest shake table test performed on a bridge model under a FHWA/Caltrans funded project: Seismic Effects on Multi-Span Bridges with High Degrees of Horizontal Curvature.

EDUCATION

University of Nevada, Reno, NV

PhD in Civil Engineering, Department of Civil and Environmental Engineering	01/2007-12/2009
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Advisor: Professor M. "Saiid" Saiidi

Dissertation Title: "Seismic Design of Pipe-Pin Connections in Concrete Bridges"

Sharif University of Technology, Tehran, Iran

PhD Student of Structural Engineering, Department of Civil Engineering	02/2005-12/2006
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Sharif University of Technology, Tehran, Iran

MSc in Earthquake Engineering, Department of Civil Engineering	09/2002-11/2004
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Thesis: "Effect of Beam-to-Column Strength Ratio on Effectiveness of FRP Wrapping of Columns"

K. N. Toosi University of Technology, Tehran, Iran

BSc in Civil Engineering (with honors), Department of Civil Engineering	09/1998-09/2002
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FUNDED RESEARCH PROJECTS

National Science Foundation (NSF)

- "Encouraging the Participation of Neurodiverse Students in STEM Graduate Programs to Radically Enhance the Creativity of the Professional Workforce," Aug 2021 to Jul 2024, **\$499,760 (PI)**
- "REU Site: Research Experience for Neurodiverse Students: Transforming the Nation's Aging Infrastructure by Advancing Radical Solutions," Mar 2021 to Mar 2024, **\$406,696 (Co-PI, PI: Alexandra Hain)**
- "RAPID/Collaborative Research: Multi-Hazard Damage to Puerto Rico's Civil Infrastructure - Investigation of the Interactions of 2017 Hurricane Maria and 2020 Earthquake Sequence," Mar 2020 to Feb 2021, **\$43,069 (PI)**
- "IUSE/PFE:RED Innovation Beyond Accommodation: Leveraging Neurodiversity for Engineering Innovation" Jan 2020 to Dec 2024, **\$2,000,000 (Co-PI, PI: Prof. Maria Chrysochoou)**
- "CAREER: Promoting Engineering Innovation Through Increased Neurodiversity by Encouraging the Participation of Students with ADHD," Jan 2017 to Dec 2021, **\$519,970 (PI)**
- "PFI:AIR-TT: A Hybrid Metal/Glass Composite System for Multihazard Resilient Bridge Columns," Sep 2015 to Feb 2017, **\$245,809 (PI)**
- "REU Site: Research Experience in Cyber and Civil Infrastructure Security for Students with ADHD: Fostering Innovation," Mar 2015 to Sep 2018, **\$414,099 (PI)**
- "Research Initiation Grant: Nurturing the Creativity of Students with ADHD in Engineering Disciplines," Sep 2014 to Sep 2016, **\$149,997 (PI)**
- "Development of Seismic Protective Technologies for Ceiling-Piping-Partition Nonstructural Systems," Subaward from the University of Nevada, Reno, Jan 2012 to Aug 2012, **\$26,700 (PI)**

Department of Defense (DoD)

- "Mechanical Characterization of Bolted Joints with Different Interface Conditions," Through NIUVT, Aug 2020 to Jul 2022, **\$275,213 (PI)**

United States Department of Education

- "GAANN: Addressing Aging Infrastructure: From Components to Networks," Jul 2019 to Jun 2021, **\$74,625 (Co-PI, PI Prof. Timothy Vadas)**

Federal Highway Administration/Connecticut Department of Transportation (FHWA/ConnDOT)

- "Beam End Encasement for the Construction of Maintenance-Free Steel Bridges," Through JHRAC, Jan 2021 to Dec 2022, **\$120,000 (Co-PI, PI: Alexandra Hain)**
- "Adaptation of 3D Scanning Technology for High Precision Bridge Inspection," Jan 2018 to Jun 2020, **\$248,691 (PI)**
- "Repair of Steel Beam/Girder Ends with Ultra High-Strength Concrete (Phase III) + supplement for second onsite implementation," Jul 2018 to Jun 2022, **\$740,393 (PI)**
- "Repair of Steel Beam/Girder Ends with Ultra High-Strength Concrete (Phase II)," Mar 2015 to Jun 2018, **\$676,690 (PI)**

"Repair of Steel Beam/Girder Ends with Ultra High-Strength Concrete (Phase I)," Jul 2013 to Dec 2014, **\$131,771 (PI)**

"Development of a Simplified Design Method and Reinforcement Detail for the Acute Corner of Skewed Bridge Decks," Through JHRAC, Aug 2016 to Aug 2017, **\$49,995 (PI)**

California Department of Transportation (Caltrans)

"Development of a Rational Design Method for Shear Keys at In-Span Hinges in Multi-Frame Highway Bridges," Jul 2012 to Jun 2014, **\$105,542 (PI)**

"Seismic Design of Column-Footing Connections with Pipe-Pin Hinges for Accelerated Bridge Construction," Jul 2011 to Jun 2013, **\$187,883 (Co-PI, PI: Prof. Saaid Saiidi)**

Internal Grants

"Prediction of Bridge Performance Degradation due to Corrosion, Material Loss, and Microstructural Changes using Experiment, Field Samples, and 3D Scanning," UConn IMS IMMP, May 2020 to Apr 2021, **\$10,000 (Co-PI, PI: Lesley Frame)**

"Development of a Novel Self-Centering Restraint System for Resilient Seismic Design of Mechanical Equipment," Jan 2012 to Dec 2012, UConn Foundation, **\$25,062 (PI)**

Industry Funding

"Comcast Neurodiversity Fellowship," Comcast Innovation Fund, **\$40,000 (PI)**.

"Development of Smart PTFE for Bridge Bearings," Connecticut Center for Advanced Technology, Inc. and Enflo Corporation, Mar 2015 to Aug 2015, **\$71,732 (PI)**

Travel Awards

2017 NSF Partners for Innovation (PFI) Grantee Conference, June 5-7, 2017, Atlanta, GA.

2016 Pan NSF-REU (Planning Workshop), April 28-30, 2016, Washington, DC.

Participated and presented in DO-IT workshop of AccessEngineering Capacity Building Institute, April 5-8, 2016, Seattle, WA.

2014 Educator Workshop, American Institute of Steel Construction, July 30-31, 2014, Chicago, IL.

PATENTS AND INVENTIONS

Underlined names are advisees. Names in italics are former advisors.

1. **Zaghi, Arash Esmaili**, and Echevarria, Alicia Anisita. "Reinforced Structural Column System" U.S. Patent No. US9745751 B2.
2. **Zaghi, Arash Esmaili**, McMullen, Kevin, and Hoagland, Michael "Force Sensing Sliding Bearing" US Patent No. US10458472B2.

SCHOLARLY CONTRIBUTIONS

Underlined names are advisees. Italic name is former advisor.

Invited Presentations and Workshops

1. "UHPC Innovations: What does the future hold?" 2nd International Interactive Symposium on UHPC, June 2-5, 2019, Albany, NY
2. National Science Foundation Engineering Education and Centers Grantees Conference, October 29-31, 2017, Arlington, VA.
3. "Comcast Neurodiversity Initiative," Cybersecurity Competitions & Conference at the University of Connecticut, October 19-20, 2017, Storrs, CT.
4. "High Performance Concrete Steel Beam End Repairs," 93rd Annual Meeting of Northeastern States Materials Engineers' Association, October 17-18, 2017, Hartford, CT.
5. "Repair for Steel Bridge Girders with Corrosion Damage Utilizing UHPC," New York State Department of Transportation (NYDOT) Ultra-High Performance Concrete Workshop, June 28, 2017, Albany, NY.
6. Council on Undergraduate Research 2017 Posters on the Hill, April 25-26, 2017, Washington, DC.
7. National Academy of Engineering (NAE) Workshop on the Engagement of Engineering Societies in Undergraduate Engineering Education, January 26-27, 2017, Washington, DC.
8. "Design of a Test-Bed Structure for Shake Table Testing of Nonstructural Systems," NHERI@UCSD User's Workshop for the Large High Performance Outdoor Shake Table (LHPOST), December 12-13, 2016, San Diego, CA.
9. "Promoting Innovation by Encouraging the Participation of Students with ADHD in Engineering," National Academy of Engineering (NAE), 2016 Frontiers of Engineering Education, September 25-28, 2016, Irvine, CA.
10. "Beam End Repair Options," Northeast Bridge Preservation Partnership 2016 Meeting, September 19-21, 2016, Baltimore, MD.
11. "Steel Bridge Beam Rehabilitation Using Ultra-High Performance Concrete (UHPC)," The First International Symposium of UHPC, July 18-20, 2016, Des Moines, IA.
12. "Research Opportunity in Cyber and Civil Infrastructure Security for Students with ADHD: Developing the Next Generation of Creative Engineers," 2016 Pan NSF-REU, April 28, 2016, Washington, DC.
13. "Creative Potential and Challenges of Students with ADHD in Engineering Programs," AccessEngineering Capacity Building Institute, April 8, 2016, Seattle, WA.
14. "Design of Concrete-Filled FRP Tube Bridge Columns for Multihazard Resilience" Session 406: Multihazard Assessment and Design of Bridges, 93rd Annual Meeting of Transportation Research Board, Jan 14, 2014, Washington, DC.
15. "Next-Generation Multi-Hazard Resilient Bridge Columns for Accelerated Bridge Construction," Accelerated Bridge Construction Workshop, Connecticut Society of Civil Engineers Section of ASCE, Oct. 23, 2013, Berlin, CT.
16. "Short Course on Principals of Seismic Design," Live Seminars, HalfMoon Education, Nov. 29, 2012, Waterbury, CT.

Published Peer-Reviewed Journal Articles

1. Taylor, C. L., **Zaghi, A. E.** (2021). "The Nuanced Relationship Between Creative Cognition and the Interaction Between Executive Functioning and Intelligence." *The Journal of Creative Behavior*, <https://doi.org/10.1002/jocb.493>
2. Kruszewski, D., & **Zaghi, A. E.** (2021). "Load transfer between thin steel plates and ultra-high performance concrete through different types of shear connectors." *Engineering Structures*, 227, 111450. <https://doi.org/10.1016/j.engstruct.2020.111450>
3. Graybeal, B., Brühwiler, E., Kim, B. S., Toutlemonde, F., Voo, Y. L., & **Zaghi, A. E.** (2020). "International Perspective on UHPC in Bridge Engineering." *Journal of Bridge Engineering*, 25(11), 04020094. [https://ascelibrary.org/doi/abs/10.1061/\(ASCE\)BE.1943-5592.0001630](https://ascelibrary.org/doi/abs/10.1061/(ASCE)BE.1943-5592.0001630)
4. Taylor, C., **Zaghi, A. E.**, Kaufman, J. C., Reis, S., and Renzulli, J., (2020) "Divergent thinking and academic performance of students with attention deficit hyperactivity disorder characteristics in engineering" *Journal of Engineering Education*, 109(2), 213-229. <https://doi.org/10.1002/jee.20310>
5. Syharat, C., Hain, A., **Zaghi, A. E.** (2020) "Promoting Neurodiversity in Engineering Through Specialized Outreach Activities for Pre-college Students." *Journal of Higher Education Theory & Practice*, 20(14), 111-123.
6. McMullen, K. and **Zaghi, A. E.**, (2020). "Evaluation of Full-Scale Corroded Steel Plate Girders Repaired with UHPC: Experimental Study" *Journal of Bridge Engineering*. [https://doi.org/10.1061/\(ASCE\)BE.1943-5592.0001535](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001535)
7. Hain, A. and **Zaghi, A. E.**, (2020). "Applicability of Photogrammetry for Inspection and Monitoring of Dry-Stone Masonry Retaining Walls" *Transportation Research Record*. 2674(9), 287-297. <https://doi.org/10.1177/0361198120929184>
8. Hain, A., **Zaghi, A. E.**, Saiidi, M. S., (2019) "Flexural Behavior of Hybrid Concrete-Filled Fiber Reinforced Polymer Tube Columns" *Composite Structures*, Vol. 230. <https://doi.org/10.1016/j.compstruct.2019.111540>
9. Kruszewski, D., **Zaghi, A. E.**, & Wille, K. (2019) "Durability Evaluation of Headed Shear Studs Embedded in Ultrahigh-Performance Concrete via Electrochemical Corrosion." *Journal of Bridge Engineering*, Vol. 24(5). [doi.org/10.1061/\(ASCE\)BE.1943-5592.0001401](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001401)
10. Hain, A., Motaref, S., **Zaghi, A. E.**, (2019) "Influence of Fiber Orientation and Shell Thickness on the Axial Compressive Behavior of Concrete-Filled Fiber-Reinforced Polymer Tubes" *Construction and Building Materials*. Vol. 220, 353-363. doi.org/10.1016/j.conbuildmat.2019.05.194
11. Mehr, M., and **Zaghi, A. E.**, (2019) "Contributing factors to seismic force demand on in-span shear keys in multi-frame bridges." *Structure and Infrastructure Engineering*. Vol. 15(2), 206-218 <https://doi.org/10.1080/15732479.2018.1527372>
12. Hain, A., **Zaghi, A. E.**, Kamali, A., Zaffetti, R. P., Overturf, B., & Pereira, F. E. (2019). "Applicability of 3-D Scanning Technology for Section Loss Assessment in Corroded Steel Beams." *Transportation Research Record*, 2673(3), 271–280. doi.org/10.1177/0361198119832887
13. Kruszewski, D., and **Zaghi, A. E.**, (2019) "Design of Various Shear Connectors for Repair of Corroded Steel Girders with Ultra-High Performance Concrete." *Transportation Research Record*, Vol. 2673(2), 521-530. doi.org/10.1177/0361198119826080

14. Kruszewski, D., Wille, K., and **Zaghi, A. E.**, (2018) "Push-Out Behavior of Headed Shear Studs Welded on Thin Plates and Embedded in UHPC." *Engineering Structures*, Vol. 173, 429-441. [doi:10.1016/j.engstruct.2018.07.013](https://doi.org/10.1016/j.engstruct.2018.07.013)
15. Kruszewski, D., Wille, K., and **Zaghi, A. E.**, (2018) "Design considerations for headed shear studs embedded in ultra-high performance concrete as part of a novel bridge repair method" *Journal of Constructional Steel Research*, Vol. 149, 180-194. [doi:10.1016/j.jcsr.2018.07.015](https://doi.org/10.1016/j.jcsr.2018.07.015)
16. O'Brien, C., and **Zaghi, A. E.**, (2018) "Mechanical Characteristics of Hybrid Composites with +/-45° Glass and 0°/90° Stainless Steel Fibers" *Materials*, 11(8). doi.org/10.3390/ma11081355
17. Taylor, C., **Zaghi, A. E.**, Kaufman, J. C., Reis, S., and Renzulli, J., (2018) "Characteristics of ADHD Related to Executive Function: Differential Predictions for Creativity-Related Traits" *Journal of Creative Behavior*. <https://doi.org/10.1002/jocb.370>
18. Stromquist-LeVoir, G., McMullen, K., **Zaghi, A. E.**, and Christenson, R., (2018) "Determining Time Variation of Cable Tension Forces in Suspended Bridges Using Time-Frequency Analysis" *Advances in Civil Engineering*. ID 1053232, [doi: 10.1155/2018/1053232](https://doi.org/10.1155/2018/1053232)
19. Mehr, M., and **Zaghi, A. E.**, (2018) "Modified Elastic Dynamic Analysis (EDA) for Seismic Demand on In-Span Hinge Shear Keys in Multi-frame Bridges" *Transportation Research Record*. Vol. 2672(41), pp. 75–86. [doi: 10.1177/0361198118767420](https://doi.org/10.1177/0361198118767420)
20. O'Brien, C. N., McBride, A., **Zaghi, A. E.**, Burke, K. A., and Hill, A. (2017) "Mechanical Behavior of Stainless Steel Fiber-Reinforced Composites Exposed to Accelerated Corrosion" *Materials*, Vol. 10(7). [doi:10.3390/ma10070772](https://doi.org/10.3390/ma10070772)
21. McBride, A. K., Turek, S. L., **Zaghi, A. E.**, and Burke, K. A., (2017) "Mechanical Behavior of Hybrid Glass/Steel Fiber Reinforced Epoxy Composites" *Polymers*. Vol. 9(4). [doi:10.3390/polym9040151](https://doi.org/10.3390/polym9040151)
22. Bruneau, M., Padgett, J. E., Barbato, M., **Zaghi, A. E.**, Li, Y., and Mitrani-Reiser, J. (2017) "State-of-the-Art of Multihazard Design" *Journal of Structural Engineering*, Vol. 143(10). [doi: 10.1061/\(ASCE\)ST.1943-541X.0001893](https://doi.org/10.1061/(ASCE)ST.1943-541X.0001893)
23. Zmetra, K., McMullen, K., **Zaghi, A. E.**, and Wille, K. (2017) "Experimental Study of UHPC Repair for Corrosion Damaged Steel Girder Ends" *Journal of Bridge Engineering*, Vol. 22(8). [doi:10.1061/\(ASCE\)BE.1943-5592.0001067](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001067)
24. **Zaghi, A. E.**, Reis, S., Renzulli, J., and Kaufman, J. C. (2017) "Exploring the Creativity Potential of ADHD Students in Engineering Programs" *International Journal for Talent Development and Creativity*, Vol. 5(1) and 5(2).
25. **Zaghi, A. E.**, Padgett, J. E.; Bruneau, B., Barbato, B., Li, Y., Mitrani-Reiser, J., and McBride, A. (2016) "Forum Paper: Establishing Common Nomenclature, Characterizing the Problem, and Identifying Future Opportunities in Multi-Hazard Design" *Journal of Structural Engineering*, Vol. 142(12). [doi:10.1061/\(ASCE\)ST.1943-541X.0001586](https://doi.org/10.1061/(ASCE)ST.1943-541X.0001586)
26. Asgarian, B., Dadras Eslamlou, S., **Zaghi, A. E.**, and Mehr, M. (2016) "Progressive Collapse Analysis of Power Transmission Towers" *Journal of Constructional Steel Research*, Vol. 123, pp. 31-40. [doi:10.1016/j.jcsr.2016.04.021](https://doi.org/10.1016/j.jcsr.2016.04.021)

27. Soroushian, S., Maragakis, E. "M.", **Zaghi, A.E.**, Rahmanishamsi, E., Itani, A.M., and Pekcan, G. (2016) "Response of a 2-Story Test-Bed Structure for the Seismic Evaluation of Nonstructural Systems" *Earthquake Engineering and Engineering Vibration*, 15(1), pp.19-21. [doi:10.1007/s11803-016-0302-8](https://doi.org/10.1007/s11803-016-0302-8)
28. Mehr, M., and **Zaghi, A. E.** (2016) "Seismic Response of Multi-Frame Bridges" *Bulletin of Earthquake Engineering*, Vol. 14(4), pp. 1219-1243. [doi:10.1007/s10518-016-9882-y](https://doi.org/10.1007/s10518-016-9882-y)
29. **Zaghi, A.**, Soroushian, S., Echevarria Heiser, A., Maragakis, M., and Bagtzoglou, A. (2016) "Development and Validation of a Numerical Model for Suspended-Ceiling Systems with Acoustic Tiles" *Journal of Architectural Engineering*, Vol. 22(3). [doi:10.1061/\(ASCE\)AE.1943-5568.0000213](https://doi.org/10.1061/(ASCE)AE.1943-5568.0000213)
30. Zmetra, K., Mehr, M., and **Zaghi, A. E.**, (2016) "Performance of Pipe Extender/Shear Key at In-span Hinges of Multiframe Bridges" *Transportation Research Record*, Vol. 2592(1), pp. 136–142. [doi:10.3141/2592-15](https://doi.org/10.3141/2592-15)
31. Echevarria, A., **Zaghi, A. E.**, Chiarito, V., Christenson, R., and Woodson, S. (2015) "Experimental Comparison of the Performance and Residual Capacity of CFFT and RC Bridge Columns Subjected to Blasts" *Journal of Bridge Engineering*, Vol. 21(1). [doi:10.1061/\(ASCE\)BE.1943-5592.0000762](https://doi.org/10.1061/(ASCE)BE.1943-5592.0000762)
32. Echevarria, A., **Zaghi, A. E.**, Christenson, R., and Plank, R. (2015) "Residual Axial Capacity Comparison of CFFT and RC Bridge Columns after Fire" *Polymers*, Vol. 7(5), pp. 876-895. [doi:10.3390/polym7050876](https://doi.org/10.3390/polym7050876)
33. Soroushian, S., **Zaghi, A. E.**, Maragakis, M., Echevarria, A., Tian, Y., and Filiatrault, A. (2015) "Analytical Seismic Fragility Analyses of Fire Sprinkler Piping Systems with Threaded Joints" *Earthquake Spectra*, Vol. 31(2), pp. 1125-1155. [doi:10.1193/083112EQS277M](https://doi.org/10.1193/083112EQS277M)
34. Echevarria, A., **Zaghi, A.**, Christenson, R., and Accorsi, M. (2015) "CFFT Bridge Columns for Multihazard Resilience" *Journal of Structural Engineering*, Vol. 142(8). [doi:10.1061/\(ASCE\)ST.1943-541X.0001292](https://doi.org/10.1061/(ASCE)ST.1943-541X.0001292)
35. **Zaghi, A. E.**, Soroushian, S., Itani, A., Maragakis, E. M., Pekcan, G., and Mehrraoufi, M. (2015) "Impact of Column-to-Beam Strength Ratio on the Seismic Response of Steel MRFs" *Bulletin of Earthquake Engineering*, Vol. 13(2), pp. 635-652. [doi:10.1007/s10518-014-9634-9](https://doi.org/10.1007/s10518-014-9634-9)
36. Soroushian, S., **Zaghi, A.**, Maragakis, E., Echevarria, A., Tian, Y., and Filiatrault, A. (2014). "Seismic Fragility Study of Fire Sprinkler Piping Systems with Grooved Fit Joints" *Journal of Structural Engineering*, Vol. 141(6). [doi:10.1061/\(ASCE\)ST.1943-541X.0001122](https://doi.org/10.1061/(ASCE)ST.1943-541X.0001122)
37. Soroushian, S., **Zaghi, A. E.**, Maragakis, E. M., Echevarria, A. (2014) "Seismic Fragility Study of Displacement Demand on Fire Sprinkler Piping Systems" *Journal of Earthquake Engineering*, Vol. 18(7), pp. 1129-1150. [doi:10.1080/13632469.2014.917059](https://doi.org/10.1080/13632469.2014.917059)
38. Wieser, J., Pekcan, G., **Zaghi, A. E.**, Itani, A., and Maragakis, E. M. (2013) "Floor Accelerations in Yielding Special Moment Resisting Frame Structures" *Earthquake Spectra*, Vol. 29(3), pp. 987-1002. [doi:10.1193/1.4000167](https://doi.org/10.1193/1.4000167)
39. **Zaghi, A. E.**, Maragakis, E. M., Itani, A., and Goodwin, E. (2012) "Experimental and Analytical Studies of Hospital Piping Assemblies Subjected to Seismic Loading" *Earthquake Spectra*, Vol. 28(1), pp. 367-384. [doi:10.1193/1.3672911](https://doi.org/10.1193/1.3672911)
40. **Zaghi, A. E.**, Saiidi, M., and Mirmiran, A., (2012) "Shake Table Response and Analysis of a Concrete-Filled FRP Tube Bridge Column" *Composite Structures*, Vol. 94(5), pp. 1564–1574. [doi:10.1016/j.compstruct.2011.12.018](https://doi.org/10.1016/j.compstruct.2011.12.018)

41. **Zaghi, A. E., Saiidi, M., and El-Azazy, S.** (2011) "Shake Table Studies of a Concrete Bridge Pier Utilizing Pipe-Pin Two-Way Hinges" *Journal of Bridge Engineering*, Vol. 16(5), pp. 587-596. [doi:10.1061/\(ASCE\)BE.1943-5592.0000191](https://doi.org/10.1061/(ASCE)BE.1943-5592.0000191)
42. **Zaghi, A. E., and Saiidi, M.** (2011) "Bearing and Shear Failure of Pipe-Pin Hinges Subjected to Earthquakes" *Journal of Bridge Engineering*, Vol. 16(3), pp. 340-350. [doi:10.1061/\(ASCE\)BE.1943-5592.0000160](https://doi.org/10.1061/(ASCE)BE.1943-5592.0000160)
43. **Zaghi, A. E., and Saiidi, M.** (2010) "Seismic Performance of Pipe-Pin Two-Way Hinges in Concrete Bridge Columns" *Journal of Earthquake Engineering*, Vol. 14(8), pp. 1253-1302. [doi:10.1080/13632469.2010.490321](https://doi.org/10.1080/13632469.2010.490321) (Invited extended paper).
44. Khaloo, A.R. and **Esmaili, A.** (2007), "Strengthening Design Limitations of an RC Frames Using FRP Column Wrapping Considering Column-to-Beam Strength Ratio" *Scientia Iranica*, Vol. 14(5), pp. 405-413. http://www.sid.ir/en/vewssid/j_pdf/95520070506.pdf

Journal Articles under Review

1. **O'Brien, C., and Zaghi, A. E.,** (202x) "Modelling the Nonlinear Shear Stress-Strain Response of Composites with Metal and Non-Metal Reinforcement." *Composites Part B*, (second review)
2. **Hain, A., and Zaghi, A. E.,** (202x) "Experimental investigation of a simple shear connection to concrete-filled FRP tube (CFFT) columns" *Engineering Structures*, (first review)
3. **McMullen, K. and Zaghi, A. E.,** (202x) "Accelerated Retrofit of Steel Bridge Girder End Corrosion Using Ultra-High Performance Concrete" *Journal of Constructional Steel Research*, (first review)

Conference Proceedings and Presentations

1. **McMullen, K. and Zaghi, A. E.** "Rapid rehabilitation of deteriorated beam ends with ultra-high performance concrete" *IABMAS2020 Online Conference*, April 11-18, 2021.
2. Taylor, C. L. and **Zaghi, A. E.** "Executive functioning and intelligence interact to predict verbal, but not figural, divergent thinking originality. *Annual Convention of the American Psychological Association (APA)*, August 2021. San Diego, CA.
3. **Hain, A. and Zaghi, A. E.** "Learnings from the Field Implementation of a Novel UHPC Beam End Repair on a Corroded Steel Girder Bridge in Connecticut" *Transportation Research Board (TRB) 100th Annual Meeting*, January 21-29, 2021, Virtual Conference
4. **Hain, A. and Zaghi, A. E.** "Adaptation of 3D Scanning Technology for High Precision Bridge Inspection" *Transportation Research Board (TRB) 100th Annual Meeting*, January 21-29, 2021, Virtual Conference
5. **McMullen, K. and Zaghi, A. E.** "Accelerated Repair of Corroded Steel Bridge Girders with Ultra-High Performance Concrete" *Transportation Research Board (TRB) 99th Annual Meeting*, January 12-16, 2020, Washington, D.C.
6. **Hain, A. and Zaghi, A. E.** "Applicability of Photogrammetry for Inspection and Monitoring of Dry-Stone Masonry Retaining Walls" *Transportation Research Board (TRB) 99th Annual Meeting*, January 12-16, 2020, Washington, D.C.
7. **Hain, A., Zaghi, A. E., Fields, T, Barakat, R., Cardinali, A, Culmo, M, Lopata, T.** "Implementation of UHPC for the Repair of a Steel Bridge with Corrosion Damage in Connecticut, USA" *2nd International Interactive Symposium on UHPC*, June 2-5, 2019, Albany, NY

8. Hain, A., **Zaghi, A.E.**, "Evaluation of UHPC as a Repair Material for Corroded Steel Bridge Girders" *2nd International Interactive Symposium on UHPC*, June 2-5, 2019, Albany, NY
9. McMullen, K., and **Zaghi, A. E.**, "Experimental Testing of a Novel Force Sensing Bridge Bearing" *ASCE/SEI Structures Congress*, April 24-27, 2019, Orlando, FL.
10. Kruszewski, D., and **Zaghi, A. E.**, "Design of Various Shear Connectors for Repair of Corroded Steel Girders with UHPC" *Transportation Research Board (TRB) 98th Annual Meeting*, January 13-17, 2019, Washington, D.C.
11. Hain, A., **Zaghi, A.E.**, Kamali, A., Zaffetti, R. P., Overturf, B., Pereira, F. E., "Applicability of 3D Scanning Technology for Section Loss Assessment in Corroded Steel Beams" *Transportation Research Board (TRB) 98th Annual Meeting*, January 13-17, 2019, Washington, DC.
12. McMullen, K., **Zaghi, A. E.**, and Culmo, M. "Repair of Corroded Steel Plate Girders with Ultra-High Performance Concrete" *9th International Conference on Bridge Maintenance, Safety, and Management (IABMAS)*, July 9-13, 2018, Melbourne, Australia.
13. Taylor, C., **Zaghi, A. E.**, Kaufman, J.C., Reis, S., and Renzulli, J., "Promoting Diversity in Engineering through Undergraduate Research Opportunities for Students with ADHD" *2018 ASEE Annual Conference & Exposition*, June 24- 27, 2018, Salt Lake City, UT. <https://peer.asee.org/29969>
14. Greene, J., Mehr, M., **Zaghi, A. E.**, Motaref, S., and Culmo, M., "A Simplified Reinforcement Detail for the Deck Acute Corner in Skewed Bridges" *International Bridge Conference*, June 11-14, 2018, National Harbor, MD.
15. Hain, A., **Zaghi, A. E.**, and Lanning, A., "Moment-Curvature Analysis of Hybrid Concrete-Filled Fiber Reinforced Polymer Tube Columns" *ASCE/SEI Structures Congress*, April 19-21, 2018, Fort Worth, TX. [doi: 10.1061/9780784481332.030](https://doi.org/10.1061/9780784481332.030)
16. McMullen, K., and **Zaghi, A. E.**, "Design of a Repair for Corroded Steel Girders Utilizing Ultra-High Performance Concrete" *ASCE/SEI Structures Congress*, April 19-21, 2018, Fort Worth, TX.
17. Mehr, M., and **Zaghi, A.E.**, "Modified Elastic Dynamic Analysis (EDA) for Seismic Demand on In-Span Hinge Shear Keys in Multi-frame Bridges" *Transportation Research Board (TRB) 97th Annual Meeting*, January 7-11, 2018, Washington, DC.
18. Hain, A., **Zaghi, A. E.**, and Turek, S., "Structural Behavior of Hybrid Concrete-Filled FRP Tubes (HCFFT)" *National Accelerated Bridge Construction Conference*, December 6-8, 2017, Miami, FL.
19. McMullen, K., Kruszewski, D., **Zaghi, A. E.**, and Wille, K. "A Novel Repair Method for Steel Girders with Corrosion Damage Utilizing UHPC" *The International Bridge Conference*, June 5-8, 2017, National Harbor, MD.
20. Hain, C. C., Turek, W. C., **Zaghi, A. E.**, and Hain, A., "Experiences of Pre-College Teachers Working with Undergraduate Engineering Students with ADHD in Research Laboratories" *2017 ASEE Annual Conference & Exposition*, June 25-28, 2017, Columbus, OH.
21. Overturf, B., and **Zaghi, A. E.** "Repair of Steel Beam and Girder Ends with Ultra-High-Strength Concrete" *Transportation Research Board (TRB) 96th Annual Meeting (State Department of Transportation High-Value Research Projects)*, January 8-12, 2017, Washington, DC.
22. Zmetra, K., Hain, A., **Zaghi, A. E.**, and Wille, K. (2017) "Finite Element Analysis and Experimental Comparison for Repair of Corrosion Damaged Steel Girder Ends Using Ultra-High Performance

- Concrete Encasement" *Transportation Research Board (TRB) 96th Annual Meeting*, January 8-12, 2017, Washington, DC.
23. **Zaghi, A. E.**, "Beam End Repair Options" *Northeast Bridge Preservation Partnership 2016 Meeting*, September 19-21, 2016, Baltimore, MD.
 24. **Zaghi, A. E.**, Reis, S., Renzulli, J., and Kaufman, J. C. "Unique Potential and Challenges of Students with ADHD in Engineering Programs" *2016 ASEE Annual Conference & Exposition*, June 26- 29, 2016 New Orleans, LA. [doi:10.18260/p.27107](https://doi.org/10.18260/p.27107)
 25. **Zaghi, A. E.**, Tehranipour, M., and O'Brien, C. "Major Observations from a Specialized REU Program for Engineering Students with ADHD" *2016 ASEE Annual Conference & Exposition*, June 26- 29, 2016 New Orleans, LA. [doi:10.18260/p.25588](https://doi.org/10.18260/p.25588)
 26. McMullen, K., **Zaghi, A. E.**, Hoagland, M., and Bokinsky, A. C. "Feasibility of Integrating Force Sensing Technology on PTFE Bearing Design" *8th World Congress on Joints, Bearings and Seismic Systems for Concrete Structures*, September 25-29, 2016, Atlanta, GA.
 27. Zmetra, K., **Zaghi, A.**, and Wille, K., "Rehabilitation of Steel Bridge Girders with Corroded Ends Using Ultra-High Performance Concrete" *ASCE/SEI Structures Congress*, April 2015, Portland, OR. [doi:10.1061/9780784479117.121](https://doi.org/10.1061/9780784479117.121)
 28. Soroushian, S., Maragakis, M., **Zaghi, A.**, and Echevarria, A. "Numerical Simulation of Integrated Suspended Ceiling-Sprinkler Systems" *ASCE/SEI Structures Congress*, April 2015, Portland, OR. [doi:10.1061/9780784479117.162](https://doi.org/10.1061/9780784479117.162)
 29. Echevarria, A., **Zaghi, A. E.**, Chiarito, V., and Christenson, R., "Blast Resilience of Concrete-Filled FRP Tube (CFFT) Bridge Columns" *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS)*, July 7-11, 2014, Shanghai, China. [doi:10.1201/b17063-225](https://doi.org/10.1201/b17063-225)
 30. Echevarria, A., **Zaghi, A. E.**, Chiarito, V., and Christenson, R., "The Seismic, Blast and Fire Resilience of Concrete Filled FRP Tube (CFFT) Bridge Columns" *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS)*, July 7-11, 2014, Shanghai, China. [doi:10.1201/b17063-110](https://doi.org/10.1201/b17063-110)
 31. Soroushian, S., Maragakis, M., Jenkins, C., **Zaghi, A.**, and Echevarria, A., "Analytical Simulation of the Performance of Ceiling-Sprinkler Systems in Shake Table Tests Performed on a Full-Scale 5-Story Building" *ASCE/SEI Structures Congress*, May 2014, Boston, MA. [doi:10.1061/9780784413357.164](https://doi.org/10.1061/9780784413357.164)
 32. Echevarria, A., **Zaghi, A. E.**, Chiarito, V., and Christenson, R. "Performance Evaluation of Reinforced Concrete Bridge Columns through Experimental Blast Testing" *ASCE/SEI Structures Congress*, May 2014, Boston, MA. [doi:10.1061/9780784413357.042](https://doi.org/10.1061/9780784413357.042)
 33. Echevarria, A., **Zaghi, A. E.**, and Saiidi, M. "Applicability of Concrete Filled FRP Tube (CFFT) System for Multihazard Resilient Bridge Columns" *ASCE/SEI Structures Congress*, May 2014, Boston, MA. [doi:10.1061/9780784413357.041](https://doi.org/10.1061/9780784413357.041)
 34. Echevarria, A., **Zaghi, A. E.**, and Christenson, R., (2014) "Performance Evaluation of Reinforced Concrete Bridge Columns after Fire Exposure" *ASCE/SEI Structures Congress*, May 2014, Boston, MA. [doi:10.1061/9780784413357.039](https://doi.org/10.1061/9780784413357.039)
 35. Echevarria, A., **Zaghi, A. E.**, and Christenson, R. "Fire Resistance of Concrete Filled FRP Tube (CFFT) Bridge Columns" *ASCE/SEI Structures Congress*, May 2013, Pittsburgh, PA.

36. **Zaghi, A.E., Echevarria, A.,** Christenson, R., Chiarito, V., and Woodson, S. "Blast Performance of Concrete Filled FRP Tube (CFFT) Bridge Columns" *ASCE/SEI Structures Congress*, May 2013, Pittsburg, PA.
37. Soroushian, S., **Zaghi, A. E.,** Maragakis, M., Echevarria, A., Tian, Y., and Filiatrault, A. "Seismic Fragility Study of Fire Sprinkler Piping Systems" *ASCE/SEI Structures Congress*, May 2013, Pittsburg, PA. [doi:10.1061/9780784412848.135](https://doi.org/10.1061/9780784412848.135)
38. Soroushian, S., **Zaghi, A. E.,** Maragakis, M., Pekcan, G., Itani, A., and Rahmanishamsi, E. "Development of Shake Table Motions for System-Level Full-Scale Seismic Evaluation of Drift-Sensitive Nonstructural Systems" *ASCE/SEI Structures Congress*, May 2013, Pittsburg, PA.
39. Soroushian, S., Maragakis, M., **Zaghi, A. E.,** Echevarria, A., Tian, Y., and Filiatrault, A., "Numerical Seismic Fragility of Fire Sprinkler Piping Systems with Threaded Joints" *10th International Conference on Urban Earthquake Engineering (10CUEE)*, March 2013, Tokyo Institute of Technology, Tokyo, Japan.
40. Sorooshian, S., Maragakis, M., Ryan, K., **Zaghi, A. E.,** Sato, E., Mosqueda, G., Tedesco, L., and Alvarez, D., "Seismic Response of Nonstructural Systems in NEES TIPS/NEES Nonstructural/NIED Collaborative Tests" *9th International Conference on Urban Earthquake Engineering & 4th Asia Conference on Earthquake engineering*, March 2012, Tokyo Institute of Technology, Tokyo, Japan.
41. Echevarria, A., **Zaghi, A. E.,** Sorooshian, S., and Maragakis, M., "Seismic Fragility of Suspended Ceiling Systems" *15th World Conference on Earthquake Engineering (15WCEE)*, Sep. 2012, Lisbon, Portugal. http://www.iitk.ac.in/nicee/wcee/article/WCEE2012_4325.pdf
42. Wieser, J., Maragakis, E., Buckle, I., and **Zaghi, A. E.** "Experimental Evaluation of Seismic Pounding at Seat-Type Abutments of Horizontally Curved Bridges" *15th World Conference on Earthquake Engineering (15WCEE)*, Sep. 2012, Lisbon, Portugal. http://www.iitk.ac.in/nicee/wcee/article/WCEE2012_4633.pdf
43. Soroushian, S., Ryan, K.L., Maragakis, M., Wieser, J., Sasaki, T., Sato, E., Okazaki, T., Tedesco, L., **Zaghi, A.E.,** Mosqueda, G., and Alvarez, D., "NEES/E-Defense Tests: Seismic Performance of Ceiling / Sprinkler Piping Nonstructural Systems in Base Isolated and Fixed Base Building" *15th World Conference on Earthquake Engineering (15WCEE)*, Sep. 2012, Lisbon, Portugal. http://www.iitk.ac.in/nicee/wcee/article/WCEE2012_5101.pdf
44. McClure, D., **Zaghi, A. E.,** "Vulnerability of Lattice Towers to Blast Induced Damage Scenarios" *Electrical Transmission and Substation Conference, ASCE*, Nov. 2012, Ohio, USA. [doi:10.1061/9780784412657.004](https://doi.org/10.1061/9780784412657.004)
45. Soroushian, S., **Zaghi, A. E.,** Ryan, K., Maragakis, M., and Mosqueda, G., "Seismic Response of Steel Studded Gypsum Partition Walls in NEES TIPS/NEES Nonstructural/NEID Collaborative Tests on a Full Scale 5-Story Building" *ASCE/SEI Structures Congress*, March 2012, Chicago, USA.
46. Soroushian, S., Ryan, K., Maragakis, M., Sato, E., Sasaki, T., Okazaki, T., Tedesco, L., **Zaghi, A.,** Mosqueda, G., and Alvarez, D. (2012) "Seismic Response of Ceiling/Sprinkler Piping Nonstructural Systems in NEES TIPS/NEES Nonstructural/NIED Collaborative Tests on a Full Scale 5-Story Building" *ASCE/SEI Structures Congress*, Mar. 2012, Chicago, USA. [doi:10.1061/9780784412367.118](https://doi.org/10.1061/9780784412367.118)
47. Ryan, K., Dao, N., Soroushian, S., Sato, E., Maragakis, M., **Zaghi, A. E.,** Sasaki, T., Mosqueda, G., McMullin, K., and Okazaki, T., "Seismic Interaction of Structural System and Nonstructural Components in the NEES TIPS/NEES Nonstructural/NIED Collaborative Tests at E-Defense" *ASCE/SEI Structures Congress*, March 2012, Chicago, USA.

48. Wieser, J., **Zaghi, A. E.**, Maragakis, E. M., and Buckle, I., "A Methodology for the Experimental Evaluation of Seismic Pounding at Seat-Type Abutments of Horizontally Curved Bridges" *ASCE/SEI Structures Congress*, March 2012, Chicago, USA. [doi:10.1061/9780784412367.055](https://doi.org/10.1061/9780784412367.055)
49. *Saiidi, M.*, Vosoughi, A., **Zaghi, A.**, Motaref, S., and Cruz, C. "Innovative Earthquake-Resistant Bridges Repair, Connections, and Materials" *IBSBI 2011*, October 13-15, 2011, Athens, Greece.
50. Dao, N., Ryan, K., Sato, E., Okazaki, T., Mahin, S., **Zahgi, A.**, Kajiwara, K., and Matsumori, T. "Experimental Evaluation of an Innovative Isolation System for a Lightweight Steel Moment Frame Building at E-Defense" *ASCE/SEI Structures Congress*, April 2011, Las Vegas, USA. [doi:10.1061/41171\(401\)256](https://doi.org/10.1061/41171(401)256)
51. Maragakis, E. M., **Zaghi, A. E.**, Itani, A., Pekcan, G., Soroushian, S. and Wieser, J., "Development of a Large-Scale Test Bed for the Simulation of the Seismic Performance of Nonstructural Systems" *8th International Conference on Urban Earthquake Engineering*, Mar 2011, Tokyo Institute of Technology, Tokyo, Japan.
52. **Zaghi, A. E.**, Soroushian, S., Wieser, J., Maragakis, E. M., Pekcan, G., and Itani, M., "Seismic Analysis of Fire Sprinkler Systems" *Eighth International Conference on Structural Dynamics EURODYN 2011*, Jul 2011, Leuven, Belgium. <http://www.eurodyn2011.org/papers/MS02-1099.pdf>
53. Maragakis, E. M., **Zaghi, A. E.**, Itani, A., Pekcan, G., Soroushian, S. and Wieser, J., "Simulation of the Seismic Performance of Nonstructural Systems: Development of a Large Scale Test-Bed Structure" *NSF Engineering Research and Innovation Conference*, Jan. 2011, Georgia, Atlanta, GA, USA.
54. **Zaghi, A. E.**, Maragakis, E. M., Itani, A., and Goodwin, E. "Experimental and Analytical Studies of Hospital Piping Subassemblies Subjected to Seismic Loading" *ASCE/SEI Structures Congress*, Apr. 2011, Las Vegas, USA. [doi:10.1061/41171\(401\)105](https://doi.org/10.1061/41171(401)105)
55. Soroushian, S., Maragakis, E. M., Itani, M., Pekcan, G., and **Zaghi, A. E.** "Design of a Test Bed Structure for Shake Table Simulation of the Seismic Performance of Nonstructural Systems" *ASCE/SEI Structures Congress*, Apr. 2011, Las Vegas, USA. [doi:10.1061/41171\(401\)106](https://doi.org/10.1061/41171(401)106)
56. **Zaghi, A. E.**, *Saiidi, M. S.*, and Doyle, K. "Telescopic Pipe-Pin Two-Way Hinges" Poster presentation, *EERI Annual Meeting*, Feb. 2009, Salt Lake City, UT.
57. **Zaghi, A. E.**, and *Saiidi, M.* "Mechanism of Shear Force Transfer in RC Columns with Pipe-Pins" *Tenth Pan American Congress of Applied Mechanics*, January 2008, Cancun, Mexico, pp. 243-246.
58. **Zaghi, A.**, and *Saiidi, M.* "A Simple Nonlinear Model for Pipe-Pin Shear Keys in Concrete Bridges – Bearing Failure Mode" *First International Conference on Computational Technologies in Concrete Structures (CTCS '09)*, Session W4A, May 2009, Jeju, S. Korea.
59. Khaloo, A.R., and **Esmaili, A.** "Effect of Beam to Column Strength Ratio on Seismic Performance of RC Frames with FRP Wrapped Column" *3rd International Structural Engineering and Construction Conference*, Sep. 2005, Shunan, Japan, pp.167-174.

Peer-Reviewed Technical Reports

1. **Zaghi, A. E.**, Wille, K., Zmetra, K., McMullen, K., Kruszewski, D., & Hain, A. (2016) "Repair of Steel Beam/girder Ends with Ultra High-Strength Concrete-Phase II" *Connecticut Department of Transportation, Bureau of Policy and Planning*, Report Number CT-2295-1-17-2.
2. **Zaghi, A. E.**, Wille, K., and Zmetra, K., (2015) "Repair of Steel Beam/Girder Ends with Ultra High Strength Concrete (Phase I)" *Connecticut Department of Transportation, Bureau of Policy and Planning*,

Report Number CT-2282-F-15-2

<http://www.ct.gov/dot/lib/dot/documents/dpolicy/research/bridgebeam.pdf>

3. Mehr, M., and **Zaghi, A. E.**, (2014) "Development of a Rational Design Method for Shear Keys at In-Span Hinges in MultiFrame Highway Bridges, Part-1: A Rational Seismic Analysis Method for In-Span Hinge Shear Keys" *California Department of Transportation, Division of Engineering Services*, Report No. CA 14-2424 <http://worldcat.org/oclc/940513899>
4. Zmetra, K., Mehr, M., and **Zaghi, A. E.**, (2014) "Development of a Rational Design Method for Shear Keys at In-Span Hinges in MultiFrame Highway Bridges, Part-2: Performance of Pipe Shear Key Detail" *California Department of Transportation, Division of Engineering Services, Division of Engineering Services*, Report No. CA 14-2424 <http://worldcat.org/oclc/940513695>
5. Soroushian, S., Maragakis, E. M., **Zaghi, A. E.**, Echevarria, A., Tian, Y., and Filiatrault, A., (2014) "Comprehensive Analytical Seismic Fragility of Fire Sprinkler Piping Systems" *Multidisciplinary Center for Earthquake Engineering Research (MCEER)*, Report No. MCEER 14-0002, University at Buffalo, the State University of New York. <http://hdl.handle.net/10477/29487>
6. Wieser, J., Pekcan, G., **Zaghi, A. E.**, Itani, A., and Maragakis, E. M., (2012) "Assessment of Floor Accelerations in Yielding Buildings," *Multidisciplinary Center for Earthquake Engineering Research (MCEER)*, Report No. MCEER-12-0008, University at Buffalo, the State University of New York. <http://hdl.handle.net/10477/25373>
7. **Zaghi, A. E.**, and Saïidi, M. (2010) "Seismic Design of Pipe-Pin Connections in Concrete Bridges" *Center for Civil Engineering Earthquake Research, Department of Civil and Environmental Engineering*, University of Nevada, Reno, Nevada, Report No. CCEER-10-01. http://www.dot.ca.gov/hq/esc/earthquake_engineering/Research_Reports/vendor/un_reno/2010-01/CCEER10_01.pdf

Other Significant Intellectual Contributions

1. **Zaghi, A.**, Padgett, J., Hain, A., Tafur, A., Lanning, A., Grilliot, M. (2021) "Data collection of damage to Puerto Rico's infrastructure due to Hurricane Maria and the 2019-2020 earthquakes", *DesignSafe-CI*. <https://doi.org/10.17603/ds2-jj5g-yg64>
2. **Zaghi, A. E.**, and Cachany, M, "Development of a new element model for OpenSees to simulate the impact/pounding and friction phenomena." "ZeroLengthImpact3D." <http://opensees.berkeley.edu/wiki/index.php?title=ZeroLengthImpact3D&redirect=no>

HONORS AND AWARDS

Senior Research Associate, <i>National Research Council (NRC) of the National Academies (NAE)</i>	2019
UTC Professor in Engineering Innovation	2019
National Science Foundation CAREER Award	2017
Project on Bridge Repair was selected as High-Value Sweet Sixteen Projects by TRB	2016
Selected for the National Academy of Engineering's (NAE) 2016 Frontiers of Engineering Education Symposium (FOEE)	2016
Nominated for the National Academy of Engineering's (NAE) 2016 US Frontiers of Engineering Symposium (US FOE)	2016
Featured by the Prism Magazine of the American Society for Engineering Education (ASEE)	2015
C. R. Klewin, Inc. Excellence in Teaching Award, University of Connecticut	2014

Educator of the Year, Finalist, Connecticut Construction Industry Association	2014
Honorary Faculty Member of the National Civil Engineering Honor Society (Chi Epsilon)	2014
C. R. Klewin, Inc. Excellence in Teaching Award, University of Connecticut,	2013
D.E. Crow Innovation Prize for Creative Ideas and Entrepreneurship	2013
Best Venture Business Model, Connecticut Collegiate Business Model Competition	2012
Outstanding Reviewer of the Journal Bridge of Engineering, ASCE	2012
Elected Member of the Honor Society of Phi-Kappa-Phi	2010
PhD with Honors at the University of Nevada, Reno (GPA 4.0)	2009
Ranked First in the graduating class of K. N. Toosi University of Technology	2002

PROFESSIONAL REGISTRATION AND LICENSURE

Structural Engineer (SE), State of Nevada	2017
Professional Engineer (PE), State of California (C 77755)	2011
Professional Engineer (PE), State of Connecticut (0030415)	2013
ACI Examiner for ACI Certification Programs	2012
Concrete Field Testing Technician - Grade I	
Concrete Strength Testing Technician	
Concrete Laboratory Testing Technician – Level 2	
Aggregate Testing Technician – Level 1 & 2	
Aggregate Base Testing Technician	
Certified Engineer for “Seismic Retrofit and Strengthening of Existing Structures,” Iran State Management and Planning Organization	2006

TEACHING EXPERIENCE

Courses Taught

<i>University of Connecticut, Storrs, CT</i>	Total # of Students	Years
CE 5620. Advanced Steel Structures	68	2012, 2015
CE 5380. Bridge Structures	70	2013, 2015, 2018
CE 5090. Adv. Topics: Seismic Design/Bridges	6	2017
CE 4999. Undergraduate Independent Study	18	2012, 2013, 2014, 2015
CE 4900W. Civil Engineering Projects I	24	2013, 2014, 2015
CE 4920W. Civil Engineering Projects II	24	2014, 2015, 2016
CE 3630. Design of Steel Structures	362	2012-2016, 2019
CE 3520. Civil Engineering Materials	63	2012
CE 2110. Applied Mechanics I (Statics)	65	2016
 <i>Sharif University of Technology, Tehran, Iran</i>		2006
Civil 20101. Solid Mechanics Laboratory		

Civil 20208. Construction Materials, Concrete Technology and Laboratory

Evaluations

		Me	Department	University
Mean Score (Old System)	2011 – 2012	8.9/10	8.5/10	8.9/10
Mean Score (New System)	2012 – 2016	4.5/5	4.3/5	4.5/5

PROFESSIONAL EXPERIENCE

Arax Engineering, LLC., Storrs, CT 2017-Present

Co-Founder, Manager of Research and Development

Tazand Civil/Structural Consulting Engineers, Co., Tehran, Iran 2001-2006

(A prominent engineering design firm in Iran)

Structural Engineering Consultant, Project Engineer

Sub Station, Co., Tehran, Iran 2002-2006

(Well-known contractor of electrical power transmission lines and sub stations)

Structural Design Consultant

PROFESSIONAL MEMBERSHIPS AND SERVICES

Significant Scholarly Services

Panelist, National Science Foundation (NSF)

Associate Editor, *Journal of Bridge Engineering*, ASCE

Guest Editor, "Special Collection on the Application of UHPC in Bridge Engineering", *Journal of Bridge Engineering*, ASCE

Member of the Editorial Board of the *International Journal of Earthquake Engineering and Hazard Mitigation (IREHM)*

Member of ASCE "Multi-hazard Mitigation Committee" (October, 2013 to September, 2019)

Member of ASCE "Fire Protection Committee" (October, 2013 to September, 2019)

Chair of "Next-Generation Multihazard Resilient Bridge Systems" Technical Session in Structural Engineering Institute's 2014 Structures Congress, Boston

Co-Chair of "Evaluation and Assessment of Bridges Subject to Fire" Technical Session in Structural Engineering Institute's 2014 Structures Congress, Boston

Chair of "Fire Risks and Impacts to Bridges" Technical Session in Structural Engineering Institute's 2013 Structures Congress, Pittsburgh

Chair of "Seismic Response of Nonstructural Systems in the NEES TIPS/NEES Nonstructural/NIED Collaborative Tests at E-Defense" session in Structural Engineering Institute's 2012 Structures Congress, Chicago

Co-chair of "Experimental Investigation of the Seismic Performance of Horizontally Curved Bridges" session in Structural Engineering Institute's 2012 Structures Congress, Chicago

Co-chair of "Seismic Response of Ceiling-Piping-Partition Nonstructural Systems" session in Structural Engineering Institute's 2011 Structures Congress, Las Vegas

Associate member of ACI Committee 369, "Seismic Repair and Rehabilitation"

Reviewer of technical proposals for Oregon Transportation Research and Education Consortium (OTREC)

Reviewer for the *Journal of Structural Engineering*, ASCE

Reviewer for the *Journal of Bridge Engineering*, ASCE

Reviewer for the *Journal of Engineering Mechanics*, ASCE

Reviewer for the *Journal of Infrastructure Systems*, ASCE

Reviewer for the *Earthquake Spectra*, Earthquake Engineering Research Institute (EERI)

Reviewer for *Engineering Structures*, Elsevier

Reviewer for *Composite Structures*, Elsevier

Reviewer for the *Soil Dynamics and Earthquake Engineering*, Elsevier

Reviewer for *Structure and Infrastructure Engineering*, Taylor & Francis

Reviewer for *KSCE Journal of Civil Engineering*, Korean Society of Civil Engineers (KSCE)

Reviewer for *Materials*, MDPI AG

Reviewer for *Journal of Composites for Construction*, ASCE

Member of selection committee of Nevada Medal for Distinguished Graduate Student Paper in Bridge Engineering

Referee for Centers of Research Excellence (CoREs) Royal Society of New Zealand

Professional Membership

Member, American Society of Civil Engineering (ASCE)

Member, American Society for Engineering Education (ASEE)

Member, Council on Undergraduate Research (CUR)

Educator Member, American Institute Steel Construction (AISC)

Member, Earthquake Engineering Research Institute (EERI)

MEDIA PRESENCE AND INTERVIEWS

News Articles

[Study shows high levels of creativity, originality in adults with ADHD](#), The Michigan Daily, by Liat Weinstein (October 2018)

[UConn Researchers Say Super-Strong Concrete Could Be a Fix for Nation's Bridge Problems](#), WNPR.org, by Ryan Caron King (April 2016)

[Impulsive Ingenuity](#), Prism Magazine, American Society of Engineering Education, by Mary Lord is deputy editor of Prism.

[Research Validates Promising Bridge Repair Method](#), Civil Engineering, the Magazine of the American Society of Civil Engineers, by Jenny Jones

[S&T Fellow Tests Innovative Bridge Repair Method](#), Department of Homeland Security

Interviews

[UConn Researchers Say Super-Strong Concrete Could Be a Fix for Nation's Bridge Problems](#), WNPR.org, by Ryan Caron King (April 2016)

[UConn Professor works to Engineer ADHD Success](#), Understood.org, by Geri Coleman Tucker

GRADUATE STUDENTS

Completed PhD Students

- | | |
|---|------|
| Kevin McMullen, PhD | 2019 |
| United States Military Academy, <i>West Point, NY</i> | |
| Dissertation: Full-Scale Evaluation of a Novel Repair for Corroded Plate Girders with UHPC, https://opencommons.uconn.edu/dissertations/2130/ | |
| Alexandra Hain, PhD | 2019 |
| University of Connecticut, <i>Storrs, CT</i> | |
| Dissertation: Study of Large Scale Hybrid Concrete-Filled Fiber Reinforced Polymer Tube Columns (HCFFTs), https://opencommons.uconn.edu/dissertations/2112/ | |
| Dominic Kruszewski, PhD | 2018 |
| WSP, <i>New York, NY</i> | |
| Dissertation: Performance Evaluation of Shear Connectors Embedded in Ultra-High Performance Concrete as Part of a Bridge Repair Method, https://opencommons.uconn.edu/dissertations/1963/ | |
| Kevin Zmetra, PhD, PE | 2015 |
| Professional Service Industries Inc., <i>Washington, DC</i> | |
| Dissertation: Repair of Corrosion Damaged Steel Bridge Girder Ends by Encasement in Ultra-High Strength Concrete, http://digitalcommons.uconn.edu/dissertations/769 | |
| Masoud Mehraoufi, PhD, PE | 2015 |
| WSP Parsons Brinckerhoff, <i>Glastonbury, CT</i> | |
| Dissertation: Seismic Transverse Response of Multi-Frame Bridges, http://digitalcommons.uconn.edu/dissertations/762 | |

Alicia Echevarria, PhD, PE 2014
 HNTB Corporation, New York, NY
 Dissertation: Comparison of the Performance of RC and CFFT Bridge Piers under Multiple Hazards, <http://digitalcommons.uconn.edu/dissertations/578>

Current PhD Students

Angela Lanning 2021
 Awards/Honors: NSF GRFP Fellow 2019
 Comcast Neurodiversity Fellow 2017

Tao Zhang 2022

Maral Dorri 2023

Completed Masters Students

Amanda McBride, EIT 2016
 Thesis: Mechanical Behavior of Hybrid Glass/Steel Reinforced Epoxy Composites
http://digitalcommons.uconn.edu/gs_theses/955

Kevin Zmetra, PhD, PE 2012
 Thesis: The Effects of Bolt Pretension, In-Plane Eccentricity and Friction on the Ductility of Block Shear Connections http://digitalcommons.uconn.edu/gs_theses/345

UNDERGRADUATE STUDENT RESEARCHERS

Undergraduate Honors Thesis

Jessica Manson 2016
 Thesis: *A State of the Art Report on Concrete-Filled FRP Tube (CFFT) Structural System*

Hamza Aslam 2015
 Thesis: *Seismic Analysis of Structures with Damping Devices*

Robert Rosa 2013
 Thesis: *Creation and Evaluation of Concentrated Plasticity Models for Seismic Analysis*

Pearse McManus 2013
 Thesis: *A Structural Approach to Blast Mitigation Using a Bucking Cylinder Shield*

Undergraduate Independent Study

Advised Eighteen Undergraduate Students 2012-present