

Keegan J. Moore

Assistant Professor

Department of Mechanical and Materials Engineering
University of Nebraska–Lincoln

W336 Nebraska Hall
Lincoln, NE, 68588-0526
(330) 635-8426 | kmoore@unl.edu

EDUCATION

- | | |
|------|--|
| 2018 | Ph.D. in Mechanical Engineering, University of Illinois at Urbana-Champaign, Urbana, IL
Dissertation: “Data-Driven System Identification of Strongly Nonlinear Modal Interactions and Model Updating of Nonlinear Dynamical Systems”
Advisors: Alexander F. Vakakis, Lawrence A. Bergman, D. Michael McFarland |
| 2014 | B.Sc. in Mechanical Engineering, University of Akron, Akron, OH |

PROFESSIONAL EMPLOYMENT

- | | |
|---------------|--|
| 2018– | Assistant Professor, Department of Mechanical and Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE |
| 2015–
2018 | National Science Foundation Graduate Research Fellow, University of Illinois at Urbana-Champaign, Urbana, IL |
| 2018 | Research Assistant, University of Illinois at Urbana-Champaign, Urbana, IL |
| 2015–
2018 | Teaching Assistant, University of Illinois at Urbana-Champaign, Urbana, IL |
| 2015 | Summer Graduate Research Intern, Sandia National Laboratories, Albuquerque, NM |
| 2014 | Predoctoral Fellow, University of Illinois at Urbana-Champaign, Urbana IL |

JOURNAL PUBLICATIONS

Supervised by Dr. Moore: ¹Undergraduate student, ²Masters student, ³Ph.D. student, ⁴Postdoctoral scholar

- | | |
|------|--|
| UR | 19. A. Singh ³ , K.J. Moore , “Component-Scaled Signal Reconstruction for Enhanced Noise Filtration,” <i>Digital Signal Processing</i> , (under review). |
| UR | 18. J.D.E. Dalisay, K.J. Moore , L.A. Bergman, A.F. Vakakis, “Local nonlinear stores induce global modal interactions in the steady-state dynamics of a model airplane,” <i>Journal of Sound and Vibration</i> , (under review). |
| UR | 17. C. Wang ³ , K.J. Moore , “On Nonlinear Energy Flows in Nonlinearly Coupled Oscillators with Comparable Mass,” <i>Nonlinear Dynamics</i> , (under review). |
| Acc | 16. A. Singh ³ , K.J. Moore , “Characteristic Nonlinear System Identification of Clearance Nonlinearities in Local Attachments,” <i>Nonlinear Dynamics</i> , (accepted). |
| IP | 15. J.D.E. Dalisay, K.J. Moore , L.A. Bergman, A.F. Vakakis, “Effects of Nonlinear Stores on the Dynamics of a Computational Model Airplane,” <i>Journal of Aircraft</i> , (In-press). |
| 2019 | 14. K.J. Moore , “A Reduced-order Model for Loosening Mechanics of Axial Joints,” <i>ASME Journal of Applied Mechanics</i> , 86(12):121007, 2019. http://dx.doi.org/10.1115/1.4044813 |
| 2019 | 13. K.J. Moore , “Characteristic Nonlinear System Identification: A Data-driven Approach for Local Nonlinear Attachments,” <i>Mechanical Systems and Signal Processing</i> , 131:335-347, 2019. http://dx.doi.org/10.1016/j.ymssp.2019.05.066 |

- 2019 12. **K.J. Moore**, A. Mojahed, L.A. Bergman, A.F. Vakakis, “Local Nonlinear Stores Induce Global Effects in the Dynamics of an Experimental Model Airplane,” *AIAA Journal*, 57(11):4953-4965, 2019. <http://dx.doi.org/10.2514/1.J058311>
- 2019 11. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Direct Detection of Nonlinear Modal Interactions From Time Series Measurements,” *Mechanical Systems and Signal Processing*, 125:311–329, 2019. <http://dx.doi.org/10.1016/j.ymssp.2017.09.010>
- 2019 10. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Time-Series Based Nonlinear System Identification of Modal Interactions Caused by Strongly Nonlinear Attachments,” *Journal of Sound and Vibration*, 438:13–32, 2019. <http://dx.doi.org/10.1016/j.jsv.2018.09.033>
- 2018 9. A. Mojahed, **K.J. Moore**, L.A. Bergman, A.F. Vakakis, “Strong Geometric Softening-Hardening Nonlinearities in an Oscillator Composed of Linear Stiffness and Damping Elements,” *International Journal of Non-linear Mechanics*, 11:94-111, 2018. <http://dx.doi.org/10.1016/j.ijnonlinmec.2018.09.004>
- 2018 8. **K.J. Moore**, A.F. Vakakis, “Wave Non-Reciprocity at a Nonlinear Structural Interface,” *Acta Mechanica*, 229(10):4057-4070, 2018. <http://dx.doi.org/10.1007/s00707-018-2212-5>
- 2018 7. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Wavelet-Bounded Empirical Mode Decomposition for Vibro-Impact Analysis,” *Nonlinear Dynamics*, 93(3):1559–1577, 2018. <http://dx.doi.org/10.1007/s11071-018-4276-0>
- 2018 6. J. Bunyan, **K.J. Moore**, A. Mojahed, M.D. Fronk, S. Tawfick, M. Leamy, A.F. Vakakis, “Acoustic Non-reciprocity in a Lattice Incorporating Nonlinearity, Asymmetry and Internal Scale Hierarchy: Experimental Study,” *Physical Review E*, 97(5):052211, 2018. <http://dx.doi.org/10.1103/PhysRevE.97.052211>
- 2018 5. **K.J. Moore**, J. Bunyan, S.H. Tawfick, O.V. Gendelman, S. Li, M. Leamy, A.F. Vakakis, “Non-Reciprocity in the Dynamics of Coupled Oscillators with Nonlinearity, Asymmetry and Scale Hierarchy,” *Physical Review E*, 97(1):012219, 2018. <http://dx.doi.org/10.1103/PhysRevE.97.012219>
- 2018 4. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Wavelet-Bounded Empirical Mode Decomposition for Measured Time Series Analysis,” *Mechanical Systems and Signal Processing*, 99:14–29, 2018. <http://dx.doi.org/10.1016/j.ymssp.2017.06.005>
- 2017 3. **K.J. Moore**, M. Kurt, M. Eriten, J.C. Dodson, J.R. Foley, J.C. Wolfson, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Nonlinear Parameter Identification of a Mechanical Interface Based on Primary Wave Scattering,” *Experimental Mechanics*, 57(9):1495–1508, 2017. <http://dx.doi.org/10.1007/s11340-017-0320-0>
- 2017 2. M. Kurt, **K.J. Moore**, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Nonlinear model updating applied to the IMAC XXXII Round Robin benchmark system,” *Mechanical Systems and Signal Processing*, 88:111–122, 2017. <http://dx.doi.org/10.1016/j.ymssp.2016.10.016>
- 2015 1. Y. Zhang, **K.J. Moore**, D.M. McFarland, A.F. Vakakis, “Targeted energy transfers and passive acoustic wave redirection in a two-dimensional granular network under periodic excitation,” *Journal of Applied Physics*, 118(23):234901, 2015. <http://dx.doi.org/10.1063/1.4937898>

REFEREED PROCEEDINGS AND PRESENTATIONS

Supervised by Dr. Moore: ¹Undergraduate student, ²Masters student, ³PhD student, ⁴Postdoctoral scholar

- 2020 31. H.A. Van Heuveln¹, **K.J. Moore**, “Strong Vibration Mitigation in High-Aspect-Ratio Wings Using a Nonlinear Energy Sink With Elliptic Clearance,” *ASME International Design Engineering and Technical Conference*, St. Louis, MO, August 16–19, 2020.
- 2020 30. **K.J. Moore**, “Reduced-order Modeling of Loosening Mechanics in Axially Oriented Threaded Joints,” *ASME International Design Engineering and Technical Conference*, St. Louis, MO, August 16–19, 2020.

- 2020 29. **K.J. Moore**, “A New Data-Driven System Identification Method for Local Attachments with Smooth and Non-smooth Nonlinearities,” *ASME International Design Engineering and Technical Conference*, St. Louis, MO, August 16–19, 2020.
- 2020 28. C. Wang³, **K.J. Moore**, “Breaking Dynamic Reciprocity Allows for Strong Vibration Isolation in a Multi-floor Nonlinear Structure,” *ASME International Design Engineering and Technical Conference*, St. Louis, MO, August 16–19, 2020.
- 2020 27. **K.J. Moore**, “The Characteristic Nonlinear System Identification: A Method for Local, Nonlinear Attachments,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 26. H.A. Van Heuveln¹, **K.J. Moore**, “Manipulating Nonlinear Absorbers to Enhance Vibration Suppression in Ultra-high-aspect-ratio Wings,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 25. A. Singh³, **K.J. Moore**, “Enhancing Noise Filtration Through Linear Combinations of Intrinsic Mode Functions,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 24. C. Wang³, **K.J. Moore**, “Targeted Vibration Isolation through Breaking Dynamic Reciprocity in a Multi-floor Nonlinear Structure,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 23. M. Miller, C. Johnson, N. Sonne, J. Mersch, R. Kuether, J. Smith, J. Ortiz, G. Castelluccio, **K.J. Moore**, “Bolt Preload Loss Due to Modal Excitation of a C-Beam Structure,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 22. G. Kosova, M. Jin, M. Cenedese, W. Chen, A. Singh³, D. Jana, M.R.W. Brake, C.W. Schwing-shackl, **K.J. Moore**, J.P. Noël, “Nonlinear System Identification of a Jointed Structure Using Full-field Data: Part II Analysis,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2020 21. A. Singh³, W. Chen, D. Jana, M. Jin, G. Kosova, M. Cenedese, M.R.W. Brake, C.W. Schwing-shackl, **K.J. Moore**, J.P. Noël, “Nonlinear System Identification of a Jointed Structure Using Full-field Data: Part I Experimental Investigation,” *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.
- 2019 20. J.D. Dalisay, **K.J. Moore**, L.A. Bergman, A. F. Vakakis, “Computational Simulation of the Effects of Local Nonlinear Stores on the Global Dynamics of an Experimental Model Plane,” *ASME International Design Engineering and Technical Conference*, Anaheim, CA, August 18–21, 2019.
- 2019 19. **K.J. Moore**, “A Reduced-order Model for Axial Joint Loosening Mechanics,” *Tribomechadynamics Conference*, Houston, TX, July 31–August 2, 2019.
- 2019 18. M. Cenedese, G. Kosova, M. Jin, W. Chen, A. Singh³, D. Jana, M.R.W. Brake, C.W. Schwing-shackl, **K.J. Moore**, J.P. Noël, “Nonlinear System Identification of a Jointed Structure Using Full Field Data; Part 2: Analysis,” *Tribomechadynamics Conference*, Houston, TX, July 31–August 2, 2019.
- 2019 17. D. Jana, A. Singh³, W. Chen, M. Jin, G. Kosova, M. Cenedese, M.R.W. Brake, C.W. Schwing-shackl, **K.J. Moore**, J.P. Noël, “Nonlinear System Identification of a Jointed Structure Using Full Field Data; Part 1: Experiments,” *Tribomechadynamics Conference*, Houston, TX, July 31–August 2, 2019.
- 2019 16. **K.J. Moore**, A. Mojahed, J. Dalisay, L.A. Bergman, A.F. Vakakis, “Experimental Study of Global Response of a Model Airplane with a Strongly Nonlinear Store on Each Wing,” *7th International Conference on Nonlinear Vibrations, Localization and Energy Transfer*, Marseille, France, July 1–4, 2019.
- 2019 15. **K.J. Moore**, L.A. Bergman, A.F. Vakakis, “Influence of Local Nonlinearities on Global System Dynamics and Nonlinear System Identification,” *Engineering Mechanics Institute Conference*, California Institute of Technology, Pasadena, CA, June 18–21, 2019.
- 2019 14. **K.J. Moore**, A. Mojahed, L.A. Bergman, A.F. Vakakis, “Local Nonlinear Attachments Induce Global Effects in Airplane Dynamics,” *International Modal Analysis Conference XXXVII*, Orlando, FL, January 28–31, 2019.

- 2018 13. J. Bunyan, **K.J. Moore**, A. Mojahed, M. D. Fronk, M. Leamy, S. Tawfick, A.F. Vakakis, "Acoustic Non-reciprocity in a Lattice with Nonlinearity, Asymmetry and Internal Scale Hierarchy," *ASME International Design Engineering Technical Conference*, Quebec City, Quebec, Canada, August 26–29, 2018.
- 2018 12. **K.J. Moore**, J. Bunyan, A. Mojahed, S. Tawfick, O.V. Gendelman, S. Li, M. Leamy, A.F. Vakakis, "Non-reciprocal Acoustics of Lattices with Nonlinearity, Asymmetry and Scale Hierarchy," *U.S. National Congress for Theoretical and Applied Mechanics (18th USNC TAM)*, Chicago, IL, June 4–9, 2018.
- 2018 11. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Time-series Based System Identification of Nonlinear Attachments," *International Modal Analysis Conference (International Modal Analysis Conference XXXVI)*, Orlando, FL, February 12–15, 2018.
- 2017 10. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Direct Detection of Nonlinear Modal Interactions for Model Updating Using Measured Time Series," *ASME International Design Engineering and Technical Conference*, Cleveland, OH, 2017.
- 2017 9. **K.J. Moore**, C.A. Herrera, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Reduced-order Modeling of Strongly Nonlinear Systems Using Measured Time Series," *9th European Nonlinear Dynamics Conference*, Budapest, Hungary, June 25–30, 2017. <http://congressline.hu/enoc2017/abstracts/65.pdf>
- 2017 8. **K.J. Moore**, C.A. Herrera, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Reduced-order Modeling of Strongly Nonlinear Systems Using Measured Time Series," *International Modal Analysis Conference (International Modal Analysis Conference XXXV)*, Garden Grove, CA, January 30–February 2, 2017.
- 2016 7. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Nonlinear System Identification of Mechanical Interfaces Based on Wave Propagation," in: J.M. Floryan (eds) *Contributions to the Foundations of Multidisciplinary Research in Mechanics: Papers presented during the 24th International Congress of Theoretical and Applied Mechanics*, International Congress of Theoretical and Applied Mechanics, Montreal, August 22–26, 2016. http://iutam.org/publications/ictam-proceedings/ictam_2016
- 2016 6. **K.J. Moore**, C.A. Herrera, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Estimation of the Natural Frequencies of Strongly Nonlinear Systems from Time-Domain Response Data," *ISWAV 2016: 4th International Symposium and Workshop on Acoustics and Vibration*, Harbin, China, July 26–29, 2016.
- 2016 5. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Nonlinear System Identification of Mechanical Interfaces Based on Wave Propagation," *Proceedings: International Conference on Nonlinear Vibrations, Localization and Energy Transfer*, Liège, Belgium, July 4–8, 2016. <http://www.nnm2016liege.com/en/download>
- 2016 4. M.R.W. Brake, **K.J. Moore**, "A Heuristic Model of Force-Displacement Curves for the Failure of Mechanical Bolts in Tension," *ASME International Design Engineering Technical Conference*, Charlotte, NC, August 21–24, 2016.
- 2016 3. R.C. Fliccek, **K.J. Moore**, G.M. Castelluccio, M.R.W. Brake, T. Truster, C.I. Hammetter, "Stress Waves Propagating Through Bolted Joints," In: Allen M., Mayes R., Rixen D. (eds) *Dynamics of Coupled Structures, Volume 4. Conference Proceedings of the Society for Experimental Mechanics Series*. Springer, 2016. http://dx.doi.org/10.1007/978-3-319-29763-7_49
- 2016 2. **K.J. Moore**, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Nonlinear System Identification of Mechanical Interfaces Based on Wave Scattering," In: Allen M., Mayes R., Rixen D. (eds) *Dynamics of Coupled Structures, Volume 4. Conference Proceedings of the Society for Experimental Mechanics Series*, Springer, 2016. http://dx.doi.org/10.1007/978-3-319-29763-7_32
- 2015 1. M. Kurt, **K.J. Moore**, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, "Nonlinear Model Updating Methodology with Application to the International Modal Analysis Conference XXXIII Round Robin Benchmark Problem," In: G. Kerschen, editor. *Nonlinear Dynamics, Volume 1. Conference Proceedings of the Society for Experimental Mechanics Series 5*, Springer International Publishing, 2015. http://dx.doi.org/10.1007/978-3-319-15221-9_31

UNREFEREED PRESENTATIONS AND POSTERS

Supervised by Dr. Moore: ¹Undergraduate student, ²Masters student, ³PhD student, ⁴Postdoctoral scholar

- | | |
|------|---|
| 2020 | 2. A. Allen ¹ , K.J. Moore , “Multi-harmonic Vibration Mitigation Through Exploitation of Structural Instability,” Nebraska Summer Research Virtual Symposium, August 6, 2020. |
| 2019 | 1. J.J. Broadway ¹ , K.J. Moore , “Investigation of Digital Image Correlation as a Method of Measuring Bolted Joint Pressure Distribution,” Nebraska Summer Research Symposium, August 8, 2019. |

INVITED TALKS

- | | |
|------|--|
| 2019 | 3. “Reduced-order Modeling of Loosening in Bolted Joints Subjected to Axial Shock Excitation,” Sandia National Laboratories, Albuquerque, NM, 2019. |
| 2017 | 2. “Methods for the Detection of Nonlinear Modal Interactions from Measured Time Series,” University of Akron, Akron, OH, 2017. |
| 2016 | 1. “Nonlinear Identification Tools and Methods,” <i>m+p Modal Analysis Seminar</i> held at <i>International Modal Analysis Conference XXXIV</i> , Orlando, FL, 2016. |

CHAPTERS IN BOOKS

- | | |
|------|--|
| 2018 | 2. K.J. Moore , A. Mojahed, M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Advanced Nonlinear System Identification for Modal Interactions in Nonlinear Structures: A Review,” In: I. Andrianov, A. Manevich, Y. Mikhlin, O. Gendelman (eds) <i>Problems of Nonlinear Mechanics and Physics of Materials</i> . Advanced Structured Materials, vol 94. Springer, Cham, 2018. http://dx.doi.org/10.1007/978-3-319-92234-8_7 |
| 2018 | 1. K.J. Moore , M. Kurt, M. Eriten, D.M. McFarland, L.A. Bergman, A.F. Vakakis, “Elements of a Nonlinear System Identification Methodology of Broad Applicability with Application to Bolted Joints,” In: M.R. Brake (eds) <i>The Mechanics of Jointed Structures</i> , Springer International Publishing, 2018. http://dx.doi.org/10.1007/978-3-319-56818-8 |

GOVERNMENT REPORTS

- | | |
|------|--|
| 2015 | 1. K.J. Moore , M.R.W. Brake, “A Reduced Order Model of Force Displacement Curves for the Failure of Mechanical Bolts in Tension,” SAND2015-10871, Sandia National Laboratories, Albuquerque, NM, 2015. https://www.osti.gov/scitech/biblio/1234813 |
|------|--|

GRANTS & FELLOWSHIPS

Awarded Research Grants

- | | |
|------|---|
| 2020 | 3. NASA Nebraska EPSCoR, NASA, “Design of Nonlinear Vibration Absorbers to Enhance Aeroelastic Performance of High-aspect-ratio Wings in Commercial Aircraft,” \$15,000 (PI), Grant Number: 80NSSC19M0065, 2019-2020. |
| 2019 | 2. NASA Nebraska Space Grant, NASA, “Manipulating Nonlinear Absorbers to Enhance Vibration Suppression in Ultra-high-aspect-ratio Wings,” \$5,000 (PI), Grant Number: NNX15AI09H, 2019-2020. |

- 2015 | 1. Graduate Research Fellowship Program, National Science Foundation, “Nonlinear System Identification, Reduced Order Modeling, and Model Updating of the Effects of Mechanical Joints on Structural Dynamics,” \$138,000 (PI), Grant Number: DGE-1144245, 2015-2018.

Fellowships & Awards

- 2020 | 9. Air Force Office of Scientific Research, Air Force Summer Faculty Fellowship, “Research on Wave Interaction in Stacked Concrete Slabs,” \$18,000 (PI), 2020.
- 2019 | 8. Faculty Fellowship Program in Israel (\$10,000), *Jewish National Fund*, 2019-2020.
- 2019 | 7. University of Nebraska-Lincoln CAREER Club (\$10,000), 2019-2020.
- 2019 | 6. University of Nebraska-Lincoln Peer Review of Teaching Fellowship, 2019-2020.
- 2018 | 5. University of Nebraska-Lincoln Research Development Fellows Program, 2018-2019.
- 2015 | 4. MechSE Travel Scholarship, University of Illinois at Urbana-Champaign, 2015–2016.
- 2014 | 3. George A. Costello Memorial Fellowship, University of Illinois at Urbana-Champaign, 2014.
- 2014 | 2. Thomas J. and Virginia Fisher Dolan Fellowship, University of Illinois at Urbana-Champaign, 2014.
- 2014 | 1. Henry L. Langhaar Memorial Fellowship, University of Illinois at Urbana-Champaign, 2014.

TEACHING EXPERIENCE

Assistant Professor, University of Nebraska-Lincoln

- 2020 | 4. Advanced Vibrations (Graduate Only), Fall, 2020.
- 2020 | 3. Engineering Acoustics (Graduate & Undergraduate Elective), Spring, 2020 (Rated 4.69/5.00).
- 2019 | 2. Engineering Dynamics (Core Undergraduate), Fall, 2019 (Rated 4.33/5.00).
- 2019 | 1. Engineering Acoustics (Graduate & Undergraduate Elective), Spring, 2019 (Rated 4.39/5.00).

Teaching Assistant, University of Illinois at Urbana-Champaign

- 2018 | 4. Intermediate Dynamics, Spring, 2018.
- 2017 | 3. Introduction to Nonlinear Dynamics and Vibrations, Spring, 2017.
- 2016 | 2. Experimental Stress Analysis, Spring, 2016.
- 2015 | 1. Introductory Dynamics, Spring, 2015.

ADVISING

Doctoral Students

- 2023 | 3. Sandro Aldana, “Reduced-order Modeling of Wave Scattering and Loosening in Bolted Joints,” 2023 (expected).
- 2022 | 2. Aryan Singh, “New Nonlinear Modal Analysis Framework for Big-data Dynamical Systems,” 2022 (expected).
- 2022 | 1. Chengen Wang, “Employing Strong Nonlinearity For Passive Acoustic Energy Redirection,” 2022 (expected).

Undergraduate Researchers

- 2020– | 11. Stephanie Vavra, “Targeted Vibration Isolation of Airline Interior Cabins from External Disturbances,” 2020.
- 2020 | 10. Judith Brown, “Design of Nonlinear Vibration Absorbers to Enhance Aeroelastic Performance of High-aspect-ratio Wings in Commercial Aircraft,” 2020-present.
- 2020 | 9. Thomas Vierk, “Design of Nonlinear Vibration Absorbers to Enhance Aeroelastic Performance of High-aspect-ratio Wings in Commercial Aircraft,” 2020-present.
- 2020 | 8. Rachael Stanek, “Manipulating Nonlinear Absorbers to Enhance Vibration Suppression in Ultra-high-aspect-ratio Wings,” Summer 2020.
- 2020– | 7. Guilherme Eymael, “Nonlinear Interactions Between Nonlinear Stores on Fighter Jets,” 2020-present.
- 2019– | 6. Ben Franco, “Reduced-order Modeling of Bolted Joint Loosening: Torque-Stiffness and Torque Loss Modeling,” 2019-present.
- 2019– | 5. Austin Hajek, “Investigation Into Energy Flows of Nonlinear Structures,” 2019-present.
- 2019– | 4. Anna Boothe, “Nonlinear Vibration Mitigation Using a Bunyan-Tawfick Spring,” Fall, 2019.
- 2019–
2020 | 3. Heath Van Heuveln, “Manipulating Nonlinear Absorbers to Enhance Vibration Suppression in Ultra-high-aspect-ratio Wings,” 2019-2020.
- 2019 | 2. Peyton Stanczyk, “Nonlinear Vibration Mitigation in a Formula SAE Vehicle,” Fall, 2019.
- 2019 | 1. Joseph Broadway, “Experimental Investigation of Pressure Distributions Induced by Bolted Joints in Complex Geometries,” Summer, 2019.

SERVICE TO PROFESSION

Conference Organization

- 2020 | 4. Co-Chair, Sessions on Exploiting Nonlinearity, *International Modal Analysis Conference XXXIX*, Orlando, FL, February 8–11, 2021.
- 2020 | 3. Co-Chair, Sessions on Experimental Nonlinear Dynamics, *International Modal Analysis Conference XXXIX*, Orlando, FL, February 8–11, 2021.
- 2019 | 2. Co-Chair, Mini-Symposium on Reduced-Order Modeling and System Identification, *European Nonlinear Oscillations Conference*, Lyon, France, July 5–10, 2021 (Delayed due to Covid-19 Pandemic)
- 2019 | 1. Co-Chair, Sessions on Nonlinear Vibration Mitigation, *International Modal Analysis Conference XXXVIII*, Houston, TX, February 10–13, 2020.

Service for Academic Journals

2015– | Reviewer: Mechanical Systems and Signal Processing, Journal of Sound and Vibration, ASME Journal of Vibration and Acoustics, Meccanica, International Journal of Non-Linear Mechanics, Nonlinear Dynamics, Journal of Engineering Mechanics, Communications in Nonlinear Science and Numerical Simulation, Digital Signal Processing, ASME Journal of Applied Mechanics, Energy, Chaos

PROFESSIONAL MEMBERSHIPS

- 2019 | 4. American Institute of Aeronautics and Astronautics, Associate Member, 2019–present
- 2015 | 3. Society of Experimental Mechanics, Member, 2015–present.
- 2012 | 2. American Society of Mechanical Engineers, Member, 2013–present.
- 2011 | 1. Society of Automotive Engineers, Member, 2011–2013.