

GUIRONG (GRACE) YAN

CURRICULUM VITAE



Associate Professor, Ph.D., Dean's Scholar, Presidential Engagement Fellow
Chair of Board of Directors of North American Alliance of Hazards and Disaster Research Institutes

Director of Center for Hazard Mitigation and Community Resilience

Director of Wind Hazard Mitigation (WHAM) Laboratory

Coordinator of Structures Group, Dean's Scholar, Presidential Engagement Fellow

Department of Civil, Architectural and Environmental Engineering

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EDUCATION

- **Ph.D. in Engineering Mechanics** (Sept. 2002-Nov. 2006)
Harbin Institute of Technology, Harbin, P.R. China
- **M.S. in Structural Engineering** (Sept. 2000-Aug. 2002)
Harbin Institute of Technology, Harbin, P.R. China
- **B.S. in Civil Engineering** (Sept. 1994-Aug. 1998)
Harbin Commerce University, Harbin, P.R. China

RESEARCH INTERESTS

- **Simulation of natural hazards and their actions on built environment** (e.g., tornadoes, hurricanes with storm surge, flooding and winter storm)
- **Hazard mitigation and community resilience** by conducting collaborative research between Engineering and Social Science, Economy, Psychology and Humanities
- **Improvement of risk awareness of natural hazards and informed decision-making** through Virtual Reality Animation and innovative messaging infrastructure
- **Computational Wind Engineering** (CFD simulations)
- **Structural health monitoring and condition assessment** (Linear/Nonlinear system identification and damage detection under multi-hazard environments)

PROFESSIONAL EXPERIENCE

- **Tenured Associate Professor** (Sept. 2020-present)
Department of Civil, Architectural and Environmental Engineering
Missouri University of Science and Technology
- **Tenure-track Assistant Professor** (Aug. 2014-Aug. 2020)
Department of Civil, Architectural and Environmental Engineering
Missouri University of Science and Technology

- **Tenure-track Assistant Professor** (Aug. 2012- Aug. 2014)
Department of Civil Engineering
University of Texas at El Paso (UTEP)
- **Lecturer** (Feb. 2010-Aug. 2012)
School of Engineering
University of Western Sydney (UWS), Australia
- **Postdoctoral Research Associate** (Oct. 2009-Feb. 2010)
School of Civil Engineering
Purdue University (Supervisor: Dr. Shirley Dyke)
- **Postdoctoral Research Associate** (Jun. 2008-Sept. 2009)
Department of Mechanical, Aerospace and Structural Engineering
Washington University in St. Louis (Supervisor: Dr. Shirley Dyke)
- **Postdoctoral Research Associate** (Jun. 2007-May 2008)
Department of Structural and Geotechnical Engineering
Polytechnic University of Turin, Italy (Supervisor: Dr. Alexander De Stefano)

HONORS AND AWARDS

- Joseph Senne Academy of CE Faculty Achievement Award, 2021
- Faculty Research Award of Missouri University of Science and Technology, 2020
- Dean's Scholar Award of Missouri University of Science and Technology, 2020-2022
- Presidential Engagement Fellow of the University of Missouri System, 2020-2022
- Missouri Accelerated Research Award, 2019
- Outstanding Alumni Award of Harbin Institute of Technology, 2016
- UTEP Outstanding Research Performance Award, 2014
- NSF Fellow for ENHANCE (NSF-National Science Foundation), 2013
- TRB minority faculty Mentor (TRB-Transportation Research Board), 2013
- ASCE ExCEED Fellow, 2016

PUBLICATIONS (56 Peer-reviewed Journal Papers and 68 Peer-reviewed Conference Papers)

Journal Publications (56 Journal Papers)

1. Ryan Honerkamp, **Guirong Yan** and John van de Lindt (2021), "Revealing bluff-body aerodynamics on low-rise buildings under tornadic winds using "numerical" laboratory tornado simulator," *ASCE Journal of Structural Engineering*. Accepted on Oct. 27, 2021.
2. Omar M. Nofal, John W. van de Lindt, Trung Q. Do, **Guirong Yan**, Sara Hamideh, Daniel T Cox, and Casey Dietrich (2021), "Methodology for Regional Multihazard Hurricane Damage and Risk Assessment," *ASCE Journal of Structural Engineering*. 147(11): 04021185.
3. Jian Yang, Yu Chen, Yanan Tang, **Guirong Yan** and Zhongdong Duan (2021), "A High-fidelity Parametric Model for Tropical Cyclone Boundary Layer Wind Field by Considering Effects of Land Cover and Terrain," *Atmosphere Research*, 260, 105701.
4. Guirong Yan and John van de Lindt (2021), "Living in Harmony with Natural Hazards by Being Prepared Psychologically, Physically, and Financially," *Journal of Wind Engineering*. May, 2021.

5. Yi Zhao, **Guirong Yan** and Ruoqiang Feng (2021), “Wind Flow Characteristics of Multi-Vortex Tornadoes,” *Journal of Natural Hazard Review*, DOI: 10.1061/(ASCE)NH.1527-6996.0000462.
6. Jianxun Zhao, Guirong Yan, and Daoru Han (2021), “A Review of Approaches to Simulate Windborne Debris Dynamics in Wind Fields,” *Journal of Wind Engineering and Industrial Aerodynamics*, Published online on March 30, 2021.
7. Stone, N. J., **Yan, G.**, Nah, F. F.-H., Sabharwal, C., Angle, K., Hatch, G., Rennels, S., Brown, V., & Schoor, G. (2021), “Virtual reality for hazard mitigation and community resilience: An interdisciplinary collaboration with community engagement to enhance risk awareness,” *AIS Transactions on Human-Computer Interaction*, 12(4). DOI: 10.17705/1thci.00134. Available at <http://aisel.aisnet.org/thci/vol12/iss4/1>
8. Yunyue Cong, Houjun Kang and **Guirong Yan** (2021), “Investigation into planar dynamics of a cable-beam model under two-frequency excitations,” *Internal Journal of Non-Linear Mechanics*, (129), 103670. DOI: 10.1016/j.ijnonlinmec.2021.103670
9. Yunyue Cong, Houjun Kang, **Guirong Yan** and Tieding Guo (2020), “Modeling, dynamics and parametric studies of a multi-cable-stayed beam model,” *Acta Mechanica*, (231): 4947-4970.
10. Ryan Honerkamp, **Guirong Yan** and Jeff Synder (2020), “A Review of the Characteristics of Tornadoic Wind Fields through Observations and Simulations,” *Journal of Wind Engineering and Industrial Aerodynamics*, (202): 104195. <https://doi.org/10.1016/j.jweia.2020.104195>
11. Yunyue Cong, Houjun Kang and **Guirong Yan** (2020). Theoretical Analysis of Dynamic Behaviors of Cable-stayed Bridges Excited by Two Harmonic Forces. *Nonlinear Dynamics*. 1-28. DOI: 10.1007/s11071-020-05763-8.
12. Zhi Li, Ryan Honerkamp, **Guirong Yan** and Ruoqiang Feng (2020), “Influence of a community of buildings on tornadoic wind fields,” *Journal of Wind and Structures*, 30(2): 165-180. DOI: <http://dx.doi.org/10.12989/was.2020.30.2.165>
13. Ruoqiang Feng, Qi Cai, Ying Ma, **Guirong Yan** (2020), “Shear analysis of self-drilling screw connections of CFS wall with steel sheathing,” *Journal of Constructional Steel Research*, (167): 105842.
14. Ruoqiang Feng, Qi Cai, Ying Ma, Shen Liu and **Guirong Yan** (2020) “Simulation study on shear resistance of new cold-formed steel framed shear walls sheathed with steel sheet and gypsum boards. *Advances in Structural Engineering*. <https://doi.org/10.1177/1369433219900681>.
15. Fengcheng Liu, Ruoqiang Feng, Konstantinos Daniel Tsavdaridis, and **Guirong Yan** (2020), “Designing efficient grid structures considering structural imperfection sensitivity,” *Engineering Structures*. 109910. <https://doi.org/10.1016/j.engstruct.2019.109910>.
16. Tiantian Li, **Guirong Yan**, Fangping Yuan and Genda Chen (2019), “Dynamic Responses on Large-Scale Dome Structures Induced by Tornado,” *Journal of Wind Engineering and Industrial Aerodynamics*, (190): 293-308.
17. Fangping Yuan, **Guirong Yan**, Ryan Honerkamp, and Kakkattukuzhy M. Isaac, Ming Zhao and Xiaoyong Mao (2019), “Numerical Simulation of Laboratory Tornado Simulator that can Produce Translating Tornadoes,” *Journal of Wind Engineering and Industrial Aerodynamics*, (190): 200-217.

18. Tiantian Li, **Guirong Yan**, Ryan Honerkamp and Yi Zhao (2019), "Identification of Existing Stress in Existing Civil Structures for Accurate Assessment of Structural Behavior under Impending Extreme Winds," *Advances in Structural Engineering*. 23(4): 702-712.
<https://doi.org/10.1177/1369433219879362>
19. Tiantian Li, **Guirong Yan**, Ruoqiang Feng and Xiaoyong Mao (2019), "Investigation of the flow structure of single- and dual-celled tornadoes and their wind effects on a dome structure," *Engineering Structures*. Available online 3 December 2019, 109999.
<https://doi.org/10.1016/j.engstruct.2019.109999>
20. X Wang, R Feng, **G Yan**, B Zhu, F Liu (2019) "Buckling mechanism of cable-stiffened lattice shells with bolted connections," *Advances in Structural Engineering*.
<https://doi.org/10.1177/1369433219862098>.
21. **Guirong Yan**, Tiantian Li, Ruoqiang Feng, Genda Chen, Xugang Hua, and Qihua Duan (2018), "Detection of Nodal Snap-through Instability in Civil Large-scale Space Structures Using Tilt Sensing of Members," *Journal of Applied Nonlinear Dynamics*, 7(1): 25-44. (DOI: 10.5890/JAND.2018.03.003)
22. **Guirong Yan**, Tiantian Li, Jianxin Yu, Ruoqiang Feng and Xiaoyun Shao (2018), "Damage localization using shape change in uniform load surface for civil large-span space structures," *Journal of Intelligent Material Systems and Structures*, 30 (9): 1339-1354.
<https://doi.org/10.1177/1045389X18806388>
23. Ou Yang, Bai Zhang, **Guirong Yan** and Jun Chen (2018), "Bond Performance between Slightly Corroded Steel Bar and Concrete after Exposure to High Temperature," *ASCE Journal of Structural Engineering*, 144 (11): 04018209. (ORCID: <https://orcid.org/0000-0002-7267-1968>)
24. Ruoqiang Feng, Fengcheng Liu, Qi Cai, **Guirong Yan**, and Jiabing Leng (2018), "Field measurements of wind pressure on an open roof during Typhoons HaiKui and SuLi," *Wind and Structures*, 26(1): 11-24. (DOI: <https://doi.org/10.12989/was.2018.26.1.011>)
25. **Guirong Yan**, Shirley J. Dyke and Ayhan Irfanoglu (2018), "Damage Detection for Truss Structures based on Member Axial-strain Mode Shapes with Experimental Validation," *Journal of Vibration Testing and System Dynamics*, 2(4): 403-406. (DOI: 10.5890/JVTSD.2018.12.005)
26. Ruo-qiang Feng, Feng-cheng Liu, **Guirong Yan**, Xiao-liang Chang (2017), "Mechanical behavior of Ring-sleeve joints of single-layer reticulated shells," *Journal of Constructional Steel Research*, 128: 601-610.
27. **Guirong Yan**, Chen Fang, Ruoqiang Feng, Xugang Hua and Yi Zhao (2017), "Detection of Member Overall Buckling in Civil Space Grid Structures Based on Deviation in Strain along the Member," *Engineering Structures*, 131: 599-613.
28. Xi Wang, Ruoqiang Feng, **Guirong Yan**, Fengcheng Liu and Weijia Xu (2016), "Effect of joint stiffness on the stability of cable-braced grid shells," *International Journal of Steel Structures*, 16(4): 1123-1133.
29. **Guirong Yan**, Peng Chen, Huangda Hu and Jiarui Yi (2015), "Fast Damage Detection of cable-stayed bridges using an Improved Edge-detection Method," *Journal of Intelligent Material Systems and Structures*, 26: 1711-1722.
30. Zhuoxiong Sun, Sriram Krishnan, Greg Hackmann, **Guirong Yan**, Shirley J. Dyke, Chenyang Lu and Ayhan Irfanoglu (2015), "Damage detection on a full-scale highway sign structure with a distributed wireless sensor network," *Smart Structures and Systems, An International Journal*, 16(1): 223-242.

31. **Guirong Yan**, Xuelin Peng and Hong Hao (2014), “Dynamic Characteristics of Submarine Pipelines and Experimental Validation of a Bedding Condition Assessment Approach based on Mode Shape Curvatures,” *Australian Journal of Structural Engineering*, 15(1): 1-13.
32. Gregory Hackmann, Weijun Guo, **Guirong Yan**, Zhuoxiong Sun, Chenyang Lu and Shirley Dyke (2014), “Cyber-Physical Codesign of Distributed Structural Health Monitoring with Wireless Sensor Networks,” *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 25(1): 53-72.
33. Cecilia Surace, **Guirong Yan**, Richard Archibald, Rishu Saxena and Ruoqiang Feng (2014), “Structural Damage Detection using the Polynomial Annihilation Edge Detection Method,” *Australian Journal of Structural Engineering*, 15(1): 37-49.
34. Ruoqiang Feng, Jihong Ye, **Guirong Yan** and Jinming Ge (2013), “Dynamic nonlinearity and nonlinear single-degree-of-freedom model for cable net glazing,” *ASCE Journal of Engineering Mechanics*, 139(10): 1446-1459.
35. Ming Zhao and **Guirong Yan** (2013), “Numerical simulation of vortex-induced vibration (VIV) of two circular cylinders of different diameters at low Reynolds number,” *Physics of Fluids*, 25(8), p083601.
36. Ming Zhao, Kalyani Kaja, Yang Xiang and **Guirong Yan** (2013), “Vortex-induced Vibration (VIV) of a circular cylinder in combined steady and oscillatory flow Article,” *Ocean Engineering*, 73: 83-95.
37. Ruoqiang Feng, Jihong Ye, **Guirong Yan**, Qing-xiang Li and Bin Yao (2013), “Wind-induced torsion vibration of the super high-rise building of Shenzhen Energy Center,” *The Structural Design of Tall and Special Buildings*, 22(10): 802-815.
38. Linren Zhou, **Guirong Yan**, Wei Wang and Jinping Ou (2013), “Review of Benchmark Studies and Guidelines for Structural Health Monitoring,” *Advances in Structural Engineering*, 16(7): 1187-1206.
39. Linren Zhou, **Guirong Yan** and Jinping Ou (2013), “Response Surface Method based on Radial Basis Functions for Modeling large-scale structures in model updating,” *Computer-Aided Civil and Infrastructure Engineering*, 28(3): 210-226.
40. Ruoqiang Feng, **Guirong Yan** and Jinming Ge (2012), “Effects of high modes on the wind-induced response of super high-rise buildings,” *Earthquake Engineering and Engineering Vibration*, 11(3): 427-434.
41. **Guirong Yan**, Alessandro De Stefano, Emiliano Matta and Ruoqiang Feng (2012), “A Novel Approach to Detecting Breathing-fatigue Cracks based on Dynamic Characteristics,” *Journal of Sound and Vibration*, 332 (2): 407-422.
42. **Guirong Yan**, Alessandro De Stefano and Ge Ou (2012), “A General Nonlinear System Identification Method Based upon the Time-varying Trend of the Instantaneous Vibration Frequency and Amplitude,” *Advances in Structural Engineering*, 15(5): 781-792.
43. Lanhui Guo, Ran Li, Sumei Zhang and **Guirong Yan** (2012), “Hysteretic Analysis of Steel Plate Shear Walls (SPSWs) and A modified Strip Model for SPSWs,” *Advances in Structural Engineering*, 15(10): 1751-1764.
44. **Guirong Yan**, Shirley Dyke and Ayhan Irfanoglu (2012), “Experimental Validation of a Damage Detection Approach on a Full-Scale Highway Sign Support Truss,” *Mechanical Systems and Signal Processing*, (28): 195-211

45. **Guirong Yan**, Zhongdong Duan and Jinping Ou, Alessandro De Stefano (2010), “Structural Damage Detection Using Residual Forces Based on Wavelet Transform,” *Mechanical Systems and Signal Processing*, 24(1): 224-239.
46. **Guirong Yan** and Shirley Dyke (2010), “Structural Damage Detection Robust Against Time Synchronization Errors,” *Smart Materials and Structures*. 19(6): 065001.
47. **Guirong Yan**, Weijun Guo, Shirley Dyke, Gregory Hackmann and Chenyang Lu (2010), “Experimental Validation of a Multi-level Damage Localization Technique with Distributed Computation,” *Smart Structures and Systems*, 6(5): 561-578.
48. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2010), “Damage Detection for Beam Structures Using an Angle-between-String-and-Horizon Flexibility Matrix,” *Structural Engineering and Mechanics, An International Journal*, 36(5): 643-667.
49. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2009), “Damage Detection for Truss or Frame Structures Using an Axial Strain Flexibility,” *Smart Structures and Systems, an Int. Journal*, 5(3): 291-316.
50. Zhongdong Duan, **Guirong Yan** and Jinping Ou (2008), “Challenges in applying the vibration-based damage detection to civil structures (in Chinese),” *Journal of Harbin Institute of Technology*, 40(4): 505-513.
51. Zhongdong Duan, **Guirong Yan**, Jinping Ou and Bill F. Spencer (2007), “Damage Detection in Ambient Vibration Using Proportional Flexibility Matrix with Incomplete Measured DOFs,” *Structural Control and Health Monitoring*, 14(2): 186-196.
52. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2007), “Application of genetic algorithm on structural finite element model updating (in Chinese),” *Journal of Harbin Institute of Technology*, 39(2): 181-186.
53. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2007), “Review on Structural Damage Detection Based on Vibration Data (in Chinese),” *Earthquake Engineering and Engineering Vibration*, 27(3): 95-103.
54. Zhongdong Duan, **Guirong Yan**, Jinping Ou and B.F. Spencer (2006), “Proportional Flexibility Matrix of Structures (in Chinese),” *Journal of Harbin Institute of Technology*, 38(8): 1237-1242.
55. Zhongdong Duan, **Guirong Yan**, Jinping Ou and Bill F. Spencer (2005), “Damage Localization in Ambient Vibration by Constructing Proportional Flexibility Matrix,” *Journal of Sound and Vibration*, 284(1-2): 455-466.
56. Zhongdong Duan, B.F. Spencer, **Guirong Yan** and Jinping Ou (2004), “An Improved Optimal Elemental Method for Finite Element Model Updating,” *Earthquake Engineering and Engineering Vibration*, 3(1): 67-74.

Journal Papers under Review (14 in total)

1. Tiantian Li, Yi Zhao and **Guirong Yan**. Influence of Turbulence Modeling on Wind Effects of Straight-line Winds on Dome Structures. *Journal of Fluids and Structures*. Under review.
2. Tiantian Li and **Guirong Yan**. Modifying G to Consider Dynamic Impact of Tornadoes for Achieving Tornado-Resistance Design. *Journal of Structural Engineering*. Under review.
3. Yi Zhao, **Guirong Yan** and Ruoqiang Feng. Parametric studies of Multi-Vortex Tornadoes. *Journal of Wind Engineering and Industrial Aerodynamics*. Under review.

4. Yi Zhao, **Guirong Yan** and Ruoqiang Feng. Derivation of Vertical Velocity in Tornadic Wind Field from Radar-measured Data. *Journal of Wind and Structures*. Under review.
5. Ryan Honerkamp, **Guirong Yan** and van de Lindt. Properly simulating the translation of tornado-like vortex in laboratory tornado simulator. *Journal of Wind Engineering and Industrial Aerodynamics*. Under review.
6. Ryan Honerkamp, **Guirong Yan**, Daoru Han, Ruoqiang Feng, Zhi Li and Tiantian Li. Reveal Tornado-induced Structural Damage based on Reconnaissance Surveys of 2019 Jefferson City, MO Tornado and Previous Notable Tornadoes. *Journal of Natural Hazard Review*. Under review.
7. Ryan Honerkamp and **Guirong Yan**. Influence of Turbulence Modeling on CFD Simulation Results of Multi-vortex Tornado-Structure Interaction. *Journal of Wind and Structures*. Under review.
8. Yi Zhao, **Guirong Yan** and Ruoqiang Feng. Wind Effects of Multi-vortex Tornado on Civil Structures. *Engineering Structures*. Under review.
9. Yi Zhao, **Guirong Yan** and Ruoqiang Feng. Study on Most Unfavorable Translating Paths of Tornadoes for Tornado-resistant Design of Civil Structures. *Journal of Sustainable Cities and Society*. Under review.
10. Zhi Li, **Guirong Yan** and Ruoqiang Feng. Wind Effects of Tornadoes on Bridges. *Journal of Bridge Engineering*. Under review.
11. Houjun Kang, Xiaoyang Su, Tieding Guo and **Guirong Yan**. Planar internal resonance analysis of a cable-stayed bridge with vertical elastic supports at both ends. *Mechanical Systems and Signal Processing*. Under review.
12. Nofal OM, Lindt JW van de, Do TQ, Yan G, Hamideh S, Cox DT, and Dietrich, C. Methodology for Regional Multi-Hazard Hurricane Damage and Risk Assessment. *Journal of Structure Engineering*. 2021. Under review.
13. Houjun Kang and **Guirong Yan**. On Internal Resonance Analysis of A Double-cable-stayed Shallow-arch Model with Vertical Elastic Supports at Both Ends. *International Journal of Non-Linear Mechanics*. Under review.
14. Ruo-qiang Feng, Zhijie Zhang and **Guirong Yan**. Experimental and simulation study on the hysteretic behavior of double-ring joints for a single-layer grid shell under cyclic eccentric loading. *Engineering Structures*. Under review.

Book Chapter

1. Fangping Yuan, **Guirong Yan**, Ryan Honerkamp, Kakkattukuzhy M. Isaac and Ruoqiang Feng (2018). "Effects of chamber shape on simulation of tornado-like flow in a laboratory." Wind Engineering for Natural Hazards-Modeling, Simulation, and Mitigation of Windstorm Impact on Critical Infrastructure. Edited by Aly Mousaad Aly and Elena Dragomirescu. American Society of Civil Engineers, 2018, ISBN: 0784481857, 9780784481851

Publications in Conference Proceedings (68 Refereed Conference Papers)

1. Nofal, O. M., Lindt, J. W. van de, **Yan, G.**, Hamideh, S., and Dietrich, C. (2021), "Multi-Hazard Hurricane Vulnerability Model to Enable Resilience-Informed Decision." Proceedings of International Structural Engineering and Construction (ISEC-11), S. El Baradei, A. Madian, A. Singh, and S. Yazdani, eds., Cairo, Egypt.

2. Megan Gallagher, Sara Hamideh, John van de Lindt and **Guirong Yan** (2021), “Coastal Community Resilience Bonds to Enable Coupled Socio-Physical Recovery.” 2021 Researchers Meeting
3. Ryan Honerkamp, **Guirong Yan**, and John W. van de Lindt (2021), “Design Wind Loading for Elevated Buildings under Hurricanes.” *SEI and ASCE Structures Congress*, March 10-13, 2021 Seattle, WA, USA.
4. Ryan Honerkamp and **Guirong Yan** (2021), “Validation of CFD Model of Tornado Simulator Using Experiments Conducted on a Gable-roofed Structure.” *The 13th International Conference on Structural Safety and Reliability (ICOSSAR 2021)*, June 21-25, 2021, Shanghai, China.
5. Yi Zhao, **Guirong Yan** (2021), “Failure Modes of Low-rise Buildings under Multi-vortex Tornadoes.” *SEI and ASCE Structures Congress*, March 10-13, 2021 Seattle, WA, USA.
6. Yi Zhao, **Guirong Yan** (2021) “Size Effect on Wind Loads Induced by Multi-vortex Tornadoes on Low-rise Buildings.” *The 13th International Conference on Structural Safety and Reliability (ICOSSAR 2021)*, June 21-25, 2021, Shanghai, China.
7. Zhi Li, **Guirong Yan** (2021), “Proper Determination of Designing Tornadic Wind Loading on Civil Structures.” *SEI and ASCE Structures Congress*, March 10-13, 2021 Seattle, WA, USA.
8. Zhi Li and **Guirong Yan** (2021), “Investigation of Wind Effects on Bridges Induced by Tornadoes.” *The 13th International Conference on Structural Safety and Reliability (ICOSSAR 2021)*, June 21-25, 2021, Shanghai, China.
9. Hou, P., Nah, F., **Yan, G.**, Stone, N., and Sabharwal, C. (2020), “Effect of Virtual Reality Immersiveness on Protection Motivation of Tornado Hazards,” International Conference on Information Systems (ICIS) TREOs, December 2020.
10. Ryan Honerkamp and **Guirong Yan** (2020), “Reveal bluff-body aerodynamics on low-rise buildings under tornadoes using “numerical” laboratory tornado simulator.” *9th International Colloquium on Bluff Body Aerodynamics and Applications (BBAAIX)*, July 20-23, 2020, Birmingham, UK.
11. Yi Zhao, **Guirong Yan** (2020). “Wind effects induced by multi-vortex tornadoes on a low-rise building.” *9th International Colloquium on Bluff Body Aerodynamics and Applications (BBAAIX)*, July 20-23, 2020, Birmingham, UK.
12. Ryan Honerkamp and **Guirong Yan** (2019), “Investigation of Structural Failure Modes Induced by Tornadoes through Post-event Surveys.” *The 9th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, August 4-7, 2019, St. Louis, MO, USA
13. Ryan Honerkamp and **Guirong Yan** (2019), “High-fidelity CFD Simulation of a Large-scale Laboratory Tornado Simulator by Including Gravity and Translation.” *The 15th International Conference on Wind Engineering*, September 1-6, 2019, Beijing, China.
14. Tiantian Li and **Guirong Yan** (2019), “Improve Wind-induced Structural Responses on a Cable-net Roof Structure by Using Two-way Coupled Wind-structure-interaction Simulations.” *The 15th International Conference on Wind Engineering*, September 1-6, 2019, Beijing, China.
15. Tiantian Li, **Guirong Yan**, Fangping Yuan and Genda Chen (2019), “Non-stationary Characteristics of Tornadoes and Induced Dynamic Impact on a Large-span Dome Structure.” *2019 Structural Congress*, April 24-28, 2019, Orlando, FL, USA.

16. Tiantian Li, **Guirong Yan**, Fangping Yuan and Genda Chen (2018), “Tornado-Induced Structural Responses on Large-Scale Dome Structures.” *2018 International Symposium on Computational Wind Engineering*, June 18-22, 2018, Seoul, Korea.
17. Yi Zhao, **Guirong Yan** and Ming Zhao (2018), “CFD Simulation of Full-Scale Multi-Subvortex Tornadoes.” *2018 International Symposium on Computational Wind Engineering*, June 18-22, 2018, Seoul, Korea.
18. Zhi Li, Ryan Honerkamp and **Guirong Yan** (2018), “Influence of a Community of Buildings on Tornadoic Wind Field.” *2018 International Symposium on Computational Wind Engineering*, June 18-22, 2018, Seoul, Korea.
19. Fangping Yuan, **Guirong Yan**, Ryan Honerkamp and K.M. Isaac (2017), “Numerical Simulation of Tornado-like Flow in a Laboratory-scale Ward-type Simulator.” The 13th Americas Conference on Wind Engineering, Gainesville, FL, USA, May 21-24, 2017.
20. Yi Zhao, **Guirong Yan** and Ruoqiang Feng (2017), “Improvement of Tornado Simulation by Adjusting Boundary Conditions.” The 13th Americas Conference on Wind Engineering, Gainesville, Florida, USA, May 21 - 24, 2017.
21. Yi Zhao, **Guirong Yan** and Kakkattukuzhy M. Isaac (2016), “Characteristics of wind flow around dome structures in tornadoic wind field.” *The 4th American Association for Wind Engineering Workshop*, August 14 - 16, 2016, Miami, Florida, USA.
22. **Guirong Yan**, Jianxin Yu, Yi Zhao and Yan Xiao (2016), “Locate damage based on change in structural shape Calculated from Uniform Load surface.” *ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, September, 2016, Stowe, VT, USA.
23. Yi Zhao, **Guirong Yan**, Jiahao Zu, Fangping Yuan and Kakkattukuzhy M. Isaac (2016), “Comparison on wind effects of tornadoic and straight-line wind fields on spherical dome structures.” *The 8th International Colloquium on Bluff Body Aerodynamics and Applications*, June 7-11, 2016, Boston, Massachusetts, USA.
24. Jiahao Zu, **Guirong Yan**, and Chao Li (2016), “Investigation of wind pressure of translating tornado on spherical dome structures.” *The 8th International Colloquium on Bluff Body Aerodynamics and Applications*, June 7-11, 2016, Boston, Massachusetts, USA.
25. Yi Zhao, **Guirong Yan**, and Xugang Hua (2016), “Investigation of Wind Effects of Tornadoes on Dome Structures.” *First International Symposium on Flutter and its Application*, May 15-17, 2016, Tokyo, Japan.
26. **Guirong Yan**, Jianxin Yu, Yi Zhao and Ruoqiang Feng (2016), “Locate Damage based on Change in Structural Shape for Civil Space Structures.” *Proc. SPIE 9803, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2016*, 98034X (April 20, 2016; Las Vegas, NA, USA). doi:10.1117/12.2219430.
27. **Guirong Yan**, Qihua Duan and Xugang Hua (2016), “Instability Signature for Detecting Snap-through Buckling of Dome Structures.” *Proc. SPIE 9803, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2016*, 98033X (April 20, 2016; Las Vegas, NA, USA). doi:10.1117/12.2219389.
28. **Guirong Yan**, Scott Jemison, Qihua Duan and Ruoqiang Feng (2015), “Detection of pretension loss of cable-net structures.” *The ASME 2015 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, September, 2015, Colorado Springs, CO.
29. **Guirong Yan**, Qihua Duan, Ruoqiang Feng and Chen Fang (2015), “Identification of Overall Buckling of Members in Space Grid structures.” *The 3rd International Conference on*

Civil Engineering, Architecture and Sustainable Infrastructure, July 1-3, 2015, Kowloon, Hong Kong.

30. **Guirong Yan**, Qihua Duan, Ruoqiang Feng and Chen Fang (2015), "Identification of Nodal Snap-through Instability in civil space Structures." *The ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, September, 2015, Colorado Springs, CO.
31. **Guirong Yan**, Kai Zhao, Chen Fang and Ruoqiang Feng (2014), "Identification of Breathing Fatigue Cracks in Nonlinear Structures." *2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, September 8-10, 2014, Newport, Rhode Island, USA.
32. **Guirong Yan**, Kai Zhao, Ruoqiang Feng and Jiarui Yi (2014), "Identification of Fatigue Cracks through Separating Dynamic Responses." *The SPIE Smart Structures/ NDE*, March, 2014, San Diego, CA, USA.
33. **Guirong Yan**, Jianxin Yu, Ruoqiang Feng and Carlos Ferregut (2013), "Damage Location of Civil Large-scale Space Structures based on Average Axial-strain Mode Shapes." *The 9th International Workshop on Structural Health Monitoring*, September, 2013, Stanford, CA.
34. Peng Chen, Guangda Hu, Soheil Nazarian and **Guirong Yan** (2013), "Structural Damage Detection based on an Improved Edge-detection Technique." *The ASME 2013 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*, September 16-18, 2013, Snowbird, Utah, USA.
35. Cesar Carrasco, Chen Fang, Ruoqiang Feng and **Guirong Yan** (2013), "Detection of Instability for Civil Large-scale Space Structures." *The 9th International Workshop on Structural Health Monitoring*, September, 2013, Stanford, CA.
36. Z. Sun, S. Krishnan, G. Hackmann, **G. R. Yan**, S. Dyke, C. Lu and A. Irfanoglu (2012), "Damage Detection on a Full-Scale Highway Sign Structure with a Distributed Wireless Sensor Network." *International Conference on Bridge Maintenance, Safety and Management (IABMAS'12)*, July 2012.
37. Z. S. Liu, L. Y. Tong and **G. R. Yan** (2012), "A novel system identification approach for bilinear systems." *Australian Structural Engineering Conference*, 11-13 July, Perth, Australia.
38. Z. S. Liu, L. Y. Tong, **G. R. Yan** and K. Kaja (2012), "A multi-level damage localization approach for effectively using energy in wireless sensor networks: an experimental validation." *Australian Structural Engineering Conference*, 11-13 July, Perth, Australia.
39. **Guirong Yan** Xuelin Peng, Hong Hao, (2011), "Localization of Free-spanning Damage Using Mode Shape Curvature." *DAMAS2011*, Oxford University, England. *Journal of Physics: Conference Series*, 305 (1).
40. S.S. Krishnan, Z. Sun, A. Irfanoglu, S.J. Dyke and **G.R. Yan** (2011), "Evaluating the performance of distributed approaches for modal identification." *Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2011*. Proceedings of SPIE Volume: 7981 Article Number: 79814M DOI: 10.1117/12.882143. San Diego, California, USA
41. **G.R. Yan**, Z.S. Liu, and Z.D. Duan (2010), "Structural damage detection using dynamic residue based on wavelet transform." *International Symposium on Structural Engineering*, 18-20 December 2010, Guangzhou, China.

42. **G.R. Yan**, Z.S. Liu, and Z.D. Duan(2010), “Dynamic residue based on wavelet transform for Damage localization.” Civionics Research Centre Annual Conference, UWS, 25-26 November 2010.
43. **G.R. Yan**, Z.S. Liu, Z.D. Duan (2010), “A novel damage indicator based on wavelet transform for damage localization.” *Proceedings in Handling Exceptions in Structural Engineering: Structural Systems, Accidental Scenarios, Design Complexity*, July 2010, Rome Italy.
44. G. Wang, Z.S. Liu, **Guirong Yan** (2010), “A New Damage Feature based on Wavelet Packet Transform for Damage Detection under Ambient Vibration.” *ACMSM21*, December 7-10, Melbourne, Australia.
45. **Guirong Yan**, Z.S. Liu, A.D. Stefano (2010), “A Novel Nonlinear System Identification Based upon Hilbert Transform.” *ACMSM21*, December 7-10, Melbourne, Australia.
46. **Guirong Yan**, Shirley Dyke (2010), “Structural Damage Localization for Truss Structures Robust against Time Synchronization Errors in a Wireless Sensor Network,” *The Fifth European Workshop in Structural Health Monitoring*, June 29-July 2, Stockholm, Italy.
47. Gregory Hackmann, Weijun Guo, **Guirong Yan**, Chenyang Lu, Shirley Dyke (2010), “Cyber-Physical Codesign of Distributed Structural Health Monitoring With Wireless Sensor Networks.” *First International Conference on Cyber-Physical Systems*, April 13-14, Stockholm, Sweden.
48. **Guirong Yan** and Shirley J. Dyke (2009), “A Multi-level Damage Localization Strategy with Distributed Computation for Effectively Using Energy in WSN.” *The 7th International Workshop on Structural Health Monitoring*, September 9-11, 2009, Stanford, CA.
49. **Guirong Yan**, Weijun Guo, Shirley J. Dyke, Gregory Hackmann and Chenyang Lu (2009), “Novel solutions to critical issues on the application of WSNs in SHM.” *The 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials*, June 24-27, 2009, Blacksburg, VA, USA.
50. Nestor E. Castaneda, **Guirong Yan** and Shirley Dyke (2009), "Evaluation of the performance of a distributed structural health monitoring algorithm for wireless sensing." *The 7th International Workshop on Structural Health Monitoring*, September 9-11, 2009, Stanford, CA.
51. **Guirong Yan**, Shirley J. Dyke, Wei Song, Gregory Hackmann and Chenyang Lu (2009), “Structural Damage Localization with Tolerance to Large Time Synchronization Errors in WSNs.” *American Control Conference*, June 10-12, 2009, St. Louis, MO, USA.
52. Gregory Hackmann, Fei Sun, Nestor Castaneda, **Guirong Yan**, Chenyang Lu, Shirley Dyke (2009), “Towards Robust Decentralized Structural Damage Localization Using Wireless Sensor Networks.” *NSF CPS Forum*, April 13, 2009, San Fransisco, CA, USA.
53. **Guirong Yan**, Zhongdong Duan, Jinping Ou (2006), “Damage detection of truss structures.” *The 3rd International Conference on Bridge Maintenance, Safety and Management - Bridge Maintenance, Safety, Management, Life-Cycle Performance and Cost*, Pp 679-681, Jul. 16-19, 2006, Porto-Portugal.
54. Zhongdong Duan and **Guirong Yan** (2005), “An Angle-between-String-and-Horizon Flexibility for structural damage detection.” *The 2nd International Conference on Structural Health Monitoring and Intelligent Infrastructure*, Vols 1 and 2, ED, Ou, JP; Li, H; Duan, ZD, Nov. 16-18, 2005

55. **Guirong Yan**, Zhongdong Duan (2005), "Damage Localization Based on the Residual Wavelet Force." *The 2nd Conference on Structural Health Monitoring of Intelligent Infrastructure*, Nov. 16-18, 2005, Shenzhen, Guangdong, China.
56. **Guirong Yan**, Zhongdong Duan, Jinping Ou (2005), "An Axial Strain Flexibility for Damage Detection of Truss Structure." *International Workshop on Smart Materials and Structures*, October 13-14, 2005, Toronto, Ontario, Canada.
57. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2005), "Damage Detection Based on Wavelet Transform Function (In Chinese)." *2005 Doctoral Forum of China*, August 2005, Nanjing, China.
58. **Guirong Yan**, Zhongdong Duan, Jinping Ou (2005), "Structural Damage Detection by Wavelet Transform and Probabilistic Neural Network." *SPIE's Smart Structures & Materials and Nondestructive Evaluation for Health Monitoring & Diagnostics Symposium*, March 6-10, 2005, San Diego, CA.
59. **Guirong Yan**, Zhongdong Duan, Jinping Ou (2004), "A Novel Damage Index Using Wavelet Packet Components Energies." *The 3rd International Conference on Earthquake Engineering*, October 19-20, 2004, Nanjing, China.
60. Zhongdong Duan, **Guirong Yan**, Jinping Ou (2004), "Structural Damage Localization based on Rotational Flexibility Matrix." *The Third International Conference on Earthquake Engineering*, ED, Liu, WQ; Yuan, FG; Chang, PC, October 19-20, 2004, Nanjing, China.
61. **Guirong Yan**, Zhongdong Duan, Jinping Ou (2004), "Structural Damage Detection Based on the Correlation Analysis between the Wavelet Packet Component Energies." *The Eighth International Symposium on Structural Engineering for Young Experts*, August 20-23, 2004, Xi'an, China.
62. Zhongdong Duan, **Guirong Yan**, Jinping Ou and B.F. Spencer (2004), "Construction of Proportional Flexibility Matrix at Sensor Locations in Ambient Vibration for Damage Localization." *The Second International Conference on Structural Engineering, Mechanics and Computation*, July 5-7, 2004, Cape Town, South Africa.
63. Z.D. Duan, **G.R. Yan**, and J.P. Ou (2004), "A wavelet packet transform and probabilistic neural network approach for structural damage detection." *Proceedings of the 18th Australasian Conference on Mechanics of Structures and Materials: Developments in Mechanics of Structures and Materials*, A.A. Balkema Publishers, (ed. A.J. Deeks & H. Hao), Vol.2, 1197-1202, Perth, Australia, December 1-3, 2004.
64. Z.D. Duan, **G.R. Yan**, and J.P. Ou (2004), "Structural damage detection in ambient vibration using wavelet packet transform and probabilistic neural network." *Structural Health Monitoring, ISIS 2004 Workshop*, 477-488, Winnipeg, Manitoba, Canada, September 22-23, 2004.
65. Z.D. Duan, **G.R. Yan**, and J.P. Ou (2004), "Structural damage location based on rotational flexibility matrix." *The third China-Japan-US Symposium on Structural Health Monitoring and Control*, Dalian, October 14-15, 2004.
66. Z.D. Duan, **G.R. Yan**, J.P. Ou, and B.F. Spencer (2003), "Damage localization in ambient vibration by constructing proportional flexibility matrix." *China-U.S.A. Workshop on Protection of Urban Infrastructure and Public Buildings against Earthquakes and Manmade Disasters*, Beijing, February 2003.
67. Z.D. Duan, **G.R. Yan**, J.P. Ou, and B.F. Spencer (2003), "Damage localization by constructing proportional flexibility matrix." *The first workshop on Structural Health*

Monitoring and Intelligent Structures, Tokyo, JAPAN, TOKYO. November 13-15, 2003.,
ED, Wu, ZS; Abe, M. (1-2), 561-565.

68. **Guirong Yan**, Zhongdong Duan and Jinping Ou (2003), “Structural Model Updating Using Genetic Algorithms (in Chinese).” *The 8th national vibration theory and application symposium*, Shanghai, China, 2003.

Contributed Conference Papers

- [1] Jiahao Zu, **Guirong Yan** and Chao Li (2016). “Investigation of Wind Pressure on Spherical Dome Structures due to Translating Tornado Using CFD.” *The Sixth US-Japan Workshop on Wind Engineering*, Tokyo, Japan, May 12-14, 2016.

Contributed Presentations

1. Yi Zhao and **Guirong Yan** (2019). “Influence of Swirl Ratio and Radial Reynolds Number on Characteristics of Multi-Vortex Tornadoes.” *Tornado Hazard Wind Assessment and Reductions Symposium*, The University of Illinois at Urbana-Champaign, IL, Oct. 14-15, 2019.
2. Ryan Honerkamp and **Guirong Yan** (2019). “CFD Simulation of a Large-scale Laboratory Tornado Simulator that can Produce Translating Tornadic Wind Flow.” *Tornado Hazard Wind Assessment and Reductions Symposium*, The University of Illinois at Urbana-Champaign, IL, Oct. 14-15, 2019.
3. Yi Zhao and **Guirong Yan** (2018). “CFD Simulation of Full-scale Multi-subvortex Tornadoes.” *Tornado Hazard Wind Assessment and Reductions Symposium*, The University of Illinois at Urbana-Champaign, IL, Sept. 26-27, 2018.
4. Zhi Li and **Guirong Yan** (2018). “Influence of a Community of Buildings on Tornadic Wind Field.” *Tornado Hazard Wind Assessment and Reductions Symposium*, The University of Illinois at Urbana-Champaign, IL, Sept. 26-27, 2018.

PATENTS

1. Chenglin Wu, Dimitri Feys, Genda Chen and **Guirong Yan**. 3D Printing Configurable Reinforcements for Concrete Structures (Pending)

TECHNICAL REPORTS AND OTHER REPORTS

1. **Guirong Yan**, Annual Report for NSF project “Collaborative Research: CoPe EAGER: Coastal Community Resilience Bonds to Enable Coupled Socio-Physical Recovery”, October, 2020
2. **Yan, Guirong** and Li, Zhi. Final Technical Report for the MATC project “Investigation of Wind Effects on Bridges Induced by Tornadoes for Tornado-Resistance Design - Phase I”, Sept. 15, 2020.
3. **Yan, Guirong**; Zhang, Xiong; Elgawady, Mohamad; Han, Daoru; Li, Tiantian; Li, Zhi; Zhao, Yi; Honerkamp, Ryan; Zhao, Jianxu; Ramadan, Amro; Esswein, Emilie; Barner, Terry; Roueche, David (2019) “StEER - 22 May 2019 JEFFERSON CITY, MO TORNADO: FIELD ASSESSMENT STRUCTURAL TEAM 1 (FAST-1) EARLY ACCESS RECONNAISSANCE REPORT (EARR).” DesignSafe-CI. <https://doi.org/10.17603/ds2-qa2b-wz63>.

4. **Guirong Yan**, Final Technical Report for NSF project “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”, March, 2019.
5. **Guirong Yan**, Final Technical Report for UTC project “Highly efficient model updating for structural condition assessment of large-scale bridges”, February, 2015.
6. **Guirong Yan**, Annual Report for NSF project “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”, August, 2018
7. **Guirong Yan**, Annual Report for NSF project “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”, April, 2017
8. **Guirong Yan**, Annual Report for NSF project “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”, April, 2016
9. **Guirong Yan**, Annual Report for NSF project “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”, March, 2015
10. **Guirong Yan**, Annual Report for UTC project “Highly efficient model updating for structural condition assessment of large-scale bridges”, February, 2014

GRANTS AND RESEARCH PROJECTS (32 grants & \$10.26M; \$1.95M my portion)

Project Title: SCC-CIVIC-PG Track B: Community Resilience Micro-Bonds to Balance Cost and Social Equity among Stakeholders
Budget: \$50,000
Agency: National Science Foundation, Civic Innovation Challenge in Program of Smart and Connected Communities, Award No.: 2044013
Researchers: **PI: Guirong Yan** (50% Credit)
Year(s): Jan. 2021- May. 2021

Project Title: Enhance Community Resilience of Tornado Alley and Southeastern USA
Budget: \$100,000
Agency: Donation from the Sinquefield Family of Missouri
Researchers: **PI: Guirong Yan** (100% Credit)
Year(s): Jan. 2021- Dec. 2022

Project Title: Collaborative Research: CoPe EAGER: Coastal Community Resilience Bonds to Enable Coupled Socio-Physical Recovery
Budget: \$100,000
Agency: National Science Foundation, Directorates for Geosciences, Social, Behavioral and Economic Sciences, Biological Sciences, Engineering, Education and Human Resources and the Office of Integrative Activities, Award No.: 1940192
Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): Oct. 2019-Sept. 2021

Project Title: Achieving Greater Tornado Resilience through Informed Decision-Making About Reinforcing the Anchorage of Mobile Homes

Budget: \$400,000

Agency: NOAA

Researchers: **PI: Guirong Yan** (51.5% Credit), Co-PI: Cassandra A. Shivers-Williams & Daphne Ladue

Year(s): Sept. 2020-Aug. 2022

Project Title: Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes

Budget: \$314,262

Agency: National Science Foundation, Hazard Mitigation and Structural Engineering program, Award No.: 1455709

Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): Sept. 2014-Feb. 2019

Project Title: Graduate Assistance in Areas of National Need (GAANN): Doctorial Training in Civil Infrastructure Condition Assessment, Sustainability and Resiliency

Budget: \$742,020

Agency: Department of Education

Researchers: **Co-PI: Guirong Yan** (18.75% credit); PI: John Myers; other co-PIs: Genda Chen, Lesley Sneed, Mohamed Elgawady

Year(s): Sept. 2016-Aug. 2019

Project Title: Inspecting and Preserving Infrastructure through Robotics

Budget: \$7,067,100

Agency: Department of Transportation through University Transportation Center

Researchers: **Co-PI: Guirong Yan** (2% Credit)

Year(s): Nov. 2016-Sept. 2022

Project Title: Understanding of Bridge Vulnerability to Climate Change Enables Pro-active Adaptation

Budget: \$85,000

Agency: Mid-America Transportation Center. USDOT

Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): May 2021-Aug. 2022

Project Title: Investigation of Wind Effects on Bridges Induced by Tornadoes for Tornado-Resistance Design – Phase II
Budget: \$37,500
Agency: Mid-America Transportation Center. USDOT
Researchers: **PI: Guirong Yan** (95% Credit); Co-PI: Daoru Han
Year(s): May 2020-Aug. 2021

Project Title: Improving Communication Infrastructure for Extreme Weather Warnings through Dual-Coding and Negative Framing to Enhance Public Safety
Budget: \$7,000
Agency: Missouri University of Science and Technology, Center for Science, Technology, and Society
Researchers: **Co-PI: Guirong Yan** (30% Credit)
Year(s): June. 2021- May. 2022

Project Title: New Community Resilience Bonds to Allocate Resilience Cost Fairly among Stakeholders
Budget: \$3,500
Agency: Missouri University of Science and Technology, Center for Science, Technology, and Society
Researchers: **PI: Guirong Yan** (33% Credit)
Year(s): June 2020- May. 2021

Project Title: Investigation of Wind Effects on Bridges Induced by Tornadoes for Tornado-Resistance Design – Phase I
Budget: \$37,500
Agency: Mid-America Transportation Center. USDOT
Researchers: **PI: Guirong Yan** (90% Credit)
Year(s): Jan. 2019-Aug. 2020

Project Title: REU Supplemental Award of “Damage and Instability Detection of Civil Large-scale Space Structures under Operational and Multi-hazard Environments based on Change in Macro-geometrical Patterns/Shapes”
Budget: \$10,000
Agency: National Science Foundation, Structural and Architectural Engineering program, Award No.: 1639718
Researchers: **PI: Guirong Yan** (100% Credit)
Year(s): May 2016-May 2017

Project Title: Creating Risk Awareness of Tornado Disasters to Increase Homeowners’ Preparedness and Property Reinforcement through Virtual Reality Animation
Budget: \$7,500

Agency: Center for Science, Technology, and Society at Missouri S&T. Project No.: 69A3551747107

Researchers: **PI: Guirong Yan** (67% Credit); Co-PIs: Nancy Stone, Fiona Nah and Hongxian Zhang

Year(s): Jan. 2019-Dec. 2019

Project Title: The role of insurance in a tornado-impacted community

Budget: \$2,500

Agency: National Science Foundation and Federal Emergency Management Agency through The Natural Hazards Center: Mitigation Matters Research Program

Researchers: **Co-PI: Guirong Yan** (50% Credit). PI: Ji Yun Lee (Washington State U.)

Year(s): Jan. 2020-Dec. 2020

Project Title: Transforming Wind Tunnel Testing by Developing Surface-mountable Polymer Pressure Sensors

Budget: \$10,000

Agency: NASA EPSCoR Program

Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): Sept. 2017-Dec. 2018

Project Title: Determine the Design Tornadic Wind Loads on Structures Using Straight-line Wind Tunnel Testing and CFD Simulation

Budget: \$45,938

Agency: University of Missouri Research Board

Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): Nov. 2016-Dec. 2018

Project Title: Research on tornado flow characteristics and their effects on wind loadings

Budget: \$5500 for building models and travel and 20 days of wind tunnel testing (\$20,000 in-kind)

Agency: Tokyo Polytechnic University

Researchers: **PI: Guirong Yan** (100% Credit)

Year(s): June 2019-May 2020

Project Title: Collaborative Research: Understanding multi-scale reinforcement of carbon fibre composites

Budget: AU\$381,000

Agency: Australian Research Council Discovery Project

Researchers: **PI: Guirong Yan** (50% Credit) (Leading PI: Liyong Tong)

Year(s): Jan. 2013-Dec. 2015

Project Title: Experimental Validation of Novel Embedded Diagnostics Wireless Structural Monitoring Systems

Budget: \$42,540

- Agency:** National Science Foundation, NEES program. Subaward through Stanford University
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Sept. 2013-June. 2015
- Project Title:** Highly efficient model updating for structural condition assessment of large-scale bridges
- Budget:** \$45,000
- Agency:** USDOT through University Transportation Center
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Jan. 2013-Jul. 2014
- Project Title:** Involving Hispanic Undergraduate Students into Earthquake Engineering Research
- Budget:** \$4,000
- Agency:** National Science Foundation, NEES program. Subaward through Purdue University
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Nov. 2013-Jun. 2014
- Project Title:** Innovative Condition Assessment of Bulk Storage Structures Using Comprehensive Monitoring Approaches
- Budget:** \$5,000
- Agency:** University Research Institute (UTEP)
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Sept. 2012-Aug. 2013
- Project Title:** Wireless Sensor Networks for Structural Health Monitoring and Damage
- Budget:** AU\$90,000
- Agency:** Internal Research Funds (UWS)
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Aug. 2010-Aug. 2012
- Project Title:** Australian-Chinese Research Collaboration on Structural Health Monitoring and Damage Detection for Steel-concrete Composite Structures Using Fibre Optical Sensing
- Budget:** AU\$17,000
- Agency:** International Research Initiatives Scheme (UWS)
- Researchers:** **PI: Guirong Yan** (100% Credit)
- Year(s):** Jul. 2010-Jul. 2011
- Project Title:** Damage Identification Methods of Non-linear Structures and Their Applications on Detecting Damage Caused by Earthquake
- Budget:** US\$35,000

Agency: National Natural Science Foundation of China
Researchers: **PI: Guirong Yan** (100% Credit)
Year(s): Jan. 2008-Dec. 2010

Project Title: Structural Damage Detection Methods and Condition Assessment Theory
Based on Strong-motion Records

Budget: US\$15,000
Agency: Post-doc Starting Foundation of China
Researchers: **PI: Guirong Yan** (100% Credit)
Year(s): Nov. 2006-Nov. 2008

Project Title: Damage Detection Methods for Civil Engineering Structures under Strong
Earthquake

Budget: US\$5,000
Agency: Post-doc Science Foundation of China
Researchers: **PI: Guirong Yan** (100% Credit)
Year(s): Sept. 2007-Sept. 2008

INVITED SEMINARS (38 in total)

1. “Live in Harmony with Natural Hazards”, Osher lifelong learning Institute. University of Missouri Extension, Apr. 14, 2021
2. “Extreme Winds and their Interactions with Civil Structures”, Osher lifelong learning Institute. University of Missouri Extension, June 8, 2021
3. “Live in Harmony with Natural Hazards”, Global Learning Series of Missouri University of Science and Technology, Apr. 7, 2021
4. “Live in Harmony with Tornadoes”, University of Missouri system Engagement and Outreach, Oct. 30, 2020
5. “WHAM Research: What Flow Structure of Tornado Should We Design Against?” International Wind Engineering Seminar 1 organized by International Association of Wind Engineering, Oct. 8, 2020
6. “WHAM research and Funding Opportunities for Community Resilience”, The Center for Science, Technology, and Society meeting, May 11, 2020
7. “WHAM research: Tame Winds to Achieve Community Resilience”, Shanghai University, Dec 20, 2019
8. “WHAM research: Tame Winds to Achieve Community Resilience”, Tongji University, Dec 19, 2019
9. “WHAM research: Tame Winds to Achieve Community Resilience”, Harbin University of Technology, Shenzhen, Dec 17, 2019
10. “WHAM research: Tame Winds to Achieve Community Resilience”, Shenzhen University, Dec 16, 2019
11. “WHAM research: Tame Winds to Achieve Community Resilience”, Wuhan University of Technology, Dec 13, 2019
12. “WHAM research: Tame Winds to Achieve Community Resilience”, Wuhan University, Dec 12, 2019

13. “WHAM research: Tame Winds to Achieve Community Resilience”, Beijing University of Technology, Dec 11, 2019
14. “WHAM research: Tame Winds to Achieve Community Resilience”, Peking University, Dec 10, 2019
15. “WHAM research: Tame Winds to Achieve Community Resilience”, Tsinghua University, Dec 9, 2019
16. “WHAM research: Tame Winds to Achieve Community Resilience”, PSMRC Industry Project Review & IAB Meeting, Dec 4, 2019
17. “WHAM research: Tame Winds to Achieve Community Resilience”, Center for Infrastructure Engineering Studies Seminar, Missouri University of Science and Technology, Nov 14, 2019
18. “Strong Winds and Wind-Resist Design in the USA”, Harbin Engineering University, Harbin, China, July, 2019.
19. “Make Tornado Alley a Safer Place to Live”, National Oceanic and Atmospheric Administration (NOAA), Norman, OK, March, 2019.
20. “Make Tornado Alley a Better Place to Live”, National Institute of Standards and Technology (NIST), Washington D.C., March, 2018.
21. “Simulation of Tornadic Wind fields and Wind Effects Induced by Tornadoes”, Tongji University, Shanghai, China, June, 2018.
22. “Help Insurance Companies Properly Price Premium by Predicting Tornado Induced Damage”, Berkshire Hathaway Specialty Insurance, San Francisco, August, 2018.
23. “Tornadic Wind Effects on Large-scale Dome Structures”, Southeast University, Nanjing, China, July, 2018
24. “Towards Tornado-resistant Design”, Shanghai Municipal Building and Architecturing Engineering Company, Shanghai, China, July, 2018.
25. “CFD Simulation of Tornadic Wind fields”, Suzhou University of Science and Technology Suzhou, China, July, 2018.
26. “Condition Assessment and Hazard Mitigation for Sustainable and Resilient Civil Structures”, Tokyo Polytechnic University, Tokyo, Japan, May, 2016.
27. “Detection of Individual Member Buckling”, Southeast University, Nanjing, China, May, 2016.
28. “Condition Assessment and Hazard Mitigation for Sustainable and Resilient Civil Structures”, University of Missouri at Columbia, May, 2016.
29. “Detection of Snap-through Instability of Dome Structures” Nanjing Technology University, Nanjing, China, May, 2016.
30. “Detection of Instability of Civil Large-scale Space Structures,” 4th International Transportation Infrastructure Conference, St. Louis, MO, December, 2015.
31. “Condition Assessment and Multi-hazard Mitigation of Long-span Structures”, Hongkong Polytechnic University, Hongkong, July, 2015.
32. “Condition Assessment of Long-span Structures”, Missouri Department of Transportation, Jefferson City, February, 2015
33. “Damage and Instability Detection of Large-scale Space Structures”, Hunan University, Hunan, China June, 2015

34. “Detection of Instability of Civil Space Structures”, Harbin Institute of Technology, Harbin, China, June, 2015
35. “Buckling detection in Space-grid Structures”, Harbin Engineering University, Harbin, China, June, 2015
36. “Smart, Resilient Long-span Structures”, CIES, Missouri S&T, November, 2014
37. “Smart Long-span Structures for Multi-hazard Resilience”, Oregon State University, June, 2014
38. “Smart Bridges for Multi-hazard Resilience and Rapid Response”, SUNY-Buffalo, March, 2014.

POST-DOC MENTORING AND STUDENT SUPERVISION

Completed Graduate Students

- [1] Zhi Li, PhD student, “Studies on Tornado-structure Interactions and Guidance on Design Tornadic Wind Loading”, from August 2016 to July 2021.
- [2] Ryan Honerkamp, PhD student, “Reveal Wind Loading of Tornadoes and Hurricanes on Civil Structures Towards Hazard-Resistant Design”, from June 2018 to May 2021.
- [3] Tiantian Li, PhD student, “Dynamic structural responses of civil large-scale space structures induced by tornadoes through simulation of two-way wind-structure interaction”, from January 2017 to May 2019.
- [4] Assa Samoura, Master student, starting in January, 2020, expected completion in June 2021.
- [5] Niyonzima Etienne, Non-thesis Master Student, Research assistant at WHAM, “Testing in the small-scale tornado simulator of WHAM Lab”, from June 2017 to May 2019.
- [6] Grady Cooper, Master student, starting in January, 2020, from August 2019 to June 2021.

Current Graduate Students

- [1] Yi Zhao, PhD student, “CFD simulation of tornadoes with multiple vortices and their wind effects on civil structures”, starting in January, 2016, expected completion in May 2022 (He completed his comprehensive exam on April 17, 2019).
- [2] Jiamin Dang, PhD student, “Simulation of storm surge and their actions on civil structures for coastal community resilience”, starting in August, 2021, expected completion in December 2024
- [3] Hunter Boswell, Master Student, “High-fidelity simulation of the actions of storm surge on civil structures by considering wind-wave interaction”, starting in January, 2021, expected completion in December 2021.

Current Undergraduate Research Students

- [1] Craig Dun, Undergraduate research assistant, “Assembly of the large-scale torando simulator”, from March 2021 to present.
- [2] Emilie M. Esswein, Undergraduate research assistant, “Lessons learned from real-world tornadoes”, from January 2019 to present.
- [3] Drazen Gonzalez-Tirado, Undergraduate research assistant, “Construction of laboratory tornado simulator at WHAM lab”, from January 2019 to present
- [4] Caleb Fink, Undergraduate research assistant, “High-fidelity simulation of tornadoes by combining CM1 and CFD”, from March 2021 to present.

Previous Post-docs

- [1] Dr. Fangping Yuan, “CFD simulation of laboratory tornado simulator and real-world tornadoes”, from September 2016 to May 2017.
- [2] Dr. Yao Cheng, “Uncertainty quantification of CFD simulations of tornadic wind fields”, from June 2017 to October 2018.
- [3] Dr. Tiantian Li, “Improve tornado risk awareness using virtual reality animation”, July 2019 to June 2020.

Previous PhD Students at Missouri S&T

- [1] Tiantian Li, PhD student, “Dynamic structural responses of civil large-scale space structures induced by tornadoes through simulation of two-way wind-structure interaction”, from January 2017 to May 2019.
- [2] Yunyue Cong, visiting PhD student from Hunan University, “Nonlinear vibration of bridge cables under extreme winds”, from September 2019 to September 2020.

Previous Undergraduate Students at Missouri S&T

- [1] Ryan Honerkamp, Undergraduate research assistant, “Design and Building a laboratory tornado simulator and lab testing”, from May 2016 to April 2018.
- [2] Niyonzima Etienne, Undergraduate research assistant at Missouri S&T, “Construction of a small-scale tornado simulator”, from May 2016 to May 2017.
- [3] Scott Jemison, Undergraduate research student, “Damage detection of cable-net structures”, from January 2015 to May 2015.
- [4] Melisa Morrison, Undergraduate research student, “Investigation of stress induced by fabrication/installation errors”, from January 2015 to May 2015.
- [5] Celena M. McElroy, Undergraduate research assistant, “System identification of a Mobius-strip structure”, from May 2016 to May 2019
- [6] Christopher Catron, Undergraduate research assistant, “Wind characteristics of real-world tornadoes”, from January 2017 to May 2017
- [7] Jillian Anderson, Undergraduate research assistant, “Study of behavior of real-world tornadoes”, from September 2017 to May 2018
- [8] Emily Hutcheson, Undergraduate research assistant, “Radar measurement of velocity in tornadic wind field”, from August 2018 to December 2018
- [9] Yiming Jin, Undergraduate research assistant, “Collecting perishable data in the wake of Jefferson City, MO tornado of 22 May 2019”, from January 2019 to August 2019.

Previous PhD students at UTEP (Dr. Yan left UTEP in August, 2014)

- [1] Chen Fang, PhD student, “Detection of instability of space structures”, from May 2013 to August 2014 (He continued to study at UTEP with Dr. Cesar Carrasco and graduated with a Master degree in May 2015).
- [2] Jianxin Yu, PhD student, “Damage detection of space structures using change in fractal pattern”, from May 2013 to August 2014 (He continued to study at UTEP as a PhD student with Dr. Reza Ashtiani in Civil Engineering).
- [3] Jiarui Yi, PhD student, “Energy harvesting using smart materials”, from September 2013 to

August 2014. (He continued to study at UTEP as a PhD student with Dr. Miguel Velez-Reyes in Electrical Engineering).

TEACHING

Undergraduate Courses Taught at Missouri S&T

CE/ArchE 3210 Structural Design in Metals, Fall 2014 (53 students. Teaching Evaluation: 2.80/4)
CE/ArchE 3210, Spring 2015 (46 students. Teaching Evaluation: 3.21/4)
CE/ArchE 3210, Fall 2015 (51 students. Teaching Evaluation: 3.27/4)
CE/ArchE 3210, Spring 2016 (31 students. Teaching Evaluation: 2.90/4)
CE/ArchE 3210, Fall 2016 (40 students. Teaching Evaluation: 3.21/4)
CE/ArchE 3210, Spring 2018 (62 students. Teaching Evaluation: 3.10/4)
CE/ArchE 3210, Fall 2018 (58 students. Teaching Evaluation: 3.00/4)
CE/ArchE 3210, Spring 2019 (51 students. Teaching Evaluation: 3.46/4)
CE/ArchE 3210, Fall 2019 (53 students. Teaching Evaluation: 3.19/4)
CE/ArchE 3210, Fall 2020 (52 students. Teaching Evaluation: 3.32/4)
CE/ArchE 3210, Spring 2021 (56 students. Teaching Evaluation: 3.48/4)

Graduate Courses Taught at Missouri S&T

CE/ArchE 5001 Special topics: Wind Engineering, Fall 2017 (11 students. Teaching Evaluation: 3.62/4)
CE/ArchE 5001 Special topics: Wind Engineering, Spring 2019 (20 students. Teaching Evaluation: 3.10/4)
CE/ArchE 5209 Wind Engineering, Spring 2021 (9 students. Teaching Evaluation: 3.10/4)

Undergraduate Courses Taught at UTEP

CE 3343 Structural Analysis I, Fall 2012 (45 students. Teaching Evaluation: 4.90/5)
CE 3343 Structural Analysis I, Spring 2013 (48 students. Teaching Evaluation: 4.70/5)
CE 3343 Structural Analysis I, Fall 2013 (25 students. Teaching Evaluation: 4.70/5)
CE 3343 Structural Analysis I, Spring 2014 (22 students. Teaching Evaluation: 4.80/5)

Graduate Courses Taught at UTEP

CE 5318 Bridge Engineering, Fall 2013 (19 students. Teaching Evaluation: 5/5)
CE 5305 Advanced Structural Analysis, Spring 2014 (19 students. Teaching Evaluation: 4.50/5)

PROFESSIONAL ACTIVITIES

- **Associate Editor** of Advances in Structural Engineering (Jan. 2020-present)
- **Associate Editor** of Journal of Vibration Testing and System Dynamics (Jan. 2018-present)
- **Review Editor** of Structural Sensing, Frontiers in Built Environment (Jan. 2016-present)
- **Review Editor** of Wind Engineering and Science, Frontiers in Built Environment (Jun. 2017-present)
- **Review Editor** for Bridge Engineering, Frontiers in Built Environment (Mar. 2020-present)

- **Reviewer for the following 17 journals**

Journal of Wind Engineering and Industrial Aerodynamics
ASCE Journal of Engineering Mechanics
ASCE Journal of Bridge Engineering
ASCE Journal of Structural Engineering
Mechanical Systems and Signal Processing
Journal of Sound and Vibration
Smart Materials and Structures
Structural Health Monitoring
Shock and Vibration
Structural Control and Health Monitoring
Smart Structures and Systems, an Int. Journal
Advances in Structural Engineering
Journal of Sustainable Cities and Society
IEEE Sensors Journal
Computer-Aided Civil and Infrastructure Engineering
International Journal of Steel Structures
Journal of Applied Mathematics

- **Funding Application Reviewer**

National Science Foundation, USA
Natural Sciences and Engineering Research Council, Canada
Australian Research Council, Australia
National Science Foundation, China

- **Conference Committees**

Organizing Committee, The SHMII-9 Conference on August 4-7, 2019, in St. Louis
Scientific Committee, The 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Turin, Italy, 1- 3 July 2015
Co-Chair of the Symposium of Smart Disaster Prevention/Mitigation Based on Novel Materials/Devices/Structures/Systems, The 6th JSME/ASME 2017 International Conference on Materials and Processing (ICM&P2017)

PROFESSIONAL AFFILIATIONS

- Chair of Board of Directors of North American Alliance of Hazards and Disaster Research Institutes (NAAHDRI) (June 2021-present)
- Global Alliance of Disaster Research Institutes (GADRI) (June 2021-present)
- ASCE Structural Wind Engineering Committee, Member (2015-present)
- American Association of Wind Engineering, Member
- National Institute of Building Sciences, Member (2020-present)
- North American Alliance of Hazards and Disasters Research Institutes, Member (2018-present)
- North American Alliance of Hazards and Disasters Research Institutes, Research Committee Member (2020-present)

- American Society of Civil Engineering, Member (2012-present)
- American Society of Engineering Education, Member
- Official Member of Structural Extreme Events Reconnaissance Network (Level 3)
- Primary member, International Bridge Association
- Technical committee member, SMASIS SHM/NDE
- International Members of a research committee in the JSME M&P Division (The Japan Society of Mechanical Engineers, Materials and Processing Division). Technical Section: Systems for Disaster Mitigation and Sustainability

UNIVERSITY, DEPARTMENT AND COMMUNITY SERVICE

- Founded Center for Hazard Mitigation and Community Resilience in 2021, with the \$100,000 donation from the Sinquefeld family as the founding fund and 35 faculty members from 12 departments affiliated.
- Founded the Wind Hazard Mitigation (WHAM) Laboratory that houses the largest laboratory tornado simulator in the USA that can produce translating tornadic wind flow.
- Community service: Lead a team of WHAM members and three other faculty members as well as their students to evaluate damage in the wake of the Jefferson City, MO tornado of 22 May 2019
- Delivered a TED^X talk titled as “Make Tornado Alley a Better Place to Live” on March 15, 2018. This talk was to encourage the entire community to be proactive in either reinforcing their houses or building more tornado-resistant houses, and to work together to achieve tornado-resilient communities.
- Coordinator of Structures Group in the Department (January 2021-present)
- Serve CE Program Committee CE-UPC in the Department (2018-present)
- Serve Scholarship Committee in the Department (2018-present)
- Serve as a judge for the 10th Annual Graduate Fellows Poster Session on February 25, 2019
- Advise about 20 undergraduate students each year
- Serve the PhD advising committees for 13 PhD students working with other professors
- Serve the Master advising committees for 6 Master students working with other professors
- Supervise senior design (such as, Chris Lepsky, Emergency Operations Center St. Charles County, O’Fallon, MO, in Fall 2017; Andrew Granich, Tornado-resistant design, in Spring 2018; Matthew J. Leigh, in Spring 2018; Grady L. Cooper, in Fall 2019)
- Serve a faculty search committee for the Assistant Professor position in Structural Engineering in Spring 2016
- Serve a faculty search committee for the NTT Assistant Professor position in Architectural Engineering in Spring 2016
- Attended the department open house (did presentation for Civil Engineering) in Nov, 2015
- Give a talk for Chi Epsilon in October, 2015
- Outreach girls at the Havener Center in April, 2015
- Outreach girls in our WHAM lab in June 2015
- Open WHAM lab to the students from Presbyterian School on March 8, 2017

- Develop and participate “Rescue the Bridge” outreach for INSPIRE UTC Expanding Your Horizons Conference on Nov 17, 2017
- INSPIRE UTC and MATC outreach on February 24, 2018. “NSBE High School Visit Weekend-Bridge Competition and Driving Simulator Showcase”
- INSPIRE UTC and MATC outreach on July 17, 2018
- Community outreach “Build a tornado-resilient community” on July 18, 2018
- Extreme weather outreach to 100 first-grade students Wyman Elementary School on December 3 and 4, 2018
- Outreach potential future female engineers through Missouri S&T summer campers “Girls Save the Planet!” on July 16, 2019
- Open WHAM lab for the Expanding Your Horizons (EYH) Event on Friday November 15, 2019 for INSPIRE UTC
- Extreme weather outreach to 98 first-grade students Wyman Elementary School on December 12 and 13, 2019
- Attend reception of welcoming potential students as the Civil Engineering representative on January 31, 2020
- Serve a faculty search committee for the Assistant Professor position in Aerospace Engineering in Spring 2020
- Mentoring junior faculty members to improve their research proposals (May 2020-present).
- Serve Fan Zhang’s PhD advising committee (Dr. Myer’s student; From 2019)
- Serve Amro H. Ramadan’s PhD advising committee (Dr. Elgawady’s student; Graduated in 2020)
- Serve Tousif Mahmood’s PhD advising committee (Dr. Elgawady’s student; Graduated in 2021)
- Serve campus Engagement Council (August 2020-present).
- Contributed to “A Roadmap to Resilience Incentivization” published on August 19, 2020 by NIBS and Multi-Hazard Mitigation Council (MMC), as part of Committee on Finance, Insurance, and Real Estate (CFIRE) (August 2020-present).
- Serve the Kummer Institute Research Advisory Committee (October 2020-present).
- Serve Keenan McBurney’s Master advising committee (Dr. Sneed’s student from 2021)
- Serve the Scientific Committee of the 14th Americas Conference on Wind Engineering (ACWE), on May 17 – 19, 2022 in Lubbock, TX
- Serve the Research Committee of NAAHDRI (Nov 2020-present)
- Serve the Policy Advocacy Committee of NAAHDRI (May 2021-present)
- Serve the organizing committee for Global Alliance of Disaster Research Institutes (GADRI) Global Summit (May 2021-present)
- Coordinator of Structures Group in the Department (January 2021-present)
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CAREER DEVELOPMENT

- Attended “Making the Leap to Large” organized by NSF in Spring, 2021