Kurtis R. Gurley

University of Florida
Department of Civil and Coastal Engineering
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EDUCATION

Ph.D., Civil Engineering May 1997
University of Notre Dame, Notre Dame, IN
Dissertation: *Modeling and Simulation of Non-Gaussian Processes*

M.S., Civil Engineering January 1994
University of Notre Dame, Notre Dame, IN
Thesis: *Stochastic Response of a Tension Leg Platform to Wind and Wave Fields*

B.S., Aeronautical and Astronautical Engineering May 1991
University of Illinois, Urbana-Champaign, IL

PROFESSIONAL EXPERIENCE

Interim Director:	University of Florida, Engineering School of Sustainable Infrastructure & Environment. May 2025 – present
Associate Director:	University of Florida, Engineering School of Sustainable Infrastructure & Environment. Primary role is early faculty development – grants, mentoring, teaching: 2016 – present
Professor*:*	University of Florida, Dept. of Civil and Coastal Engineering, September 2016 – present
Associate Director:	Co-PI: NSF NHERI boundary layer wind tunnel shared use facility. Lead - business development and outreach: 2015 - present
Associate Professor*:*	University of Florida, Dept. of Civil and Coastal Engineering, May 2003 – August 2016
Assistant Professor*:*	University of Florida, Dept. of Civil and Coastal Engineering, August 1997 - May 2003

RESEARCH INTERESTS

- Probabilistic natural hazard vulnerability modeling and damage mitigation
- Wind engineering, random vibration, stochastic simulation, structural reliability
- STEM Outreach for experimental wind engineering – K-12

COMMITTEES / SERVICE / PROFESSIONAL DEVELOPMENT

- NIST National Construction Safety Team Advisory Committee: 9/2024 – 8/2027
- Associate Editor for ASCE Structures - Wind Effects Committee (July 2003 - present)
- Associate Editor, Frontiers in Built Environment: 2015 – present
- Guest Associate Editor for Reliability Engineering & System Safety (2023 - 2025)

- American Association of Wind Engineering (AAWE) – Board member (2007 - 2010)
- ASCE Journal of Engineering Mechanics - Probabilistic methods committee member
- ASCE / SEI Wind Effects Committee
- NSF – Review Panel Member (multiple)
- Scholarly Journal Reviews – 300+ reviews for 30 journals
- 13th Americas Conference on Wind Engineering, May 21-24, 2017: Co-Chair
- 2nd American Association for Wind Engineering – Workshop organizer, Aug. 2010
- Florida Hurricane Catastrophe Fund Advisory Council: 2012 – present
- Applied Technology Council: member of Board of Directors. 2011 – 2017
- Academic Personnel Board UF: Spring 2024 – current
- HWCOE Research Advancement Committee (RAC) UF – ESSIE representative 2017-current. Aid college ADR with strategy planning and internal proposal reviews
- HWCOE UF T&P Committee: 2017 – 2022

DATA PUBLICATIONS

1. Ojeda-Tuz, M., K. Gurley, M. Shields, M. Chauhan, R. Catarelli (2025). Pressure coefficients on a simple geometry bluff body generated by a randomized terrain in a boundary layer wind tunnel, in *Modeling of Higher-Order Turbulence from Randomized Terrain in a Boundary Layer Wind Tunnel* [Version 2]. DesignSafe-CI. https://doi.org/10.17603/ds2-e7qm-ef64
2. Ojeda-Tuz, M., K. Gurley, M. Shields, M. Chauhan, R. Catarelli, F. Masters. (2023) "Wind Profiles in a Boundary Layer Wind Tunnel based on Different Approach Terrain Configurations", in *Modeling of Higher-Order Turbulence from Randomize Terrain in a Boundary Layer Wind Tunnel*. DesignSafe-CI. https://doi.org/10.17603/ds2-h4pt-d221
3. Gurley, K., F. Masters, T. Reinhold, M. Ojeda, (2021) "Florida Coastal Monitoring Program Hurricanes Report (1999 - 2008)", in *FCMP Ground Level Hurricane Wind Data (1999 - 2008)*. DesignSafe-CI. https://doi.org/10.17603/ds2-j82e-nc21
4. Zhang, T., Ojeda-Tuz, M., Miller, S., Gurley, K. (2021). "Acoustic propagation experiments in a turbulent atmosphere", in Prediction of Long-Range Infrasound Propagation from Tornadoes Based on New Atmospheric Boundary Layer Wind Tunnel Experiments. DesignSafe-CI. https://doi.org/10.17603/ds2-bpav-8w29
5. Gurley, K., Masters, F., Pinelli, J., Chan, V. (2018-08-16), "FCMP Ground Level Hurricane Wind Data: Frances 2004" , DesignSafe-CI [publisher], Dataset, doi:10.17603/DS2V39B DOI: https://doi.org/10.17603/DS2V39B

JOURNAL MANUSCRIPTS IN PREPARATION

1. Torres-Burgos, D.M., Ojeda-Tuz, M.A., Chauhan, M., Catarelli, R., Shields, M., Gurley, K. “Wind Profiles in a Boundary Layer Wind Tunnel from Heterogeneous Terrain.” ASCE JSE

2. Li, S., Gurley, K., Catarelli, R., Ojeda-Tuz, M., Giometto, M. “Experimental Investigation of Flow Field Similarity in Boundary Layer Wind Tunnel Tests with Different Geometric Scaling ratios.”
3. Li, S., Yousefi Anarak*, K., Catarelli, R., Guo, Y., Gurley, K. “Experiments in a Large Boundary Layer Wind Tunnel: Measurement of Turbulent Building Wakes with PIV.”
4. Li, S., Yousefi Anarak*, K., Catarelli, R., Guo, Y., Gurley, K. “Investigation of Turbulence Impact on Spherical Debris Flight using PIV-measured Wind Field.”

JOURNAL MANUSCRIPTS IN REVIEW

1. Chauhan, M.S., Ojeda-Tuz, M., Catarelli, R.A., Gurley, K.R., Shields, M.D. “Active machine learning to control statistical characteristics of flow fields in boundary layer wind tunnel experiments.” Submitted to Journal of Wind Engineering and Industrial Aerodynamics September 2025.
2. Li, S., Yousefi Anarak*, K., Catarelli, R., Guo, Y., Gurley, K., van de Lindt, J. “Experimental Investigation of Compact Debris Flight in Highly Turbulent Wind Field.” Submitted to JWEIA December 2025.

REFEREED JOURNAL PUBLICATIONS

Google Scholar

* coauthor was a graduate student when work conducted

1. Yousefi Anarak*, K., Li, S., Catarelli, R., Guo, Y., Gurley, K., van de Lindt, J. “Validating debris flight model in highly turbulent boundary layer flows using wind tunnel testing,” Advances in Wind Engineering, 2(3), September 2025. https://doi.org/10.1016/j.awe.2025.100073
2. Li, S., Yousefi Anarak*, K., Catarelli, R., Guo, Y., Gurley, K., van de Lindt, J. “A Novel Wind Tunnel Testing Method for Debris Flight in Turbulent Winds,” JWEIA 265 106183, July 2025. https://doi.org/10.1016/j.jweia.2025.106183
3. Ojeda-Tuz*, M., Chauhan*, M., Fernández-Cabán, P., Catarelli, R., Shields, M., Gurley, K. “Modulating higher-order statistics of turbulent boundary layer wind fields using randomized grid roughness,” JWEIA 261 106042, June 2025. https://doi.org/10.1016/j.jweia.2025.106042
4. Pinyochotiwong*, Y., Catarelli, R.A., Chen, T., Phillips, B.M., Masters, F.J., Bridge, J.A., Gurley, K.R. “Advancements in the physical simulation of near-surface extreme wind phenomena using hybrid active-passive flow control in a large boundary layer wind tunnel,” JWEIA 259 105997, April 2025. https://doi.org/10.1016/j.jweia.2024.105997
5. Khaled*, F., Lombardo, F., Gurley, K. Elawady, A. “Modeling of vortices in straight-line wind simulators”, JWEIA 257 105992, February 2025. https://doi.org/10.1016/j.jweia.2024.105992

6. Li, S., Catarelli, R., Phillips, B., Bridge, J., Gurley, K. "Physical Simulation of Downburst Winds for Civil Structures: A Review," JWEIA 254 105900. November 2024. https://doi.org/10.1016/j.jweia.2024.105900.
7. Li, S., Gurley, K., Guo, Y, van de Lindt, J. "Numerical Investigation of Turbulence Effect on Flight Trajectory of Spherical Windborne Debris: A Multi-Layered Approach," Probabilistic Engineering Mechanics, Vol. 77, page 103661. July 2024 https://doi.org/10.1016/j.probengmech.2024.103661
8. Wei*, Z., Pinelli, J.P., Gurley, K., Hamid, S. "Multi-Hazard Vulnerability Modeling: An Example of Wind and Rain Vulnerability of Mid/High-Rise Buildings during Hurricane Events," Wind and Structures, Vol. 38, Number 5, pages 355-366. May 2024. DOI: https://doi.org/10.12989/was.2024.38.5.355
9. Chauhan*, M., Ojeda-Tuz*, M., Catarelli, R., Gurley, K., Tsapetis, D., Shields, M.D. "On Active Learning for Gaussian Process-based Global Sensitivity Analysis," Reliability Engineering and System Safety, (Vol. 245, p. 109945), May 2024. https://doi.org/10.1016/j.ress.2024.109945
10. Wei*, Z., Pinelli, J.P., Gurley, K. "Component-Based Hurricane Vulnerability Model for Mid/High-Rise Commercial Residential Buildings," International Journal of Disaster Risk Reduction, 100, January 2024. https://doi.org/10.1016/j.ijdrr.2023.104222
11. Wei*, Z., Pinelli, J.P., Gurley, K., Hamid, S., Flannery, G. "Component-Based Estimation of Recovery Time and Time-Related Expenses after Hurricane Events," Frontiers in Built Environment, Volume 9 – 2023 https://doi.org/10.3389/fbuil.2023.1295619
12. Xu*, H., Grigoriu, M.D., Gurley, K.R. "A Novel Surrogate for Extremes of Random Functions," Reliability Engineering & System Safety, Volume 239, November 2023. https://doi.org/10.1016/j.ress.2023.109493
13. Shields, M.D., Gurley, K., Catarelli, R., Chauhan*, M., Ojeda-Tuz*, M., and Masters, F.J. "Active Learning Applied to Automated Physical Systems Increases the Rate of Discovery," Scientific Reports, 13:8402, 2023. https://doi.org/10.1038/s41598-023-35257-7
14. Bedwell*, C., Gurley, K., Pinelli, J.P., Silva De Abreu, R.V. "The Influence of ASCE 7-16 Wind Load Provisions on a Vulnerability Model of Florida Residential Construction," Frontiers in Built Environment, November 2022, https://doi.org/10.3389/fbuil.2022.1018207.
15. Zhang*, T., Ojeda-Tuz*, A.A., Gurley, K.R., and Miller, A.A.E. (2022) "Experiments in a Large Boundary Layer Wind Tunnel: Propagation of Noise through the Turbulent Boundary Layer", ASCE JSE, 148 (5). DOI: 10.1061/(ASCE)ST.1943-541X.0003275. Editor's Choice May 2022 https://ascelibrary.org/journal/jsendh
16. Paleo-Torres*, A., Zhao, M., Gurley, K., Pinelli, J.P., and Baradaranshoraka, M., (2021). "Modeling the influence of flood mitigation measures on the vulnerability of coastal residential construction", Natural Hazards Review, 22 (4). 10.1061/(ASCE)NH.1527-6996.0000507.

17. Berman, J.W., Wartman, J., Olsen, M., Irish, J., Miles, S., Tanner, T., Gurley, K., Lowes, L., Bostrom, A., Dafni, J., Grilliot, M., Lyda, A., and Peltier, J. (2020). "Natural Hazards Reconnaissance with the NHERI RAPID Facility" Frontiers in Built Environment, Vol 6.
18. Wartman, J., Berman, J.W., Bostrom, A., Miles, S., Olsen, M., Gurley, K., Irish, J., Lowes, L., Tanner, T., Dafni, J., Grilliot, M., Lyda, A., and Peltier, J. (2020). "Research Needs, Challenges, and Strategic Approaches for Natural Hazards and Disaster Reconnaissance." Frontiers in Built Environment, Vol 6.
19. Catarelli, R.A., Fernández-Cabán, P.L., Phillips, B., Bridge, J.A., Masters, F.J., Gurley, K.R., Prevatt, D.O. (2020) "Automation and New Capabilities in the University of Florida NHERI Boundary Layer Wind Tunnel", Frontiers in the Built Environment, Vol 6.
20. Catarelli, R.A., Fernández-Cabán, P.L., Masters, F.J., Bridge, J.A., Gurley, K.R., Matyas, C.J. (2020) "Automated terrain generation for precise atmospheric boundary layer simulation in the wind tunnel", Journal of Wind Engineering and Industrial Aerodynamics, Vol 207. https://doi.org/10.1016/j.jweia.2020.104276
21. Andres Paleo-Torres*, Kurt Gurley, Jean-Paul Pinelli, Mohammad Baradaranshoraka, Mingwei Zhao, Anawat Suppasri and Xinlai Peng, "Vulnerability of Florida residential structures to hurricane induced coastal flood", Engineering Structures 2020. https://doi.org/10.1016/j.engstruct.2020.111004
22. J.-P. Pinelli, Josemar Da Cruz*, K. Gurley, A. Paleo-Torres, M. Baradaranshoraka, S. Cocke & D.-W. Shin, "Uncertainty reduction through data management in the development, validation, calibration, and operation of a hurricane vulnerability model," International Journal of Disaster Risk Science, 11(6), 2020. https://doi.org/10.1007/s13753-020-00316-4
23. Kennedy A., Copp, A., Florence M., Gradel, A., Gurley K., Janssen M., Kaihatu J., Krafft D., Lynett P., Owensby M., Pinelli J.-P., Prevatt D., Rogers S., Roueche D., Silver, Z. (2020)."Hurricane Michael in the Area of Mexico Beach, Florida," Journal of Waterway, Port, Coastal, and Ocean Engineering, ASCE, Reston, VA. 146(5) https://bit.ly/ufWIND-16-2020. DOI: 10.1061/(ASCE)WW.1943-5460.0000590
24. Jianqiao Tian*, Kurtis R. Gurley, Maximillian T. Diaz, Pedro L. Fernandez-Caban, Forrest J. Masters, Ruogu Fang, 2020. "Low-Rise Gable Roof Buildings Pressure Prediction using Deep Neural Networks," JWEIA. https://doi.org/10.1016/j.jweia.2019.104026
25. DeMello, N. *, Smith, J., Bridge, J., Consolazio, G., Gurley, K. "Investigation of aerodynamic shielding between traffic control attachments and mast-arm support structures," Engineering Structures, 201, 2019 https://doi.org/10.1016/j.engstruct.2019.109784
26. Zhao*, H., Grigoriu, M. and Gurley, K.R. "Translation processes for wind pressures on low-rise buildings," Journal of Wind Engineering and Industrial Aerodynamics, 184, 405-416, January 2019, https://doi.org/10.1016/j.jweia.2018.12.007
27. Baradaranshoraka, M., Pinelli, J.-P., Gurley, Zhao, M., K., and Peng, X.,

"Characterization of Coastal Flood Damage States for Residential Buildings," ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, 5(1): 04019001, March 2019. DOI: 10.1061/AJRUA6.0001006

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29. Baradaranshoraka*, M., Pinelli, J-P, Gurley, K., Peng, X., Zhao, M. "Hurricane wind versus storm surge damage in the context of a risk prediction model," ASCE Journal of Structural Engineering,Volume 143 Issue 7 - July 2017. DOI: 10.1061/(ASCE)ST.1943-541X.0001824
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31. Harper*, S.H., Edwards*, S.T., Consolzaio, G.R., Gurley, K.R. *"Drag Coefficients for Construction-Stage Stability Analysis of Bridge Girders Under Wind Loading,"* ASCE Journal of Bridge Engineering, 22(1), January 2017. DOI: 10.1061/(ASCE)BE.1943-5592.0000988
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35. Huang, G., Luo, Y., Gurley, K.R., Ding, J. "Revisiting moment-based characterization for wind pressures," Journal of Wind Engineering and Industrial Aerodynamics, 151: 158-168, April 2016. DOI: 10.1016/j.jweia.2016.02.006
36. Yang*, L., Gurley, K.R. *"Efficient stationary multivariate non-Gaussian simulation based on a Hermite PDF model,"* Probabilistic Engineering Mechanics, 42: 31-41, October 2015. https://doi.org/10.1016/j.probengmech.2015.09.006
37. Pita, G., Pinelli, J.P., Gurley, K., Mitrani-Reiser, J. "*State of the Art of Hurricane Vulnerability Estimation Methods: A Review*," ASCE Natural Hazards Review, 16(2):16 pages, May 2015.
38. Smith*, D.J., Masters, F.J., Gurley, K.R. "*An Historical Perspective on the Wind Resistance of Clay and Concrete Roofing Tiles,"* Interface: The Journal of RCI, November 2014, Vol. 32 (10), 22-35
39. Dixon*, C.R., Masters, F.J., Prevatt, D.O., Gurley, K.R. "*Wind uplift resistance of artificially and naturally aged asphalt shingles*," Journal of Architectural

Engineering, 20(4), 2014.

40. Laboy-Rodriguez*, S.T., Gurley, K.R., Masters, F.J. "*Revisiting the Directionality Factor in ASCE 7*," JWEIA, 133:225-233, Oct 2014. DOI: 10.1016/j.jweia.2014.06.011
41. Li*, R., Chowdhury, A.G., Bitsuamlak, G., Gurley, K.R. "*Wind effects on roofs with high-profile tiles: an experimental study*," Journal of Architectural Engineering, 20(4), 2014.
42. Dixon*, C.R., Masters, F.J., Prevatt, D.O., Gurley, K.R., Brown, T.M., Peterka, J.A., Kubena, M.E. "*The influence of unsealing on the wind resistance of asphalt shingles*," Journal of Wind Engineering and Industrial Aerodynamics, 130: 30-40, 2014.
43. Peng*, X., Yang*, L., Gavanski, E., Gurley, K., Prevatt, D. "*A comparison of methods to estimate peak wind loads on buildings*," Journal of Wind Engineering and Industrial Aerodynamics, 126: 11-23, 2014.
44. Torkian*, B.B., Pinelli, J.P., Gurley, K. and Hamid, S. "*Cost and benefit evaluation of windstorm damage mitigation techniques in Florida*,", ASCE Natural Hazards Review, 15(2): 150-157, 2014.
45. Prevatt, D.O., Shreyans*, S., Kerr*, A., and Gurley, K.R. *"In-situ nail withdrawal strengths in wood roof structures,"* ASCE Journal of Structural Engineering, 140(5), 2014.
46. Park*, Y.J., Glagola, C.R., Gurley, K.R., Son, K. *"Performance Assessment of the Floridian Electric Power Network System Against Hurricanes,"*, ASCE Natural Hazarads Review, 15(3): August, 2014.
47. Yang*, L., Gurley, K.R., and Prevatt, D.O. "*Probabilistic modeling of wind pressure on low-rise buildings*," Journal of Wind Engineering and Industrial Aerodynamics, 114: 18-26, 2013. DOI: 10.1016/j.jweia.2012.12.014
48. Laboy*, S., Smith, D., Gurley, K.R. and Masters, F.J. "*Roof tile frangibility and puncture of metal window shutters,*" Wind and Structures, 17(2): 185-202, 2013.
49. Pita, L.G., Pinelli, J.P., Gurley, K. and Hamid S. "*Hurricane vulnerability modeling: evolution and future trends*," Journal of Wind Engineering and Industrial Aerodynamics, 114: 96-105, 2013
50. Dixon*, C.R., Masters, F.J., Prevatt, D.O., Gurley, K.R. "*An Historical Perspective on the Wind Resistance of Asphalt Shingles,"* Interface Journal of the RCI, May/June, 2012.
51. Pita*, G.L., Pinelli, J.P., Cocke, S., Gurley, K., Weekes, J. and Mitrani-Reiser J. "*Assessment of hurricane-induced internal damage to low-rise buildings in the Florida Public Loss Model,*" Journal of Wind Engineering and Industrial Aerodynamics, 104: 76-87, 2012.
52. Balderrama*, J.A., Masters, F.J., Gurley, K.R. "*Peak factor estimation in hurricane surface winds*," Journal of Wind Engineering and Industrial Aerodynamics, 102: 1-13, 2012.

53. Ben Ayed*, S., Aponte-Bermudez, L.D., Hajj, M.R., Tieleman, H.W., Gurley, K.R., and Reinhold, T.A. "*Analysis of hurricane wind loads on low-rise structures,"* Engineering Structures, 33(12): 3590-3596, 2011.

54. J.A. Balderrama*, F.J. Masters, K.R. Gurley, D.O. Prevatt, L.D. Aponte-Bermúdez, T.A. Reinhold, J.-P. Pinelli, C.S. Subramanian, S.D. Schiff, and A.G. Chowdhury. *"The Florida Coastal Monitoring Program (FCMP): A Review,"* Journal of Wind Engineering and Industrial Aerodynamics, 99(9): 979-995, 2011.

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57. Gurley, K. and Masters, F. *"Post 2004 Hurricane Field Survey of Residential Building Performance,"* ASCE Natural Hazards Review, 12(4): 177-183, 2011.

58. Fernandez*, G., Masters, F., Gurley, K. *"Performance of Hurricane Shutters Under Impact by Roof Tiles,"* Engineering Structures, 32(10): 3384-3393, 2010.

59. Masters, F., Gurley, K., Shah*, N. and Fernandez*, G. *"Vulnerability of Residential Window Glass to Lightweight Windborne Debris,"* Engineering Structures, 32(4): 911-921, 2010.

60. Masters, F., Gurley, K., and Kopp, G. *"Multivariate Stochastic Simulation of Wind Pressure Over Low-Rise Structures through Linear Model Interpolation,"* Journal of Wind Engineering and Industrial Aerodynamics, 98(4-5), 226-235, 2010.

61. Hamid, S., Kibria, G., Gulati, S., Powell, M., Annane, B., Cocke, S., Pinelli, J.P., Chen, S.C., and Gurley, K. "*Predicting Losses of Residential Structures in the State of Florida by the Public Hurricane Loss Evaluation Models*," Statistical Methodology, 7, 552-573, 2010.

62. Liu, Z., Prevatt, D., Aponte-Bermudez, L., Gurley, K., Reinhold, T., Akins, R. "*Field Measurement and Wind Tunnel Simulation of Hurricane Wind Loads on a Single Family Dwelling*," Engineering Structures, Vol 31, 2265-2274, 2009. https://doi.org/10.1016/j.engstruct.2009.04.009

63. Pinelli, J.P., Gurley, K., Subramanian, C., Hamid, S., and Pita*, G. "*Validation of a Probabilistic Model for Hurricane Insurance Loss Projections in Florida*", Journal of Reliability Engineering and System Safety, 93, pp 1896-1905, 2008.

64. Cope*, A., Gurley, K., Gioffre, M., and Reinhold, T. "*Low-Rise Gable Roof Wind Loads: Characterization and Stochastic Simulation*", Journal of Wind Engineering and Industrial Aerodynamics, 93(9), 719-738, 2005.

65. Simiu, E., Pinelli, J.P., Gurley, K., Subramanian, C., Zhang*, L., Cope*, A., Filliben, J., and Hamid, S. *"Hurricane Damage and Expected Loss Prediction Model for Residential Structures",* ASCE Journal of Structural Engineering, 130 (11), 1685-1691, 2004.

66. Masters*, F. and Gurley, K. "*Non-Gaussian Process Simulation: CDF Map-based Spectral Correction*", ASCE Journal of Engineering Mechanics, 129(12), 1418-1428, 2003.

67. Consolazio, G., Chung*, J., and Gurley, K. "*Impact Simulation and Full Scale Crash Testing of a Low Profile Concrete Work Zone barrier*", Computers and Structures, 81, 1359-1374, 2003.

68. Graham, L., Gurley, K., and Masters*, F. "*Non-Gaussian Simulation of Local Material Properties based on a Moving-Window Technique*", Probabilistic Engineering Mechanics, 2003, 18(3): 223-234.

69. Gurley, K., Kijewski*, T., and Kareem, A. "*First and Higher Order Correlation Detection using Wavelet Transforms*", ASCE Journal of Engineering Mechanics, 129(2), 188-201, 2003.

70. Waisman, F., Gurley, K., Grigoriu, M., and Kareem, A. *"A Non-Gaussian Model for Ringing Phenomena in Offshore Structures"*, ASCE Journal of Engineering Mechanics, 128(7), 730-741, 2002.

71. Gurley, K. and Kareem, A. *"Applications of Wavelet Transforms in Earthquake, Wind, and Ocean Engineering",* Engineering Structures, 21, 149-167, 1999.

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CONFERENCE PROCEEDINGS AND/OR PRESENTATIONS

1. Shaopeng Li; Kimia Yousefi Anarak; Ryan Catarelli; Yanlin Guo; Kurtis Gurley; John van de Lindt. Experimental Testing of Debris Flight in Turbulent Winds: Unsteady Approach vs Quasi-Steady Approach. 15th Americas Conference on Wind Engineering (ACWE), St. Louis, MO, 19-22 May 2025.

2. Kimia Yousefi Anarak; Shaopeng Li; Ryan Catarelli; Yanlin Guo; Kurtis Gurley; John W. van de Lindt. Evaluating Spherical Debris Flight in Turbulent Conditions: Can Numerical Simulations Predict Experimental Results? 15th Americas Conference on Wind Engineering (ACWE), St. Louis, MO, 19-22 May 2025.

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112. Pinelli, J.P., Murphree, J., Subramanian, C., Cope, A., Gurley, K., Gulati, S. and Hamid, S., "Hurricane Loss Estimation Model", International Conference On Probabilistic Safety Assessment And Management, Berlin, Germany, June 14 to 18, 2004.

113. Masters, F., Gurley, K. and Reinhold, T. "Ground level wind characteristics of Isidore and Lili", 11th International Conference on Wind Engineering, Lubbock, TX, June 2-5, 2003

114. Cope, A., Gurley, K., Pinelli, J.P. and Hamid, S. "A simulation model for wind damage predictions in Florida", 11th International Conference on Wind Engineering, Lubbock, TX, June 2-5, 2003.

115. Howard, R., Dodge, P., Doggett, A., Finney, J., Gurley, K., Levitan, M., Reinhold, T., Schroeder, J. and Stone, G. "The Landfall of Hurricane Lili in Louisiana: A Summary of Cooperative Data Collection Efforts", 11th International Conference on Wind Engineering, Lubbock, TX, June 2-5, 2003.

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117. Jean-Paul Pinelli, Chelakara. Subramanian, Liang Zhang , Kurtis Gurley, Anne Cope, Emil Simiu, Sofia Diniz, and Shahid Hamid, ,"A Model to Predict Hurricanes Induced Losses for Residential Structures" 35th Joint US-Japan Panel Meeting on Wind & Seismic Effects 12-17 May 2003, Tuskuba, Japan

118. Pinelli, J.P., Zhang, L., Subramanian, C., Cope, A., Gurley, K., Gulati, S. and Hamid, S. "Classification of Structural Models for Wind Damage Predictions in Florida", 11th International Conference on Wind Engineering, Lubbock, TX, June 2-5, 2003.

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120. Gurley, K. and Reinhold, T. "Measurement and Analysis of Ground Level Hurricane Wind Fields", 3rd Joint Workshop of Task Committee D (Wind Engineering) of the U.S.-Japan Cooperative Program on Natural Resources (UJNR), Seattle, October 2002.

121. Gioffre, M., Gurley, K., and Cope*, A. "Stochastic Simulation of Correlated Wind Pressure Fields on Low-Rise Gable Roof Structures", 15th ASCE Engineering Mechanics Conference, Columbia University, June 2-5, 2002.

122. Graham, L., Gurley, K., and Masters*, F. "Stochastic Simulation of Non-Gaussian Material Property Fields in Random Composite Materials", 15th ASCE Engineering Mechanics Conference, Columbia University, June 2-5, 2002.

123. Graham, L., Gurley, K., Masters*, F. and Baxter, S. "Analysis of Random Composite Materials using Non-Gaussian Simulation", 4rd International Conference on Computational Stochastic Mechanics, Corfu, Greece, June 2002

124. Kebeli*, H.V., Bucklin, R., and Gurley, K. "Wind Loading and Pressure Coefficient Measurements on a Full-Scale Grain Bin," American Society of Agricultural Engineers (ASAE) Annual International Meeting, Chicago, July 28-31, 2002.

125. Consolazio, G., Chung*, J., and Gurley, K. "Design of an Inertial Safety Barrier System Using Explicit Finite Element Simulation", Proceedings of the 1st M.I.T. Conference on Computational Fluid and Solid Mechanics, June 12-14, 2001. Elsevier Science 612-615.

126. Cope*, A. and Gurley, K. "Spatial Characteristics of Pressure Coefficients on Low Rise Gable Roof Structures", 1st Americas Conference on Wind Engineering, Clemson University, June 4-6, 2001.

127. Masters*, F. and Gurley, K. "Wind Load Simulation: A New Algorithm and Comparative Study", 1st Americas Conference on Wind Engineering, Clemson University, June 4-6, 2001.

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129. Gurley, K., Kijewski *, T., and Kareem, A. "Higher Order Correlation Detection in Wind Tunnel Data using Wavelet Transforms", 8th International Conference on Structural Safety and Reliability (ICOSSAR), Newport Beach, CA, 2001.

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131. Gurley, K. and Kareem, A. "Higher-Order Intermittent Correlation Detection using Wavelet Transforms", 8th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, July 23-26, 2000.

132. Jacobs, J. and Gurley, K. "Probabilistic and Spectral Characterization and Simulation of Soil Moisture Fields", 8th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, July 23-26, 2000.

133. Waisman, F., Gurley, K., Grigoriu, M., and Kareem, A. "A Non-Gaussian Model for the Ringing Phenomena in Offshore Structures", 8th ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, University of Notre Dame, July 23-26, 2000.

134. Gurley, K. and Kareem, A. "Higher Order Velocity / Pressure Correlation Detection using Wavelet Transforms", 10th International Conference on Wind Engineering, Copenhagen, Denmark, June 21-24, 1999.

135. Gurley, K., Kareem, A., Waisman, F., and Grigoriu, M. "A Stochastic Model of Ringing", 17th International Conference on Offshore Mechanics and Arctic Engineering, Lisboa, Portugal, July 5-9, 1998.

136. Gurley, K. and Kareem, A. "A Multi-Variate Non-Gaussian Simulation Algorithm", 4th International Conference on Stochastic Structural Dynamics, Notre Dame, Indiana, August 6-8, 1998.

137. Gurley, K. and Kareem, R. "Simulation of Non-Gaussian Processes", 3rd

International Conference on Computational Stochastic Mechanics, Santorini, Greece, June 14-17, 1998.

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139. Gurley, K. and Kareem, A. "Simulation of Non-Gaussian Pressure Fluctuations on Building Envelopes", 12th Engineering Mechanics Conference, ASCE, La Jolla, California, May 17-20, 1998.

140. Gurley, K. and Kareem, A. "Modeling PDFs of Non-Gaussian System Response", 7th International Conference on Structural Safety and Reliability (ICOSSAR), Kyoto, Japan, November 1997.

141. Gurley, K., Grigoriu, M., and Kareem, A. "Probabilistic Models of Ringing", 7th International Conference on Structural Safety and Reliability (ICOSSAR), Kyoto, Japan, November 1997.

142. Gurley, K. and Kareem, A. "Simulation of Correlated Non-Gaussian Pressure Fields", 2nd European and African Conference on Wind Engineering (2 EACWE), Genova, Italy, June 1997.

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144. Gurley, K. and Kareem, A., "Simulation of Non-Gaussian Random Processes", Joint ASME, ASCE, and SES Summer Meeting (McNu'97), Northwestern University, Evanston, IL, June 29 - July 2, 1997.

145. Gurley, K. and Kareem, A. "Comparison of a Tension Leg Platform Response Prediction Model with Experimental Data", 15th International Conference on Offshore Mechanics and Arctic Engineering, ASME, June 16-20, Florence, Italy, 1996.

146. Gurley, K. and Kareem, A. "Numerical Experiments in Ringing of Offshore Systems under Viscous Loads", 15th International Conference on Offshore Mechanics and Arctic Engineering, ASME, June 16 - 20, Florence, Italy, 1996.

147. Gurley, K. and Kareem, A. "Analysis, Interpretation, Modeling and Simulation of Unsteady Wind and Pressure Data", Extended Abstract, Third International Colloquium on Bluff Body Aerodynamics and Applications, Virginia Polytechnical Institute and State University, July 28 - August 1, 1996.

148. Gurley, K. and Kareem, A. "Numerical Experiments in Springing and Ringing of Offshore Platforms", Proceedings of the 10th ASCE Engineering Mechanics Specialty Conference, Boulder, Colorado, May 21-24, 1995.

149. Gurley, K., Kareem, A. and Tognarelli, M. "Wind Effects: A Non-Gaussian Perspective", Proceedings of the 10th ASCE Engineering Mechanics Specialty Conference, Boulder, Colorado, May 21-24, 1995.

150. Kareem, A. and Gurley, K. "Reliability-Based Gust-Loading Factors for Offshore and Coastal Structures", Proceedings UNDP Sponsored Workshop on Engineering of Structures for Mitigating Damage due to Cyclones, Structural Engineering Research Center, Madras, India, Jan. 4-6, 1995. (Invited keynote).

151. Kareem, A., Gurley, K., and Tognarelli, M. "Advanced Analysis and Simulation Tools for Wind Engineering", International Association for Wind Engineering, Proceedings of the 9th International Conference on Wind Engineering, Vol. 5, Wiley

Eastern Limited, New Delhi, 1995.

152. Gurley, K., Kareem, A., and Bergman, L. "Coupling of Tall Buildings for Control of Response to Wind", Proceedings of the 6th International Conference on Structural Safety and Reliability (ICOSSAR), A.A. Balkema Press, Netherlands, December 1993.

153. Kareem, A., Gurley, K., and Kantor, J.C. "Time-Scale Analysis of Nonstationary Processes Utilizing Wavelet Transforms", Proceedings of the 6th International Conference on Structural Safety and Reliability (ICOSSAR), A.A. Balkema Press, Netherlands, December 1993.

154. Kareem, A. and Gurley, K. "Gust Loading Factors for Offshore and Coastal Facilities", The International Workshop on Wind and Earthquake Engineering for Offshore and Coastal Facilities, UJNR (Unites States Japan Natural Resource), Port and Harbor Research Institute, Yokosuka, Japan, May 12-14, 1993.

PRESENTATIONS (invited speaker, no paper produced)

Gurley, K., "LSU graduate student seminar: The UF BLWT." December 1, 2023

Gurley, K., "GSC NHERI NSF Proposal Writing Workshop." Delivered (online) to Graduate Student Council of NSF NHERI program." June 10, 2022. https://www.youtube.com/watch?v=NkMC6GG5Xcw

Gurley, K. NHERI Experimental Facility at UF: Boundary Layer Wind Tunnel, Measurement Techniques & Flow Simulation." Johns Hopkins University Graduate Student Seminar Series, April 21, 2022.

Gurley, K., "Collaborative research: wind tunnel modeling of higher-order turbulence and its effects on structural loads and response." Graduate Student Council NHERI Mentoring Meeting, March 18, 2022.

"University of Florida Hazard Research", presented by K. Gurley (online) at the THWARTS/IBHS Natural Hazards Symposium, January 19, 2021

"Wind Engineering", presented by K. Gurley (online) to the Texas Farmers Branch Elementarty School (3rd grade class), December 18, 2020.

"NHERI Wind Engineering Research Experimental Facility at UF", presented by K. Gurley (online) at the Scientist in Every Florida School Teacher Workshop, July 7, 2020

"An engineering perspective on residential performance in Hurricane Michael", presented by K. Gurley at the 2019 Florida Chamber Annual Insurance Summit. Miami, FL, November 5, 2019

"Hurricane Michael's Devastation", presented by K. Gurley at the Florida Hurricane Catastrophe Fund 19th Annual Participating Insurers Workshop. Orlando, FL, June 5, 2019.

Southeast Coastal Ocean Observing Regional Association (SECOORA) meeting: Coastal hazards panel member. May 12, 2010, Savannah, GA

National Hurricane Conference 2010 - Performance of Windows and Impact Protection Systems subjected to a Variety of Windborne Debris Impacts

AAWE Workshop, Vail Colorado 8/2008 – keynote speaker on full-scale wind research

Multi-State Cat Fund Meeting, Atlanta, 2/15/07 – UF *Hurricane mitigation research*

Windstorm Mitigation Study Committee, Tallahassee, 2/8/07 – testimony: *Residential Wind Damage Mitigation Research*

University of New Hampshire Invited Lecture Series, fall, 2006 – *Hurricanes and the infrastructure*

Governors Hurricane Conference, May 2006

National Hurricane Conference, April 2006

American Architectural Manufacturers Association, spring 2006

Mutual Assistance Workshop for National Utilities, spring 2006, Orlando

Canadian Society of Civil Engineering, March 8, 2006, London Ontario

State of Florida Utilities Commission Meeting, 2005

Florida Building Commission, Fall 2005, Spring 2006, Summer 2006

South Florida Forum – Bank of America (for UFF), Ft. Lauderdale, June 2006

South Florida Forum – (UFF), Naples, April 2006

Gurley, Masters, Prevatt and Reinhold, "*Hurricane wind data collection: methods and analysis*," Flow in Tornadoes and Hurricanes panel session, International Mechanical Engineering Congress and R&D Expo, Orlando, Florida, November 5-11, 2005. Invited talk.

Gurley, Masters, Prevatt, Reinhold, "*Florida Coastal Monitoring Program: 2004 Hurricane Dataset*", Invited talk, Florida Building Commission meeting, Orlando, December 2004.

Gurley, "*Florida Post 2004 Hurricane Field Survey*", Invited talk, Florida Building Commission meeting, Orlando, May 2005.

Gurley et al., "*Florida Post 2004 Hurricane Field Survey*", Invited talk, Governors Hurricane Conference, Tampa, May, 2005.

Gurley et al., "*Florida Post 2004 Hurricane Field Survey*", Invited talk, ICC Hurricane Symposium, Orlando, March, 2005.

Pinelli, Gurley and Hamid, "*A Model to Predict Hurricane-Induced Losses for Residential Structures in Florida*", Invited talk, National Hurricane Conference, Orlando, April 2004.

Masters, Gurley and Reinhold, "*Real-Time Measurement of Hurricane Isabel*", Invited talk, National Hurricane Conference, Orlando, April 2004.

Gurley et al., "*A Model to Predict Hurricane-Induced Losses for Residential Structures in Florida*", Invited talk, Governors Hurricane Conference, Tampa, May, 2004.

Gurley, K., Reinhold, T. and Masters, F. "*Real-time full-scale observations of ground level hurricane winds*", University of Western Ontario Department of Civil Engineering Graduate Seminar, invited talk, Feb. 3, 2004.

Gurley, Reinhold and Pinelli, "*Chasing Isabel: Engineers' Efforts to Quantify Risk*", Invited Talk, Institute for Business and Home Safety Conference, November 2003.

Gurley, K. and Reinhold, T. *"Wind Measurements in Hurricane Gordon: A Preliminary Look at Wind Field Variations for Beach-Front and Inland Locations",* National

Hurricane Conference, Washington, D.C., April 2001.

Reinhold, T., Gurley, K. and Buzbee, T. *"Florida Coastal Monitoring Program: Home Instrumentation Project and Wind Field Monitoring",* National Hurricane Conference, New Orleans, LA, April 2000.

ARTICLES - invited (not reviewed)

Gurley, K. and Reinhold, T. *"Measurement of Ground Level Hurricane Winds",* The Wind Engineer, Newsletter for the American Association for Wind Engineering (AAWE), November 2002.

Gurley, K. and Reinhold T., "*Measurement of Ground Level Hurricane Winds to Evaluate and Mitigate Structural Vulnerability*", Disaster Safety Review, Institute for Business and Home Safety, 3(2), p. 8-9, 2004.

BOOK CHAPTERS

ASCE Wind vs. Water

Peng, X., Roueche, D., Prevatt, D., Gurley, K. "An Engineering-Based Approach to Predict Tornado-Induced Damage", in *Multi-hazard Approaches to Civil Infrastructure Engineering* DOI: 10.1007/978-3-319-29713-2_15

Kareem, A., Tognarelli, M.A., Gurley, K., and Kijewski, T.L. "Modeling of Nonlinear Ocean Systems", In: Shlesinger, M.F. and Swean, T., eds., *Stochastically Excited Nonlinear Ocean Structures*, World Scientific, 1998.

Kareem, A., Zhao, J., Tognarelli, M.A., and Gurley, K. "Dynamics of Nonlinear Stochastic Systems: A Frequency Domain Approach", In: Haldar, A. and Ayyub, B., eds., *Uncertainty Modeling in Stability, Vibration and Control of Structural System*s, World Scientific, 1996.

PATENTS

Title: Portable Roadway Barrier
Inventors: Consolazio, G., **Gurley, K.** and Ellis, R.
Date of Patent: July 27, 2004
Patent No.: US 6,767,158 B1
Designed and patented (through FDOT and UF OTL) new low profile concrete barriers for protection of roadside work zone occupants from high speed vehicle impact. With its low-profile design of 18 inches in height, the barrier permits increased visibility to both vehicle occupants and roadside workers. Dr. Consolazio is the primary researcher / inventor. Dr. Gurley and Dr. Ellis are contributors to the research, development and patent process.

David O Prevatt, Craig Dixon, and **Kurt Gurley**. 2019. *Retrofit/repair technique for asphalt shingle roofs that exhibit premature adhesive tab seal failures.* US10329771B 2019/06/25. https://bit.ly/ufWIND-21-2020

HONORS / AWARDS

- Outstanding Reviewer Award – Journal of Wind Engineering and Industrial Aerodynamics - Elsevier, January, 2015
- Junior award (under 40 years of age) for significant and original contributions to wind engineering research - International Association for Wind Engineering (IAWE), 2007
- Munro Prize, 2000 - Awarded by International Editorial Board for best paper of 1999 (Vol. 21) in Engineering Structures: *"Applications of Wavelet Transforms in Earthquake, Wind and Ocean Engineering"*.
- NSF CAREER Award – 2000-2005