

Dong Zhao

Address: Human Ecology Bldg., Rm 201K
Michigan State University
552 W Circle Drive
East Lansing, MI 48824

Phone: (517) 432-3242
Fax: (517) 432-8108
E-mail: dzhao@msu.edu
Website: www.msu.edu/~dzhao

EDUCATION:

Ph.D.	Virginia Tech (Building construction)	2014
M.S.	Virginia Tech (Building science)	2011
M.S.	Chongqing University (Engineering management)	2007
B.Engr.	Chongqing University (Construction engineering)	2004

ACADEMIC POSITIONS:

2015 - Assistant Professor, Construction Management Program, School of Planning, Design and Construction, Michigan State University, East Lansing, MI

2015 - Adjunct Assistant Professor, Department of Civil and Environmental Engineering, Michigan State University, East Lansing, MI

2016 - Affiliated Faculty, Environmental Science and Policy Program (ESPP), Michigan State University, East Lansing, MI

2014-15 Postdoctoral Fellow, Myers-Lawson School of Construction, Virginia Tech, Blacksburg, VA

2008-14 Research/Teaching Assistant, Myers-Lawson School of Construction, Virginia Tech, Blacksburg, VA.

2007-08 Research Associate, Virtual Construction Prototyping Lab, Hong Kong Polytechnic University, Hong Kong, China.

PROFESSIONAL CERTIFICATION:

LEED Accredited Professional, #10855929, issued by the U.S. Green Building Council.

AWARDS & HONORS:

Faculty Industry Fellow, Associated General Contractors of America (AGC)	2020
TEDx Selected Speaker	2019
Exemplary Tenure Stream Evaluation Packet, MSU	2018-19
ExCEED Faculty Fellowship, American Society of Civil Engineers (ASCE)	2018
Summer Professor Scholarship, National Association of Home Builders (NAHB)	2018
Academy of Global Engagement (AGE) Fellowship, MSU	2017-18
Best Journal Article Award, ASCE Journal of Architectural Engineering	2016
New Hire Recognition, MSU CANR	2016
Postdoctoral Fellowship, Virginia Tech	2015
Outstanding Dissertation Nomination Award, Virginia Tech	2014
Kevin P. Granata Award, Virginia Tech	2014
Annual Achievement Award, Virginia Center for Housing Research	2013
Outstanding Thesis Award, Chongqing University	2007
Outstanding Graduate Student, Chongqing University	2006

PUBLICATIONS:

* denotes students or researchers as an advisee.

† denotes corresponding author.

Peer-reviewed journal papers

1. Mo, Y.*, **Zhao, D.**†, Du, J., Syal, M., Aziz, A., and H. Li. (2020). "Automated staff assignment for building maintenance using natural language processing." *Automation in Construction*, 113, 103150. <https://doi.org/10.1016/j.autcon.2020.103150>
2. Du, J., **Zhao, D.**, Singh, N., and Issa, R. (2020). "Impact assessment of BIM implementation in project communication networks: empirical evidence from email log." *Journal of Computing in Civil Engineering*. *Accepted*.
3. Ma, R., Ren, B., **Zhao, D.** Chen, J., and Lu, Y. (2020). "Modeling urban energy dynamics under clustered urban heat island effect with local-weather extended distributed adjacency blocks." *Sustainable Cities and Society*, 56, 102099. <https://doi.org/10.1016/j.scs.2020.102099>
4. Chen, J. and **Zhao, D.** (2020). "Understanding the innovation diffusion and adaption strategies in megaproject networks through a fuzzy system dynamic model." *Frontiers of Engineering Management*. <https://doi.org/10.1007/s42524-019-0082-8>
5. **Zhao, D.**†, Thakur, N.*, and Chen, J. (2019). "Optimal design of energy storage system to buffer charging infrastructure in smart cities." *Journal of Management in Engineering*, 36(2), 04019048. [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000742](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000742)
6. Jiang, Y.*, **Zhao, D.**†, Wang, D., and Xing, Y. (2019). "Sustainable performance of buildings through modular prefabrication in the construction phase: a comparative study." *Sustainability*, 11 (20), 5658. <https://doi.org/10.3390/su11205658>
7. **Zhao, D.**†, Miotto, A.*, Syal, M., and Chen, J. (2019). "Framework for benchmarking green building movement: a case of Brazil." *Sustainable Cities and Society*, 48, 101545. <https://doi.org/10.1016/j.scs.2019.101545>
8. Du, J., **Zhao, D.**, and Zhang, O. (2019). "Impacts of human communication network topology on group optimism bias in capital project planning: a human-subject experiment." *Construction Management and Economics*, 37(1), 44-60. <http://doi.org/10.1080/01446193.2018.1508848>
9. McCoy, A.P., Sanderford, A., and **Zhao, D.** (2019). "Demonstrating a new measure & index of U.S. homebuilder confidence." *Journal of Housing Research*, 27(2), 108-128. <https://www.aresjournals.org/doi/abs/10.5555/1052-7001.27.2.107>
10. **Zhao, D.**†, McCoy, A.P., Agee, P., Mo, Y.*, Reichard, G., and Paige, F. (2018). "Time effects of green buildings on energy use for low-income households: a longitudinal study in the United States." *Sustainable Cities and Society*. 40, 559-568. <https://doi.org/10.1016/j.scs.2018.05.011>.
11. Tatiya, A.*, **Zhao, D.**†, Syal, M., Berghorn, H. G., and LaMore, R. (2018). "Cost prediction model for building deconstruction in urban areas." *Journal of Cleaner Production*, 195, 1572-1580. <http://doi.org/10.1016/j.jclepro.2017.08.084>
12. Jiang, Y.*, **Zhao, D.**†, Sanderford, A., and Du, J. (2018). "Effects of bank lending on urban housing prices for sustainable development: a panel analysis of Chinese cities." *Sustainability*, 10(3), 642. <http://doi.org/10.3390/su10030642>
13. Du, J., Shi, Y., Zou, Z., and **Zhao, D.** (2018). "CoVR: cloud-based multiuser virtual reality headset system for project communication of remote users." *Journal of Construction Engineering and Management*, 144(2). [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001426](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001426)

14. McCoy, A.P., **Zhao, D.**[†], Ladipo, T., Agee, P., and Mo, Y.* (2018). "Comparison of green home energy performance between simulation and observation: a case of Virginia, U.S." *Journal of Green Building*, 13(3), 70-88. <https://doi.org/10.3992/1943-4618.13.3.70>
15. Du, J., Zou, Z., Shi, Y., and **Zhao, D.** (2018). "Zero latency: real-time synchronization of BIM data in virtual reality for collaborative decision-making." *Automation in Construction*, 85, 51-64. <http://doi.org/10.1016/j.autcon.2017.10.009>
16. Wang, D., Chen, J., **Zhao, D.**, Dai, F., Zheng, C., and Wu, X. (2017). "Monitoring workers' attention and vigilance in construction activities through a wireless and wearable electroencephalography system." *Automation of Construction*, 82, 122-137. <http://doi.org/10.1016/j.autcon.2017.02.001>.
17. Feng, Y., Wu, P., Ye, G., and **Zhao, D.** (2017). "Risk compensation behaviors on construction sites: demographic and psychological determinants." *Journal of Management in Engineering*, 33(4), 04017008. [http://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000520](http://doi.org/10.1061/(ASCE)ME.1943-5479.0000520).
18. **Zhao, D.**[†], McCoy, A., Du, J., Agee, P., and Lu, Y. (2017). "Interaction effects of building technology and resident behavior on energy consumption in residential buildings." *Energy and Buildings*, 134, 223-233. <http://doi.org/10.1016/j.enbuild.2016.10.049>
19. Liu, G, Li, K., **Zhao, D.**, and Mao, C. (2017). "Business model innovation and its drivers in the Chinese construction industry during the shift of modular prefabrication." *Journal of Management in Engineering*, 33(3), 04016051. [http://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000501](http://doi.org/10.1061/(ASCE)ME.1943-5479.0000501).
20. **Zhao, D.**[†], McCoy, A. P., Kleiner, B. M., and Feng, Y. (2016). "Integrating safety culture into OSH risk mitigation: a pilot study on the electrical safety." *Journal of Civil Engineering and Management*, 22(6), 800-807. <http://doi.org/10.3846/13923730.2014.914099>
21. Du, J., Kim B., and **Zhao, D.** (2016). "Cost performance as a stochastic process: EAC projection by Markov chain simulation." *Journal of Construction Engineering and Management*, 142(6), 04016009. [http://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001115](http://doi.org/10.1061/(ASCE)CO.1943-7862.0001115)
22. Du, J., El-Gafy, M., and **Zhao, D.** (2016). "Optimization of change order management process with object-oriented discrete event simulation: case study." *Journal of Construction Engineering and Management*, 142(4): 05015018. [http://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001092](http://doi.org/10.1061/(ASCE)CO.1943-7862.0001092)
23. **Zhao, D.**[†], McCoy, A. P., and Du, J. (2016). "An empirical study on the energy consumption in residential homes after adopting green building standards." *Procedia Engineering*, 145, 766-773. <http://doi.org/10.1016/j.proeng.2016.04.100>
24. Shi, Y., Du, J., Lavy, S., and **Zhao, D.** (2016). "A multiuser shared virtual environment for facility management." *Procedia Engineering*, 145, 120-127. <http://doi.org/10.1016/j.proeng.2016.04.029>
25. **Zhao, D.**[†], McCoy, A. P., Kleiner, B. M., Du, J., and Smith-Jackson, T. L. (2016). "Decision-making chains in electrical safety for construction workers." *Journal of Construction Engineering and Management*. 142 (1), 04015055. [http://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001037](http://doi.org/10.1061/(ASCE)CO.1943-7862.0001037)
26. **Zhao, D.**[†], McCoy, A. P., Kleiner, B. M., Smith-Jackson, T. L., and Liu, G. (2016). "Sociotechnical systems of fatal electrical injuries in the construction industry." *Journal of Construction Engineering and Management*, 142 (1), 04015056. [http://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001036](http://doi.org/10.1061/(ASCE)CO.1943-7862.0001036)
27. **Zhao, D.**[†], McCoy, A. P., Kleiner, B. M., Mills, T., and Lingard, H. (2016). "Stakeholder perceptions of risk in construction." *Safety Science*, 82, 111-119. <http://doi.org/10.1016/j.ssci.2015.09.002>
28. **Zhao, D.**[†], McCoy, A. P., and Smoke, J. (2015). "Resilient built environment: new framework for assessing residential construction market." *Journal of Architectural*

- Engineering*, 27(4), B4015004. [http://doi.org/10.1061/\(ASCE\)AE.1943-5568.0000177](http://doi.org/10.1061/(ASCE)AE.1943-5568.0000177)
(BEST JOURNAL PAPER AWARD)
29. **Zhao, D.** †, McCoy, A. P., Kleiner, B. M., and Smith-Jackson, T. (2015). "Control measures of electrical hazards: an analysis of construction industry." *Safety Science*, 77, 143-151. <http://doi.org/10.1016/j.ssci.2015.04.001>
 30. **Zhao, D.** †, and Lucas, J. (2015). "Virtual reality simulation for construction safety promotion." *International Journal of Injury Control and Safety Promotion*. 22(1), 57-67. <http://doi.org/10.1080/17457300.2013.861853>
 31. **Zhao, D.** †, McCoy, A., Bulbul, T., Fiori, C., and Nikkhoo, P. (2015). "Building collaborative construction skills through BIM-integrated learning environment." *International Journal of Construction Education and Research*, 11(2), 97-120. <http://doi.org/10.1080/15578771.2014.986251>
 32. **Zhao, D.** †, Thabet, W., McCoy, A. P., and Kleiner, B. M. (2014). "Electrical deaths in the U.S. construction: an analysis of fatality investigations." *International Journal of Injury Control and Safety Promotion*, 21(3), 278-288. <http://doi.org/10.1080/17457300.2013.824002>
 33. Ren, H., and **Zhao, D.** † (2006). "Innovation of construction projects management based on the five-dimension modeling." *Journal of Chongqing University*, 29(9), 152-155.
 34. Huang, Z., and **Zhao, D.** † (2006). "An empirical study and forecast of the cyclic fluctuation of real estate investment in China." *Journal of Civil, Architectural and Environmental Engineering*, 28(4), 110-113.
 35. **Zhao, D.** †, Bi, W., and Liu, L. (2005). "A study on the investment of real estate development under the Macro-regulation in China." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 128-130.
 36. Wang, H., and **Zhao, D.** † (2005). "A study of the effect of construction project design quality on the overall cost management and control." *Journal of Civil, Architectural and Environmental Engineering*, 27(s), 109-111.
 37. Ren, H. and **Zhao, D.** † (2005). "Thinking on China western area real estate industry's development." *Special Zone Economy*. 2005(2): 112-113 [in Chinese].
 38. Huang, Z and **Zhao, D.** † (2004). "The analysis of the relationship between cyclic fluctuation of real estate industry and Macro-economy." *Chuanshan Journal*, 262-263 [in Chinese].

Peer-reviewed conference papers

1. Mo, Y.*, **Zhao, D.**, Syal, M. (2019). "Effective features to predict residential energy consumption using machine learning." *Proc. the ASCE International Conference on Computing in Civil Engineering*, Atlanta, GA, Jun. 17-18, 2019. [DOI:10.1061/9780784482445.036](https://doi.org/10.1061/9780784482445.036)
2. **Zhao, D.**, Simons, R., Duva, M.* (2019). "Measuring students' class-level sense of belonging: A social-network-based approach." *Proc. the 154th American Society of Engineering Education Annual Conference*, Tampa, FL, Jun. 16-19, 2019. <https://www.asee.org/public/conferences/140/papers/27690/download>
3. Zhao, D., Thakur, N.*, and Chen, J. (2019). "Optimum network of battery storage to support electric vehicle charging infrastructure in smart cities." *Proceedings of the 52nd Hawaii International Conference on System Sciences HICSS*, Wailea, HI, Jan. 2019 <https://scholarspace.manoa.hawaii.edu/handle/10125/59635>
4. Agee, P., McCoy, A., Reichard, G., Kleiner, B., Zhao, D., & Paige, F. (2019). "Human factors of high performance multifamily housing." *Proc. the 2019 American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Winter Conference*. Atlanta, GA, 12-19 January.

5. **Zhao, D.**, McCoy, A.P., Agee, P., Mo, Y., Paige, F. and Reichard, G. (2018). "Energy consumption, capital costs and paybacks of green buildings for low-income households in the United States: A longitudinal study." *Proc. the 8th International Symposium on Energy*; Aberdeen, Scotland, United Kingdom, August 6-9, 2018.
6. **Zhao, D.**, Valdes-Vasquez, R., Simmons, R., and Parrish, K. (2018). "Assessing the graduate education in research methodology on sustainability topics." *Proc. the 2018 Construction Research Congress (CRC)*, New Orleans, LA.
<https://doi.org/10.1061/9780784481301.011>
7. Mo, Y. *, **Zhao, D.**, Du, J., Liu, W., and Dhara, A.* (2018). "Data-driven approach to scenario determination for VR-based construction safety training." *Proc. the 2018 Construction Research Congress (CRC)*, New Orleans, LA.
<https://doi.org/10.1061/9780784481288.012>
8. Shi, Y., Du, J., Tang, P., and **Zhao, D.** (2018). "Characterizing the role of communications in teams carrying out building inspection." *Proc. the 2018 Construction Research Congress (CRC)*, New Orleans, LA,
<https://doi.org/10.1061/9780784481271.054>
9. Paige, F., Philip Agee, P., **Zhao D.**, McCoy, A. (2018). "The longitudinal impact of energy education on affordable energy efficient multifamily senior housing." *Proc. the 4th Residential Building Design and Construction Conference (RBDCC)*, State College, PA.
10. Mo, Y.* , **Zhao, D.**, Syal, M., and Aziz, A. (2017). "Construction work plan prediction for facility management using text mining." *Computing in Civil Engineering 2017*,
<https://doi.org/10.1061/9780784480847.012>
11. Mo, Y.* , **Zhao, D.**, McCoy, A., Du, J., and Agee, P. (2017). "Latent relationship between construction cost takeoffs and energy efficiency for multifamily green buildings." *Computing in Civil Engineering*, 273-280. <https://doi.org/10.1061/9780784480847.034>
12. Zou, Z., Du, J., Shi, Y., and **Zhao, D.** (2017). "Simultaneous data exchange between BIM and VR for collaborative decision-making." *Computing in Civil Engineering 2017*,
<https://doi.org/10.1061/9780784480830.001>
13. **Zhao, D.**, McCoy, A. P., Agee, P., and Ladipo, T. (2016). "Impacts of housing technology and behavior on energy efficiency for affordable rental housing." *Proc. the 41th IAHS World Congress – Sustainability and Innovation for the Future*, Algarve, Portugal.
14. **Zhao, D.**, McCoy, A. P., and Kleiner, B. M. (2016). "Do designers and builders share similar understanding of occupational safety and health risks?" *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico, pp. 2821-2830.
<http://doi.org/10.1061/9780784479827.281>
15. Valdes-Vasquez, R., Simmons, D.R., **Zhao, D.**, and Parrish, K. (2016). "Lessons learned from the Michael Horman symposium: developing a network of researchers and mentorship for sustainability topics." *Proc., the 2016 Construction Research Congress (CRC)*, San Juan, Puerto Rico. <http://doi.org/10.1061/9780784479827.129>
16. **Zhao, D.**, Sanderford, A. R., and McCoy, A. P. (2016). "Homebuilder's confidence: a new index of land, labor, capital, and opportunities." *Proc., the 2016 American Real Estate Society Annual Conference (ARES)*, Denver, CO.
17. **Zhao, D.**, Feng, Y., Ye, Y., and Suh, M. J. (2014). "Integrating safety culture into OSH risk mitigation via information technologies." *Lecture Notes in Electrical Engineering*, 241 LNEE, 335-344. http://doi.org/10.1007/978-3-642-40078-0_29
18. Keefe, M., McCoy, A., Sanderford, A., and **Zhao, D.** (2014). "Adoption patterns of energy efficient housing technologies 2000-2010: Builders as innovators." *Proc., the 2nd Residential Building Design and Construction Conference (RBDCC)*, Bethlehem, PA.
19. **Zhao, D.** (2014). "BIM-integrated group learning in construction education." *Proc., the 6th Conference on Higher Education Pedagogy (CHEP)*, Blacksburg, VA.

20. Feng, Y., **Zhao, D.**, Wu, P., and Xia, B. (2013). "Risk compensation and safety interventions in construction site." *Proc., the 38th Australasian Universities Building Education Association Conference (AUBEA)*, Auckland, New Zealand.
21. **Zhao, D.** (2013). "Merging habitus into safety risk management: A case from the U.S. construction industry." *Proc., the 7th IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bangkok, Thailand, 507 - 511. <http://doi.org/10.1109/IEEM.2013.6962463>
22. **Zhao, D.**, Sands, K., Wang, Z., and Ye, Y. (2013). "Building Information Modeling-enhanced team-based learning in construction education." *Proc., the 12th International Conference on Information Technology Based Higher Education and Training (ITHET)*, Antalya, Turkey, 1-5. <http://doi.org/10.1109/ITHET.2013.6670999>
23. **Zhao, D.**, Thabet, W., McCoy, A., and Kleiner, B. (2012). "Managing electrocution hazards in the US construction industry using VR simulation and cloud technology." *Proc., the 2012 European Conference of Product and Process Modeling (ECPPM)*, Reykjavik, Iceland, 759-764. <http://doi.org/10.1201/b12516-120>
24. **Zhao, D.**, and Ye, Y. (2012). "Using virtual environments simulation to improve construction safety: An application of 3D online-game based training." *Lecture Notes in Electrical Engineering*, 172 LNEE, 269-277. http://doi.org/10.1007/978-3-642-31006-5_33
25. **Zhao, D.**, Lucas, J., and Thabet, W. (2009). "Using virtual environments to support electrical safety awareness in construction." *Proc., the 2009 Winter Simulation Conference (WSC)*, Austin, TX, 2679-2690. <http://doi.org/10.1109/WSC.2009.5429258>
26. **Zhao, D.**, and Ren, H., (2006). "The instauration of China construction labor market using international experiences." *Proc. Reform and Innovation of China Construction Labor Policy*, Beijing, China, Construction Industry Press, 10-14.

Book

1. Sanderford, A. R., McCoy A. P., **Zhao, D.**, and Koebel, T. (2016). *Case-specific Studies on Housing Innovation*. Momentum Press, New York, NY. ISBN-13: 978-1-60650-566-3

Book Chapters

1. McCoy, A., **Zhao, D.**, Mo, Y., Agee, P., Paige, F. (2019). "Latent Relationships between Construction Cost and Energy Efficiency in Multifamily Green Buildings," In David Ting & Rupp Carriveau (Ed.), *Energy Generation and Efficiency Technologies for Green Residential Buildings*. The Institution of Engineering and Technology (IET).
2. **Zhao, D.** (2014). "Mobile virtual reality: An approach for safety management," In Cecilia S. Lanyi (Ed.), *The Thousand Faces of Virtual Reality*. InTech Press. ISBN 978-953-51-1733-9.
3. **Zhao, D.**, and Ren, H. (2008). "Constructing security systems for public housing in rural and urban areas," In *Blue Book of Chongqing Municipality*. Chongqing: Chongqing Press Group. ISBN 978-7-5366-9419-4, pp91-99

Research Reports/Abstracts/Others

1. **Zhao, D.**, and Duva, M., (2018). Smart cities and infrastructure for Michigan. A report to EDA University Center for Regional Economic Innovation, July, 2018.
2. McCoy, A. **Zhao, D.**, Agee, P., Mo, Y., & Paige, F. (2017). Educating for Energy Efficiency: Longitudinal Evidence of Sustained Energy Savings in Virginia's Affordable

- Housing. A Report by the Virginia Center for Housing Research (VCHR) at Virginia Tech for Housing Virginia. October 6, 2017.
3. Kleiner, B., and **Zhao, D.** (2017). *Preventing Fatalities in the Construction Industry*. Report to the Associated General Contractors of America (AGC). <https://www.agc.org/industry-priorities/safety-health/construction-fatalities-study-0>
 4. McCoy, A., **Zhao, D.**, and et al. (2015). Report: the Impact of Energy Efficient Design and Construction on LIHTC Housing in Virginia. Virginia Center for Housing Research, Virginia Tech, Blacksburg, VA.
 5. **Zhao, D.**, Kleiner, B., McCoy, A., and Mills, T. (2014). Research on Safety in Construction Supply Chain." *The 2014 College of Architecture and Urban Studies Research Symposium*, Virginia Tech, Blacksburg, VA.
 6. Kleiner, B., McCoy, A., Chen, A., and **Zhao, D.** (2014). "A 'Whole Industry' Approach to Construction Safety through International Collaboration and Benchmarking." *The 2014 Deans' Forum on Global Engagement*, Virginia Tech, Blacksburg, VA
 7. Kleiner, B., **Zhao, D.**, and et al. (2014). "From Finger-Pointing to Lifesaving: A Supply Chain Approach to Construction OSH." IC-SAFE, Virginia Tech, VA.
 8. McCoy, A., Jones, M., **Zhao, D.**, and et al. (2014). *Consolidated Plan for the Fairfax County, Virginia*. Virginia Center for Housing Research, Virginia Tech, VA.
 9. Ren, H, Liu, G., **Zhao, D.**, and et al (2007). *Design and Development of Public Housing in Chongqing Municipality: An Investigation Report*. School of Construction Management and Real Estate, Chongqing University, China.

SELECTED GRANTS:

Awarded – External competitive: (Over 1.2M)

1. Michigan Department of Transportation (MDOT): Training tools for effective advancement of digital technologies for construction field operations, 2019-2021, \$212,898, Co-PI, PI: El-Gafy,
2. National Science Foundation (NSF): Understanding Impacts of Social Network Interventions on Engineering Project Outcomes, 2018-2021, \$439,560. PI: S Mollaoglu. Co-Lead PI with PI: S Mollaoglu, Co-PI: K, Frank.
3. U.S. Economic Development Administration (EDA)'s Center for Community and Economic Development: Smart cities and transportation in Michigan, PI, 2018, \$8,000.
4. Michigan Department of Transportation (MDOT): Research on the operational costs and benefits of speed feedback signs, 2018-2020, \$200,706. PI: T Gates, Co-PIs: M Ghamami, D Zhao, A Zockaie
5. Housing Virginia: Effects of energy education on the residential energy efficiency, PI, 2017, \$3,000
6. Federal Highway Administration (FHWA): 2016 Work Zone Safety Training Grant, 2016-21, \$2M, MSU: \$233,000. PI: T. Gates, Co-PIs: M Ghamami, D Zhao (25%), A Zockaie
7. Virginia Housing Development Authority (VHDA): Data mining on economic impacts and planning strategies for housing development, 2016-18: \$615,138. MSU: \$10,000. MSU PI: D. Zhao.
8. National Science Foundation (NSF): Collaborative Research: Tool of Engagement Measurement to Propel Academic Success of Students, 2016-19, \$891.857. Co-PI, Lead PI: S Brown

9. Associated General Contractors of America (AGC): Data Mining, Analysis, and Visualization for Construction Fatality and Prevention, 2015-16, \$22,406. MSU: \$13,458, MSU PI: D Zhao
10. Better Housing Coalition: Construction Economics, Strategies and Planning, 2015-16, \$10,144. MSU: \$5,000. MSU PI: D Zhao
11. Housing Virginia: Resident Energy Education as the Next Step for Affordable Housing, 2016-18, \$55,141. MSU: \$10,000, MSU PI: D Zhao
12. Housing Virginia: Housing Virginia: Housing Affordability Sourcebook and Playbook Development, 2016-17, \$46,017. MSU: \$3,000, MSU PI: D Zhao
13. Virginia Tech: Sociotechnical Systems of Workplace Injuries for Residential Construction, 2014-15, \$3,000, PI: D Zhao

Awarded – Internal competitive:

14. MSU SPDC: Development of an Assistive App to Improve Mobility for People with Hearing, Vision, and Developmental Disabilities, 2019-2020, \$15,000. PI: Qu, Co-PI: Cui, Zhao
15. MSU CANR: Professional Development Microgrant, PI, \$2,820
16. MSU TLE: Enhanced Teaching and Learning Environment for Building Information Modeling (BIM) Technology and Practice, 2017-2018, PI, \$3,509.
17. MSU CANR Professional Development Microgrant, 2016-2017, PI, \$3,000.

PRESENTATIONS:

Invited Seminars & Presentations

1. “Smart Cities and Infrastructure for Michigan.” Innovate Michigan! Summit, East Lansing, MI, September 2018.
2. “Will green buildings improve housing affordability for sustainable cities?” MSU Urban Study program, East Lansing, MI, September 2018.
3. “Intelligent construction for automation and sustainability,” Robert Bosch LLC, Plymouth, MI, August 2018.
4. “Occupant behaviors in smart buildings for housing affordability”, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, July 2018.
5. “Human-technology interactions in smart buildings and cities,” Eindhoven University of Technology, Eindhoven, Netherlands, July 2018.
6. “Energy efficiency in residential buildings beyond engineering,” University of Michigan, Ann Arbor, MI, May 2018.
7. “Occupant behavior simulation and interventions for residential building energy efficiency,” National Lawrence Berkeley Lab, Berkeley, CA, April, 2018.
8. “Time effects of green building technologies on public housing.” Chongqing University, Chongqing, China, Nov. 2017
9. “Voice behavior in construction management.” Tianjin University, China, Nov. 2017
10. “Construction Industry and Construction Project Management.” Co-presented with M. Syal, BOSCH North America VP at East Lansing, MI, 2017.
11. “Be a Spartan: Perspectives of research in built environment.” Presented at Michigan State University, School of Planning, Design and Construction, East Lansing, MI, 2015.
12. “The game changer: BIM’s worldwide implementation.” Presented at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015, with A McCoy.

13. "Toward the future of housing: leveraging technology and efficiency." Co-presented with A. McCoy at Chongqing University, Faculty of Built Environment, Chongqing, China, 2015.
14. "Uncertainty management and risk mitigation in building design and construction." Presented at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.
15. "Market behavior effects on innovative green building technologies for US residential firms." Co-presented with A. McCoy at the Southwest Jiao Tong University, School of Economics & Management, Chengdu, China, 2015.
16. "Control measures of electrical hazards for construction workers." Presented at Virginia Tech, CIB Chapter, Blacksburg, VA, 2015.

Presentations

17. "Occupant behavior prediction model based on energy consumption," 5th International Symposium on Occupant Behavior (OB-19), San Antonio, TX, March 13, 2019.
18. "Optimum design of charging infrastructure network," HICSS Conference, Wailea, HI, January, 2019
19. "Graduate education in research methodology on sustainability." Co-presented with Valdes-Vasquez at the Construction Research Congress (CRC), New Orleans, LA, April 04, 2018
20. "Data-driven approach to determine VR-based safety training scenario." Co-presented with Mo, Y. at the Construction Research Congress (CRC), New Orleans, LA, April 03, 2018
21. "Toward the future of housing efficiency: leveraging technology, behavior, education and cost." Co-presented with A. McCoy, Keynote at International Congress on Engineering and Sustainability in the XXI century – INCREaSE 2017, Faro, Portugal, October 11-13, 2017.
22. "Sustaining Energy Efficiency: Longitudinal Evidence of Virginia's Low-Income Housing Tax Credit Properties." Co-presented with Agee, P., McCoy, A., Paige, F., and Mo, Y. at Virginia Housing Alliance 5th Annual Housing Credit Conference, Richmond, VA, September 25-26, 2017.
23. "Latent Relationship between Construction Cost and Energy Efficiency: An Exploratory Study." Presented at International Workshop of Computing in Civil Engineering (IWCCE), Seattle, WA, June 2017.
24. "Construction Work Plan Prediction for Facility Management Using Text Mining." Co-presented with Mo, Y., at International Workshop of Computing in Civil Engineering (IWCCE), Seattle, WA, June 2017.
25. "Impacts of Housing Technology and Behavior on Energy Efficiency for Housing in Virginia." Co-presented with A. McCoy & P. Agee at the 41st International Association of Housing Science (IAHS) World Congress, Albufeira, Portugal, 2016, with McCoy, A. and Agee, P.
26. "Do Designers and Builders Share Similar Understanding of OSH Risks?" Presented at Construction Research Congress, San Juan, PR, 2016.
27. "Energy Consumption in Residential Buildings after Adopting Green Building Standards." Present at International Conference on Sustainable Design, Engineering, and Construction, Tempe, AZ, 2016
28. "Construction safety through international collaboration and benchmarking." Co-presented with B. Kleiner at Virginia Tech Deans' Forum on Global Engagement, Blacksburg, VA, 2014

29. "Research on safety in construction supply chain." Co-presented with B. Kleiner at Virginia Tech, CAUS Studies Research Symposium, Blacksburg, VA, 2014
30. "Integrating safety culture into OSH risk Mitigation via information technologies." Presented at Drexel University, Philadelphia, PA, 2014.
31. "Team-based Learning in Building Information Modeling Education." Presented at the International Conference on Information Technology Based Higher Education and Training, Antalya, Turkey, 2012
32. "Merging Habitus into Safety Risk Management." Presented at IEEE international Conference on Industrial Engineering and Engineering Management, Bangkok, Thailand, 2012
33. "Managing Electrical Hazards through VR and Cloud Technology in the US Construction." Presented at the European Conference of Product and Process Modeling in the Building Industry, Reykjavik, Iceland, 2012
34. "Using Virtual Environments to Support Electrical Safety Awareness in Construction." Co-presented with J. Lucas at Winter Simulation Conference, Austin, TX, 2009

COURSES TEACHING:

Michigan State University

CMP828: Advanced Virtual Design and Construction (Newly developed, Graduate level)
CMP891: Advanced Topic in Construction Management – BIM (Graduate level)
CMP328: Construction Presentation Graphics and BIM (Undergraduate level)
CMP222: Statics & Strengths Materials (Undergraduate level)
PDC491: Special Topic in Planning, Design and Construction – BIM (Undergraduate level)

Virginia Tech

CNST 5124: Integrated Construction Studio (Graduate level)
BC 4064: Construction Practice Lab (Undergraduate level)
BC 3064: Building Systems Technology Lab (Undergraduate level)
BC 2064: Construction Principles Lab (Undergraduate level)
BC 2114: IT in Design & Construction (Undergraduate level)
ISE 4994: Undergraduate Research - Data Mining for Improved Safety and Health (Undergraduate level)

STUDENTS ADVISING:

Graduate Students as Chair

Yunjeong Mo, PhD CM '18, MSU (Now tenure-track faculty at University of North Florida)
Meltem Duva, PhD CM, In-progress, MSU (Co-Chair with S Mollaoglu)
Nishhal Pandey, MS CM (Thesis/ Plan A), In-progress, MSU (Co-Chair with S Mollaoglu)
Zhiting Chen, MS CM (Thesis/Plan A), In-progress, MSU (Chair)
Qichao Wang, MS CM, In-progress, MSU
Navwant Thakur, MS CM (Thesis/ Plan A) '17, MSU.
Sahil Navlani, MS CM, '17, MSU.

Graduate Student Committee

Nusayba Megat Johari, PhD CEE, In-progress, MSU
Hadis Nouri, PhD CEE, In-progress, MSU
Steven York Stapleton, PhD CEE, In-progress, MSU
Faizan Shafique, PhD CM, In-progress, MSU.
Zach Hansmann, PhD CM, '19, MSU.
Nitesh Dubey, MS CM (Thesis/ Plan A), In-progress, MSU
Reynolds, Lukas, MS CM, '19, MSU.
Harshal Shah, MS CM, '17, MSU.
Pranathi Ramaswamy, MS CM '17, MSU.
Harshal Shah, MS CM '17, MSU.
Ana Beatriz Miotto, MS CM '16, MSU.

Undergraduate Students

Jack McClear, CM 2023 (NSF-funded Research Experiences for Undergraduates, advisor)
Katie Cross, CM 2022 (NSF-funded Research Experiences for Undergraduates, advisor)
Jackeline Benitez, California State University, 2019 (Summer Research Opportunities Program- SROP student, co-advisor)
Patty, Girardot, CM 2021 (First-Place Award for MSU Undergraduate Research, advisor)
Carolyn Whiting, CM 2020 (First-Place Award for MSU Undergraduate Research, advisor)
Zhiting Chen, CM 2019 (Recipient of NAHB Student Scholarship, advisor)
Yusuf Njoroge, CM 2017

Visiting Researchers

Dr. Wang L., Xi'an University of Architecture and Technology, China, 2017-18
Dr. Jiang, Y., Shandong Jianzhu University, China, 2016-2017

PROFESSIONAL DEVELOPMENT:

1. *ACCE Selected Teaching Workshop for Career Development*, by the American Council for Construction Education (ACCE), Jacksonville, FL, 02/19/2020- 02/21/2020
2. *Accelerate your Grading: Software Solutions for Online Grading*, by MSU STEM Teaching Essentials, 12/11/2019
3. *Strategies to Promote Effective Student Teams*, by MSU STEM Teaching Essentials, 09/11/2019
4. *Normalizing Struggle: Supporting Students through Academic Challenges In and Out of the Classroom*, by MSU STEM Teaching Essentials, 10/09/2019
5. *First Day of Class: Success on Day 1, Success Throughout*, by MSU STEM Teaching Essentials, 08/21/2019
6. *ASCE ExCEEd Teaching Workshop*, hosted by ASCE, Omaha, NE, 06/03-06/08/2018.
7. *Communicating Beyond Journals and Peers: An Introduction to Public Communication*, hosted by MSU Com Arts & Sci., 02/08/2018.
8. *Rooms for Engaged and Active Learning (REAL) Academy*, hosted by MSU. 11/13/2017
9. *Workshop: Early Career Awards*, hosted by MSU OVPGRS, 04/27/2017.
10. *2017 Academy for Global Engagement*, hosted by MSU, 04/13/2017.
11. *Michael Horman Sustainability Symposium*, hosted by University of Pittsburgh and NSF, 04/09/2017

12. *Grants Panel with NSF and NIH Program Directors*, hosted by MSU Diversity Research Network, 03/27/2017.
13. *Career Success: Strategies for Working with Graduate Students and Postdocs at MSU*, hosted by MSU Graduate School and the Academic Advancement Network, 01/27/2017.
14. *Anatomy of a Compelling NSF Grant Workshops*, by Dr. Heidi Smith-Parker, hosted by MSU OVPGRS, 10/6, 10/27, 11/10, 12/1, 2016.
15. *Iceman's Run: NIH Grant Writing Workshop Series*, by Dr. Tom Hollon, hosted by MSU OVPGRS, 09/22, 10/6, 10/10-14, 10/20, 10/27, 11/3, 11/14-18, 11/17, 11/21, 12/1, 2016.
16. *Syllabus Design and Regulations to Protect Student Information Workshop*, by S. Burton, K. Blair-Chambers, P. Stewart, hosted by MSU's AAN, August 26, 2016
17. *ACCE Annual Meeting and Workshop*, hosted by ACCE, Atlanta, GA, July 20-22, 2016.
18. *CAREER Proposal Writing Webinar*, hosted by NSF, Washington DC, May 26, 2016.
19. *CBET CAREER Proposal Writing Webinar*, hosted by NSF, Washington DC, April 27, 2016.
20. *NIH Funding for Non-Medical Research Workshop*, by Dr. Siddharth Chandra, hosted by MSU's VPRGS, East Lansing, MI, March 17, 2016.
21. *Survive and Thrive in the MSU Tenure System Workshop*, by Drs. Theodore Curry, Stephen Hsu, and June Youat, East Lansing, MI, February 24, 2016
22. *Lessons Learned in Winning NIH Grants – NIH Panel Discussion*, by Dr. Tom Hollon, hosted by MSU's VPRGS, East Lansing, MI, February 11, 2016
23. *The Art of Funding: Transforming Your NSF Research Proposal Into Funded Science–NSF Panel Discussion*, by Ms. Heidi Parker, hosted by MSU's VPRGS, East Lansing, MI, February 11, 2016
24. *NSF Broad Impacts for Investigators Workshop*, hosted by MSU's Outreach and Engagement, East Lansing, MI, February 4, 2016.
25. *CRISP Proposal Writing Webinar*, by Kevin Webster, NSF officer, Washington DC, January 29, 2016
26. *Write Winning Grant Proposals Workshop*, by Dr. John D. Robertson, hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, January 7, 2016.
27. *Budget-Building for Grant Proposals Workshop*, by Pat Hampton, hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, November 19, 2015.
28. *Interdisciplinary Team Building Initiative Presentations*, MSU's Environmental Science and Policy Program, East Lansing, MI, November 19, 2015.
29. *Internal and Foundation Grants*, by Tim Wuchter, hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, October 8, 2015
30. *NIH Grant Writing Training and Support*, by Dr. Thomas Hollon, hosted by MSU's Office of the Vice-President for Research and Graduate Studies, East Lansing, MI, October 6, 2015.
31. *Building Bridges with Industry: Diversification of the Research Portfolio*, by Dr. Srinath Ekkad, hosted Virginia Tech's Office of the Vice President for Research, May 08, 2015.
32. *Finding Funding Workshop*, by Vicky Ratcliffe, hosted by Virginia Tech's Office of the Vice President for Research, May 04, 2015.
33. *Successful Grant Writing Workshop*, by Nancy Dudek, hosted by Virginia Tech's Office of the Vice President for Research, April 17, 2015
34. *Data Visualization Workshop: Presenting Data Effectively*, by Dr. Stephanie Evergreen, hosted by Virginia Tech's Office of Assessment & Evaluation, March 20, 2015.
35. *Entering Mentoring Workshop*, by Dr. H.G. Adams, hosted by Virginia Tech's Division of Undergraduate Education, March 6, 2015

36. *Building the NIH Grant Workshop*, by Dr. Janet Webster, hosted by Virginia Tech's Office of VP for Research, February 25, 2015
37. *Building the NSF Grant Workshop*, by Beth Tranter, hosted by Virginia Tech's Office of VP for Research, April 20, 2014.

ACADEMIC SERVICES:

National Committee

Academic committee member, Construction Industry Institute (CII), 2015-
Committee member, ASCE Visualization, Info. Modeling, & Simulation (VIMS), 2017-
Committee member, ASCE Data Analytics & Sensing (DAS), 2017-
Committee member, Construction Research Council, 2016-
Grant reviewer, Hong Kong Environmental Protection Department, 2017,18.
Panelist, National Science Foundation (NSF), 2016, 17, 18, 19

Conference Committee

Scientific committee member, ASCE CRC, 2018
Scientific committee member, CIB W78, CONVR, IGLC, 2017
Scientific committee member, ASCE IWCCE, 2017, 2019 (Session chair),
Scientific committee member, ASCE ICSDEC, 2016
Scientific committee member, IEEE IEEM, 2015
Organizing committee member, CIB W78, 2010

Editorship

Review Editor, *Frontiers in Built Environment (Construction management)*
Academic Editor, *Advances in Civil Engineering*

Journal Reviewer

Accident Analysis and Prevention – Elsevier; Automation in Construction – Elsevier; Canadian Journal of Civil Engineering – NRC; Computer-Aided Civil and Infrastructure Engineering – Wiley; Construction Management and Economics – Taylor & Francis; Energy and Buildings – Elsevier; Engineering, Construction and Architectural Management – Emerald; International Journal of Construction Education and Research – Taylor & Francis; Indoor & Built Environment – Sage; International Journal of Construction Management – Taylor & Francis; International Journal of Injury Control and Safety Promotion – Taylor & Francis; Journal of Architectural Engineering – ASCE; Journal of Civil Engineering and Management – Taylor & Francis; Journal of Cleaner Production – Elsevier; Journal of Construction Engineering and Management – ASCE; Journal of Management in Engineering – ASCE; Journal of Habitat International – Elsevier; Journal of Professional Issues in Engineering Education and Practice – ASCE; Safety Science – Elsevier; Sustainability – MDPI; Sustainable Cities and Society – Elsevier; Renewable & Sustainable Energy Reviews – Elsevier; Resources, Conservation & Recycling – Elsevier; IEEE Transactions on Visualization and Computer Graphics.

Conference Reviewer

ASCE Construction Research Congress (CRC), 2016, 2018

ASCE International Workshop on Computing in Civil Engineering (IWCCE), 2017
ASCE International Conf. on Sustainable Design, Engr. and Constr. (ICSDEC), 2016
ASCE International Structural Engineering and Construction Conf. (ISEC), 2017
ASEE Annual Conference, 2016, 2017, 2018
ASC Annual Conference, 2015
IEEE Industrial Engineering and Engineering Management Annual Conference, 2015
CIB W78, CONVR, IGLC, 2017
West Africa Built Environment Research Conference, 2013

UNIVERSITY SERVICE:

School of Planning, Design and Construction (SPDC) at MSU

SPDC Technology Ad Hoc Committee, 2019-2020 (Co-Chair)
SPDC New CM Faculty Search Committee, 2019.
CM Recruitment – BIM/VR Demonstration, 2019.
SPDC Bylaws Review Committee, 2018-2019.
MSU GATE Leadership Program faculty advisor, 2018.
SPDC/Impression 5 Science Center BIM/VR Demonstration, 2018
CM/CEE student BIM/VDC field visit at Baton Malow, MI, 2018
CM Recruitment Flyer & Video Development, 2018-19
CM Curriculum Review Committee, 2017, 18
Great Lakes Builders Show Exhibit and Job Fair, Novi MI, 2017
SPDC Academic Advisor Search Committee, 2016
ACCE Accreditation Annual Meeting, ACCE, 2016
Great Lakes Builders Show Career Fair, Novi MI, 2016
Student Contractor Awareness Night (SCAN), AGC of Michigan, 2015

Department of Civil & Environmental Engineering (CEE) at MSU

CEE Doctoral Candidate Examination Committee, 2018-19
MSU High School Engineering Institute Summer Program, 2017, 18.
Preparing African American Males for Energy & Education (PAAMEE) Program, 2017

PROFESSIONAL AFFILIATIONS:

American Society of Civil Engineers (ASCE)
American Society of Engineering Education (ASEE)
U.S. Green Building Council (USGBC)
Construction Management Association of America (CMAA)
International Council for Building (CIB)

MEDIA APPEARANCES:

Fox News, April 20, 2017; MSU Today, April 19, 2017; InfoTrack Radio, July 16, 2016; Eco-Business, June 20, 2016; The Fifteth Estate, Australia, June 14, 2016; Energy Daily, June 10, 2016; Science Daily, June 10, 2016; Phys.org, June 8, 2016; MSU Today, June 8, 2016