

Mostafa A. Nouh

Associate Professor, Dept. of Mechanical & Aerospace Engineering
Director, Sound & Vibrations Laboratory (SVL)
Fellow, American Society of Mechanical Engineers (ASME)
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EDUCATION

Ph.D.	University of Maryland, College Park	August 2013
Major: Mechanical Engineering		
Advisor: Dr. Amr Baz GPA: 4.0		
Dissertation Topic: <i>Thermoacoustic-Piezoelectric Systems with Dynamic Magnifiers</i>		
M.S.	University of Maryland, College Park	May 2012
Major: Mechanical Engineering		
Advisor: Dr. Amr Baz GPA: 4.0		
B.S.	Cairo University, Egypt	June 2008
Major: Mechanical Engineering		
Ranked 1st in class of ~300 GPA: 90.6%		
I.G.C.S.E.	Cambridge University, UK	June 2003
International General Certificate of Secondary Education		

PROFESSIONAL EXPERIENCE

Associate Professor, Dept. of Mechanical and Aerospace Engineering	Sept. 2020 - Present
University at Buffalo, State University of New York	Buffalo, NY
Affiliate Faculty, Dept. of Civil, Structural and Environmental Engineering	July 2023 - Present
University at Buffalo, State University of New York	Buffalo, NY
AFRL Summer Faculty Fellow	July 2023 - Sept. 2023
Air Force Research Laboratory, Wright Patterson AFB	Dayton, OH
Assistant Professor, Dept. of Mechanical and Aerospace Engineering	Aug. 2015 - Sept. 2020
University at Buffalo, State University of New York	Buffalo, NY
Postdoctoral Research Associate, Smart Materials & Structures Center	Aug. 2013 - Aug. 2015
University of Maryland, College Park	College Park, MD
Future Faculty Fellow, A. J. Clark School of Engineering	Jan. 2012 - May 2013
University of Maryland, College Park	College Park, MD
Research Assistant, Dept. of Mechanical Engineering	Sept. 2009 - Aug. 2013
University of Maryland, College Park	College Park, MD

Research Assistant, Dept. of Physics American University in Cairo	Sept. 2008 - Aug. 2009 Cairo, Egypt
Research Assistant, Energy Research Group, Dept. of Physics University of Oslo	June 2007 - Aug. 2007 Oslo, Norway
Mechanical Engineer, Home and Personal Care Factory Site Unilever Co.	July 2006 - Aug. 2006 Cairo, Egypt

RESEARCH INTERESTS

- **Acoustic and Elastic Metamaterials:**
Phononic crystals, wave propagation and dispersion in periodic media, frequency band gaps, topological and non-reciprocal metamaterials
- **Smart and Adaptive Material Systems and Structures:**
Energy harvesting, acoustic wave guidance, structural health monitoring, shape memory alloys and polymers, piezoelectric materials
- **Vibration and Noise Control:**
Vibration damping, constitutive damping models, time and frequency domain analyses, viscoelastic materials and composites, metadamping and dissipation
- **Thermoacoustic Energy Conversion:**
Dynamics of thermoacoustic engines, thermoacoustic power generation, thermoacoustic refrigeration and cooling, onset of thermoacoustic waves

HONORS & AWARDS

Major Awards

- 09/2024 **UMD Early Career Distinguished Alumni Award**
For A. J. Clark School of Engineering alumni who are at the forefront of their respective fields
- 07/2024 **UB Exceptional Scholar - Sustained Achievement Award**
For unprecedented accomplishments in a senior scholar's career; distinguishing a body of work of enduring importance that has gone beyond the norm in a particular field of study
- 01/2024 **Elected ASME Fellow**
- 02/2023 **UB President Emeritus and Mrs. Meyerson Award**
For distinguished undergraduate teaching and mentoring
- 09/2022 **Adaptive Structures and Material Systems Best Paper Award**
American Society of Mechanical Engineers (ASME)
J. Callanan et al., Smart Mat. Struct. 31, 015002 (2022)
- 08/2022 **Adaptive System Dynamics and Control Best Paper Award**
American Society of Mechanical Engineers (ASME)
J. Callanan et al., Smart Mat. Struct. 31, 015002 (2022)
- 10/2021 **Research Mentor of the Year Award**
Collegiate Science and Technology Entry Program (CSTEP)

- 09/2021 **Adaptive Structures and Material Systems Best Paper Award**
American Society of Mechanical Engineers (ASME)
M. A. Attarzadeh et al., Phys. Rev. Appl. 13, 021001 (2020)
- 09/2020 **Gary Anderson Early Achievement Award**
American Society of Mechanical Engineers (ASME)
For notable contributions to the field of Adaptive Structures and Material Systems by a young researcher in their ascendancy whose work has had an impact
- 07/2020 **UB Exceptional Scholar - Young Investigator Award**
To junior faculty whose work has garnered public and/or professional accolades beyond the norm for other bodies of work in the identified genre
- 06/2019 **ONR Phononics Fellowship Award**
- 02/2019 **NSF CAREER Award**
- 12/2018 **SEAS Early Career Teacher of the Year Award**
- 05/2018 **Vibration Institute Academic Award**

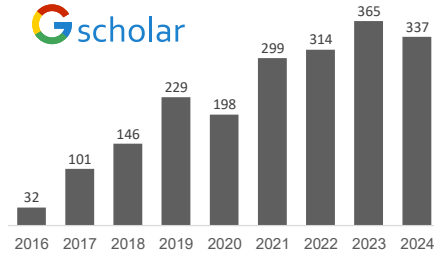
Other Honors & Recognitions

- 03/2024 **JASA Editor-in-Chief Technical Area Pick**
L. Katch et al., J. Acoust. Soc. Am. 154, 5 (2024)
- 07/2023 **AFRL Summer Faculty Fellowship Award**
- 08/2021 **UB Buffalo Blue Sky Bronze Coin**
- 11/2020 **Noise Control and Acoustics Division Best Conference Paper Award**
American Society of Mechanical Engineers (ASME)
R. Adlakha et al., IMECE vol. 84478, p. V001T01A016 (2020)
- 08/2018 **UB Buffalo Blue Sky Gold Coin**
- 03/2018 **“Lunch with the Experts” Invited Guest**
SPIE Smart Structures/NDE Conference
- 12/2016 **Outstanding Reviewer of Applied Acoustics**
- 01/2012 – 05/2013 **UMD Future Faculty Fellowship**
Awarded by the University of Maryland to select A. J. Clark School of Engineering doctoral students to prepare them for career-long success in academia
- 05/2012 **Outstanding Scholar-Athlete Award**
By the Collegiate Water Polo Association for student athletes of outstanding academic progress
- 04/2012 **UMD 2012 School of Engineering Sustainability Competition - 1st Place**
- 04/2011 **UMD 2011 School of Engineering Sustainability Competition - 2nd Place**
- 07/2008 – 08/2009 **KAUST-AUC Fellowship**
Jointly awarded by King Abdullah University of Science & Technology and the American University in Cairo
- 06/2007 **Cairo University Ideal Engineering Student Award**
- 05/2006 **Schlumberger Scholarship Award for Academic Excellence**

PUBLICATIONS

Orcid ID: 0000-0002-2135-5391, Researcher ID: R-6966-2019

Google Scholar: <https://goo.gl/Yk2cfd>



Aug. 31, 2015

(Joined UB)

Citations: 91

h-index: 3

i10-index: 4

Aug. 31, 2020

(Assoc. Prof.)

Citations: 690

h-index: 13

i10-index: 19

Feb. 9, 2025

(Now)

Citations: 2202

h-index: 25

i10-index: 49

Refereed Journal Papers

M. Nough's UG/G students underlined once, postdocs are underlined twice. Corresponding author denoted by (*).

2025

- J64. R. Schmidt, H. Yousef, I. Roy, C. Scalo, and M. Nough*, Perturbation Energy Extraction from a Fluid via a Subsurface Acoustic Diode with Sustained Downstream Attenuation, *Journal of Applied Physics*, 137, 054901 (2025)

2024

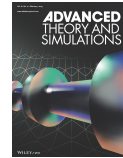
- J63. M. Mousa and M. Nough*, Parallel Mechanical Computing: Metamaterials that Can Multitask, *Proceedings of the National Academy of Sciences*, 121(52), e2407431121 (2024)
- J62. M. Lowry, C. L. Willey, V. W. Chen, M. Nough, and A. T. Juhl*, Passive Low-Frequency Vibration Mitigation in Large Space Structures, *MRS Communications*, 14(5), 1007-1014 (2024)
- J61. M. Mousa, E. Fort, and M. Nough*, First Experimental Realization of a Thermoacoustic-based Flue-gas Analyzer, *Journal of Sound and Vibration*, 589, 118571 (2024)
- J60. M. Moghaddaszadeh, M. Mousa, A. Aref, and M. Nough*, Mechanical Intelligence via Fully Reconfigurable Elastic Neuromorphic Metasurfaces, *APL Materials*, 12, 051117 (2024)
- J59. H. Al-Babaa, H. Yousef, and M. Nough*, A Blueprint for Truncation Resonance Placement in Elastic Diatomic Lattices with Unit Cell Asymmetry, *JASA Express Letters*, 4(7), 077501 (2024)
- J58. H. Al-Babaa and M. Nough*, The Role of Frequency and Impedance Contrasts in Bandgap Closing and Formation Patterns of Axially-vibrating Phononic Crystals, *Journal of Applied Mechanics*, 91(3), 031006 (2024)
- J57. R. Iqbal, A. Behjat, R. Adlakha, J. Callanan, M. Nough, and S. Chowdhury*, Auto-differentiable Transfer Mapping Architecture for Physics-infused Learning of Acoustic Field, *IEEE Transactions on Artificial Intelligence*, 5(3), 1132-1146 (2024)

2023

- J56. J. Callanan, R. Adlakha, M. Mousa, and M. Nouh*, Traveling Wave Thermoacoustic Refrigeration with Variable Phase-Controlled Boundary Conditions, *Journal of the Acoustical Society of America*, 154(6), 3943-3954 (2023)
- J55. M. Moghaddaszadeh, A. Ragonese, Y. Hu, Z. Guo, A. Aref, C. Zhou, S. Ren, and M. Nouh*, Local Resonance Bandgap Control in a Particle-aligned Magnetorheological Metamaterial, *Communications Materials*, 4, 94 (2023)
- J54. L. Katch, M. Moghaddaszadeh, C. L. Willey, A. T. Juhl, M. Nouh, and A. P. Argüelles*, Analysis of Geometric Defects in Square Locally Resonant Phononic Crystals: A Comparative Study of Modeling Approaches, *Journal of the Acoustical Society of America*, 154(5), 3052-3061 (2023)

(JASA Editor-in-Chief - 2023 Technical Area Pick)

- J53. R. Adlakha and M. Nouh*, On-demand Harmonic Wave Suppression in Non-Hermitian Space-time-periodic Phased Arrays, *Smart Materials and Structures*, 32, 074001 (2023)
- J52. H. Al-Babaa, C. L. Willey, V. W. Chen, J. Liu, A. T. Juhl, and M. Nouh*, Theory of Truncation Resonances in Continuum Rod-based Phononic Crystals with Generally Asymmetric Unit Cells, *Advanced Theory and Simulations*, 6(2), 2200700, 1-17 (2023)



(February 2023 Cover Feature)

- J51. R. Adlakha, W. Liu, S. Chowdhury, M. Zheng, and M. Nouh*, Integration of Acoustic Compliance and Noise Mitigation in Indoor Path Planning for Drones in Human-robot Collaborative Environments, *Journal of Vibration and Control*, 29(19-20), 47571-4771 (2023)

2022

- J50. Y. Hu, J. L. Gottfried, R. Pesce-Rodriguez, C. Wu, S. D. Walck, Z. Liu, S. Balakrishnan, S. Broderick, Z. Guo, Q. Zhang, L. An, R. Adlakha, M. Nouh, C. Zhou, P. W. Chung, and S. Ren*, Releasing Chemical Energy in Spatially Programmed Ferroelectrics, *Nature Communications*, 13, 6959 (2022)
- J49. M. Moghaddaszadeh, M. A. Attarzadeh, A. Aref, and M. Nouh*, Complex Spatiotemporal Modulations and Non-Hermitian Degeneracies in \mathcal{PT} -symmetric Phononic Materials, *Physical Review Applied*, 18, 044013 (2022)
- J48. A. Aladwani, M. Nouh, and M. I. Hussein*, State-space Bloch Mode Synthesis for Fast Band-structure Calculations of Non-classically Damped Phononic Materials, *Computer Methods in Applied Mechanics and Engineering*, 396, 115018 (2022)
- J47. J. Callanan, C. L. Willey, V. W. Chen, J. Liu, M. Nouh, and A. T. Juhl*, Uncovering Low Frequency Band Gaps in Electrically Resonant Metamaterials through Tuned Dissipation and Negative Impedance Conversion, *Smart Materials and Structures*, 31, 015002 (2022)

(ASME Adaptive Structures and Material Systems 2022 Best Paper Award)

- J46. A. Stein, M. Nouh, and T. Singh*, Widening, Transition and Coalescence of Local Resonance Band Gaps in Multi-resonator Acoustic Metamaterials: From Unit Cells to Finite Chains, *Journal of Sound and Vibration*, 523, 116716 (2022)

- J45. A. Aladwani*, A. Mohammed, and M. Nouh, Tunable Dissipation in Elastic Metamaterials via Methodic Reconfiguration of Inertant Mechanical Networks, *Meccanica*, 57(6), 1337-1352 (2022)

2021

- J44. M. Moghaddaszadeh, R. Adlakha, M. A. Attarzadeh, A. Aref, and M. Nouh*, Nonreciprocal Elastic Wave Beaming in Dynamic Phased Arrays, *Physical Review Applied*, 16, 034033 (2021)
- J43. J. Callanan, R. Iqbal, R. Adlakha, A. Behjat, S. Chowdhury, and M. Nouh*, Large-aperture Experimental Characterization of the Acoustic Field Generated by a Hovering Unmanned Aerial Vehicle, *Journal of the Acoustical Society of America*, 150(3), 2046-2057 (2021)
- J42. M. Oddiraju, A. Behjat, M. Nouh, and S. Chowdhury*, Inverse Design Framework with Invertible Neural Networks for Passive Vibration Suppression in Phononic Structures, *Journal of Mechanical Design*, 144(2), 021707 (2021)
- J41. A. Ragonese and M. Nouh*, Prediction of Local Resonance Band Gaps in 2D Elastic Metamaterials via Bloch Mode Identification, *Wave Motion*, 105, 102734 (2021)
- J40. A. Aladwani and M. Nouh*, Strategic Damping Placement in Viscoelastic Bandgap Structures: Dissecting the Metadamping Phenomenon in Multiresonator Metamaterials, *Journal of Applied Mechanics*, 88(2), 021003 (2021)

2020

- J39. R. Adlakha, M. Moghaddaszadeh, M. A. Attarzadeh, A. Aref, and M. Nouh*, Frequency Selective Wave Beaming in Nonreciprocal Acoustic Phased Arrays, *Scientific Reports*, 10, 21339 (2020)
- J38. Y. Hu, Z. Guo, A. Ragonese, T. Zhu, S. Khuje, C. Li, J. C. Grossman, C. Zhou*, M. Nouh*, and S. Ren*, A 3D-Printed Molecular Ferroelectric Metamaterial, *Proceedings of the National Academy of Sciences*, 117(44), 27204 (2020)
- J37. J. Callanan, P. Ghassemi, J. DiMartino, M. Dhameliya, C. Stocking, M. Nouh, and S. Chowdhury*, Ergonomic Impact of Multi-rotor Unmanned Aerial Vehicle Noise in Warehouse Environments, *Journal of Intelligent & Robotic Systems*, 100, 1309-1323 (2020)
- J36. M. A. Attarzadeh, J. Callanan, and M. Nouh*, Experimental Observation of Nonreciprocal Waves in a Resonant Metamaterial Beam, *Physical Review Applied*, 13, 021001 (2020)

(ASME Adaptive Structures and Material Systems 2020 Best Paper Award)

- J35. H. Al-Babaa, S. Nandi, T. Singh, and M. Nouh*, Uncertainty Quantification of Tunable Elastic Metamaterials using Polynomial Chaos, *Journal of Applied Physics*, 127, 015102 (2020)
- J34. A. Aladwani and M. Nouh*, Mechanics of Metadamping in Flexural Dissipative Metamaterials: Analysis and Design in Frequency and Time Domains, *International Journal of Mechanical Sciences*, 173, 105459 (2020)

2019

- J33. H. Al-Babaa, M. Nouh*, and T. Singh, Dispersion and Topological Characteristics of Permutative Polyatomic Phononic Crystals, *Proceedings of the Royal Society A*, 475, 2226 (2019)
- J32. M. A. Attarzadeh, S. Maleki, J. L. Crassidis, and M. Nouh*, Non-reciprocal Wave Phenomena in Energy Self-reliant Gyric Structures, *Journal of the Acoustical Society of America*, 146(1), 789-801 (2019)

- J31. H. Al-Babaa, J. Callanan, and M. Nouh*, Emergence of Pseudo-Phononic Gaps in Periodically Architected Pendulums, *Frontiers in Materials*, 6, 119 (2019)
- J30. J. Callanan and M. Nouh*, Optimal Thermoacoustic Energy Extraction via Temporal Phase Control and Traveling Wave Generation, *Applied Energy*, 241, 599-612 (2019)
- J29. H. Al-Babaa and M. Nouh*, Control of Spatial Wave Profiles in Finite Lattices of Repelling Magnets, *Journal of Dynamic Systems, Measurement, and Control*, 141(11), 111015 (2019)
- J28. A. Aladwani, A. Almandeel, and M. Nouh*, Fluid-Structural Coupling in Metamaterial Plates for Vibration and Noise Mitigation in Acoustic Cavities, *International Journal of Mechanical Sciences*, 159, 151-166 (2019)
- J27. W. Akl, M. Nouh, O. Aldraihem, and A. Baz*, Energy Dissipation Characteristics of Polyurea and Polyurea/Carbon Black Composites, *Mechanics of Time-Dependent Materials*, 23(2), 223-247 (2019)

2018

- J26. C. Bacquet, H. Al-Babaa, M. Frazier, M. Nouh, and M. I. Hussein*, Metadamping: Dissipation Emergence in Elastic Metamaterials, *Advances in Applied Mechanics*, 51, 115-164 (2018)
- J25. M. A. Attarzadeh and M. Nouh*, Elastic Wave Propagation in Moving Phononic Crystals and Correlations with Stationary Spatiotemporally Modulated Systems, *AIP Advances*, 8, 105302 (2018)
- J24. H. Al-Babaa, J. Callanan, M. Nouh*, and T. Singh, Band Gap Synthesis in Elastic Monatomic Lattices via Input Shaping, *Meccanica*, 53(11), 3105-3122 (2018)
- J23. M. A. Attarzadeh and M. Nouh*, Non-reciprocal Elastic Wave Propagation in 2D Phononic Membranes with Spatiotemporally Varying Material Properties, *Journal of Sound and Vibration*, 422, 264-277 (2018)
- J22. H. Al-Babaa, D. DePauw, T. Singh, and M. Nouh*, Dispersion Transitions and Pole-zero Characteristics of Finite Inertially Amplified Acoustic Metamaterials, *Journal of Applied Physics*, 123, 105106 (2018)
- J21. H. Al-Babaa, M. A. Attarzadeh, and M. Nouh*, Experimental Evaluation of Structural Intensity in Two Dimensional Plate-type Locally Resonant Elastic Metamaterials, *Journal of Applied Mechanics*, 85(4), 041005 (2018)
- J20. M. A. Attarzadeh, H. Al-Babaa, and M. Nouh*, On the Wave Dispersion and Non-reciprocal Power Flow in Space-time Traveling Acoustic Metamaterials, *Applied Acoustics*, 133, 210-214 (2018)
- J19. D. DePauw, H. Al-Babaa, and M. Nouh*, Metadamping and Energy Dissipation Enhancement via Hybrid Phononic Resonators, *Extreme Mechanics Letters*, 18, 36-44 (2018)
- J18. M. H. Ansari*, M. A. Attarzadeh, M. Nouh, and M. A. Karami, Application of Magnetoelastic Materials in Spatiotemporally Modulated Phononic Crystals for Nonreciprocal Wave Propagation, *Smart Materials and Structures*, 27, 015030 (2018)

2017

- J17. H. Al-Babaa, M. Nouh*, and T. Singh, Pole Distribution in Finite Phononic Crystals: Understanding Bragg-effects through Closed-form System Dynamics, *Journal of the Acoustical Society of America*, 142(3), 1399-1412 (2017)

- J16. H. Al-Babaa, M. Nouh*, and T. Singh, Formation of Local Resonance Band Gaps in Finite Acoustic Metamaterials: A Closed-form Transfer Function Model, *Journal of Sound and Vibration*, 410, 429-446 (2017)
- J15. M. Nouh*, On the Spatial Sampling and Beat Effects in Discrete Wave Profiles of Locally Resonant Acoustic Metamaterials, *Journal of the Acoustical Society of America*, 141(3), 1514-1522 (2017)
- J14. H. Al-Babaa and M. Nouh*, Mechanics of Longitudinal and Flexural Locally Resonant Elastic Metamaterials using a Structural Power Flow Approach, *International Journal of Mechanical Sciences*, 122, 341-354 (2017)
- J13. H. Al-Babaa and M. Nouh*, An Investigation of Vibrational Power Flow in One-Dimensional Dissipative Phononic Structures, *Journal of Vibration and Acoustics*, 139(2), 021003 (2017)

2012 – 2016

- J12. M. Nouh, O. Aldraihem, and A. Baz*, Periodic Metamaterial Plates with Smart Tunable Local Resonators, *Journal of Intelligent Material Systems and Structures*, 27(13), 1829-1845 (2016)
- J11. M. Nouh, O. Aldraihem, and A. Baz*, Wave Propagation in Metamaterial Plates with Periodic Local Resonances, *Journal of Sound and Vibration*, 341, 53-73 (2015)
- J10. M. Nouh, O. Aldraihem, and A. Baz*, Vibration Characteristics of Metamaterial Beams with Periodic Local Resonances, *Journal of Vibration and Acoustics*, 136(6), 061012 (2014)
- J9. M. Nouh, O. Aldraihem, and A. Baz*, Onset of Oscillations in Traveling Wave Thermoacoustic-Piezoelectric Harvesters using Circuit Analogy and SPICE Modeling, *Journal of Dynamic Systems, Measurement, and Control*, 136(6), 061005 (2014)
- J8. M. Nouh, O. Aldraihem, and A. Baz*, Piezo-driven Thermoacoustic Refrigerators with Dynamic Magnifiers, *Applied Acoustics*, 83, 86-99 (2014)
- J7. M. Nouh, O. Aldraihem, and A. Baz*, Transient Characteristics and Stability Analysis of Standing Wave Thermoacoustic-Piezoelectric Harvesters, *Journal of the Acoustical Society of America*, 135(2), 669-679 (2014)
- J6. M. Nouh, O. Aldraihem, and A. Baz*, Theoretical Modeling and Experimental Realization of Dynamically Magnified Thermoacoustic-Piezoelectric Energy Harvesters, *Journal of Sound and Vibration*, 333, 3138-3152 (2014)
- J5. M. Nouh*, N. Arafa, and E. Abdel-Rahman, Stack Parameters Effect on the Performance of Anharmonic Resonator Thermoacoustic Heat Engine, *Archive of Mechanical Engineering*, 61(1), 115-127 (2014)
- J4. M. Nouh, O. Aldraihem, and A. Baz*, Optimum Design of Thermoacoustic-Piezoelectric Energy Harvesters with Dynamic Magnifiers, *Engineering Optimization*, 46(4), 543-561 (2014)
- J3. A. Roshwalb, M. Nouh, O. Aldraihem, and A. Baz*, Performance of a Traveling Wave Thermoacoustic-Piezoelectric Energy Harvester: An Electrical Circuit Analogy Approach, *Journal of Intelligent Material systems and Structures*, 25(11), 1372-1383 (2014)
- J2. M. Nouh, O. Aldraihem, and A. Baz*, Energy Harvesting of Thermoacoustic-Piezo Systems with a Dynamic Magnifier, *Journal of Vibration and Acoustics*, 134(6), 061015 (2012)
- J1. J. Smoker, M. Nouh, O. Aldraihem, and A. Baz*, Energy Harvesting from a Standing Wave Thermoacoustic-Piezoelectric Resonator, *Journal of Applied Physics*, 111, 104901 (2012)

Conference Proceedings and Presentations

M. Nough's UG/G students underlined once, postdocs are underlined twice.

(*) indicates virtual format due to COVID-19.

- C71. M. Mousa, E. Fort, and M. Nough, Memory-integrated Wave-based Mechanical Computing Circuits , SPIE Smart Structures/NDE, International Society for Optics and Photonics, Vancouver, Canada, March 17-20, 2025
- C70. H. Yousef, R. Schmidt, A. Boueri, I. Roy, C. Scalo, and M. Nough, Attenuation of Tollmien-Schlichting Waves using a Subsurface Acoustic Diode, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Vancouver, Canada, March 17-20, 2025
- C69. M. Moghaddaszadeh, M. Mousa, and M. Nough, Analog Dual Classifier Neural Networks with a Time-modulated Neuromorphic Metasurface, ASME International Mechanical Engineering Congress and Exposition (IMECE), Portland, OR, November 17 - 21, 2024
- C68. C. L. Willey, V. W. Chen, M. Lowry, M. Nough, and A. T. Juhl, Vibration Reduction of a Frame by Pendant Phononic Crystals, ASME International Design Engineering Technical Conferences (IDETC), Washington DC, August 25-28, 2024
- C67. M. Mousa, M. Moghaddaszadeh, A. Aref, and M. Nough, Mechanical Intelligence via Adaptive Reconfigurable Neuromorphic Metasurfaces, 33rd International Conference on Adaptive Structures and Technologies (ICAST), Atlanta, GA, May 20-22, 2024
- C66. R. Schmidt, I. Roy, H. Yousef, A. Aboueria, C. Scalo, and M. Nough, Energy Absorption from an Oscillating Fluid using an Engineered Acoustic Diode, 186th Meeting of the Acoustical Society of America, Ottawa, Canada, May 13-17, 2024

(ASA Meeting – Invited Talk)

- C65. H. Al-Babaa, H. Yousef, and M. Nough, A Roadmap for Truncation Resonance Placement in Lattice-based Phononic Materials, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 25-28, 2024
- C64. M. Mousa and M. Nough, Parallel Mechanical Computing via Temporally Modulated Metasurfaces, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 25-28, 2024
- C63. M. Moghaddaszadeh, M. Mousa, R. Adlakha, M. A. Attarzadeh, A. Aref, and M. Nough, Spatiotemporal Modulations in Acoustics: From Nonreciprocity to Mechanical Computing, 185th Meeting of the Acoustical Society of America, Sydney, Australia, December 4-8, 2023

(Acoustics'23 Sydney – Invited Talk)

- C62. H. Al-Babaa and M. Nough, Bandgap Formation Patterns in Phononic Crystals, ASME International Mechanical Engineering Congress and Exposition (IMECE), New Orleans, LA, October 29 - November 2, 2023
- C61. M. Mousa, M. Moghaddaszadeh, A. Aref, and M. Nough, An Elastic Neuromorphic Metasurface, 59th Annual Technical Meeting of the Society of Engineering Science (SES2023), Minneapolis, MN, October 8-11, 2023
- C60. L. Katch, M. Moghaddaszadeh, C. Willey, A. Juhl, M. Nough, and A.P. Argüelles, Defect Inspection in Phononic Crystals using Semi-analytical Approaches, 31st American Society for Nondestructive

Testing (ASNT) Research Symposium, Columbus, OH, June 26-30, 2023

- C59. M. Moghaddaszadeh, R. Adlakha, M. A. Attarzadeh, A. Aref, and M. Nouh, Temporally Modulated Phase Gradient Systems: Towards Frequency-selective Acoustic Wave Beaming, Phononics 2023: 6th International Conference on Phononic Crystals / Metamaterials / Metasurfaces, Phonon Transport, and Topological Phononics, Manchester, England, June 12-16, 2023

(Phononics'23 Manchester – Invited Talk)

- C58. M. Lowry, R. Adlakha, and M. Nouh, Performance Prediction of Dual-periodic Acoustic Metamaterials via a Hybrid Physics and Data Driven Approach, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 12-16, 2023
- C57. M. Moghaddaszadeh, M. Mousa, A. Aref, and M. Nouh, A Reconfigurable Elastic Neuromorphic Metasurface, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 12-16, 2023
- C56. E. Fort, M. Mousa, and M. Nouh, An Experimental Realization of a Thermoacoustic-based Gas Analyzer, ASME International Mechanical Engineering Congress and Exposition (IMECE), Columbus, OH, October 30 - November 3, 2022
- C55. M. Moghaddaszadeh, A. Ragonese, Y. Hu, Z. Guo, A. Aref, C. Zhou, S. Ren, and M. Nouh, Local Resonance Bandgap Tunability in an Anisotropic Magnetorheological Metamaterial, ASME International Mechanical Engineering Congress and Exposition (IMECE), Columbus, OH, October 30 - November 3, 2022
- C54. R. Adlakha and M. Nouh, Direction-Selective Harmonic Wave Suppression in Non-Hermitian Acoustic Phased Arrays, ASME International Mechanical Engineering Congress and Exposition (IMECE), Columbus, OH, October 30 - November 3, 2022
- C53. A. Stein, M. Nouh, and T. Singh, Conditions and Mechanisms of Local Resonance Band Gap Merging in Dual-Periodic Acoustic Metamaterials, ASME International Mechanical Engineering Congress and Exposition (IMECE), Columbus, OH, October 30 - November 3, 2022
- C52. M. Moghaddaszadeh, M. A. Attarzadeh, A. Aref, and M. Nouh, Exploiting Non-Hermitian Degeneracies in PT-symmetric Phononic Materials: A Comprehensive Treatment of Complex Spatiotemporal Modulations, 58th Annual Technical Meeting of the Society of Engineering Science (SES2022), College Station, TX, October 16-19, 2022
- C51. J. Prendergast, M. Oddiraju, M. Nouh, and S. Chowdhury, Conceptual Design of Cellular Auxetic Systems with Passive Adaptation to Loading, ASME International Design Engineering Technical Conferences (IDETC), St. Louis, MO, August 14-17, 2022
- C50. M. Oddiraju, M. Nouh, and S. Chowdhury, Efficient Inverse Design of Heterogeneous Locally Resonant Elastic Metamaterials for Targeted Vibration Suppression, 2022 AIAA Aviation Forum, Chicago, IL, June 27-30, 2022
- C49. M. Nouh, Multichannel Frequency-selective Beaming in Time-modulated Electroacoustic Phased Arrays, 182nd Meeting of the Acoustical Society of America, Denver, CO, May 23-27, 2022

(ASA Meeting – Invited Talk)

- C48. A. Aladwani, M. Nouh, and M. I. Hussein, Efficient Band-structure Calculations of Non-classically Damped Phononic Materials by Bloch Mode Synthesis in State Space, 182nd Meeting of the Acoustical Society of America, Denver, CO, May 23-27, 2022

- C47. J. Callanan, C. L. Willey, V. W. Chen, J. Liu, M. Nouh, and A. T. Juhl, Tunable Dispersion and Metadamping Characteristics of a Magnetically Coupled Electromechanical Metamaterial Chain, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 6-10, 2022
- C46. M. Moghaddaszadeh, R. Adlakha, M. A. Attarzadeh, A. Aref, and M. Nouh, Nonreciprocal Guided Wave Steering via a Space-time Elastic Phased Array, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 6-10, 2022
- C45. R. Iqbal, A. Behjat, R. Adlakha, J. Callanan, M. Nouh, and S. Chowdhury, Efficient Training of Transfer Mapping in Physics-Infused Machine Learning Models of UAV Acoustic Field, AIAA SciTech Forum, January 3-7, 2022*
- C44. A. Stein, M. Nouh, and T. Singh, Multi-Resonator Elastic Metamaterials: From Series and Parallel to Hybrid Configurations, ASME International Mechanical Engineering Congress and Exposition (IMECE), November 1-4, 2021*
- C43. M. Oddiraju, A. Behjat, M. Nouh, and S. Chowdhury, Efficient Inverse Design of 2D Elastic Metamaterial Systems using Invertible Neural Networks, 2021 AIAA Aviation Forum, Washington, DC, August 2-6, 2021*
- C42. J. Callanan, P. Ghassemi, J. DiMartino, M. Dhameliya, C. Stocking, M. Nouh, and S. Chowdhury, Ergonomic Impact of Multi-rotor Unmanned Aerial Vehicle Noise in Warehouse Environments, STRATUS 2021 Conference (Systems and Technologies for Remote Sensing Applications through Unmanned Aerial Systems), Buffalo, NY, May 17-19, 2021*
- C41. M. A. Attarzadeh and M. Nouh, Nonreciprocal Metastructures via Gyro-Parametric Excitation in Finite Coupled Resonators, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 7-10, 2021*
- C40. R. Adlakha, M. Moghaddaszadeh, M. A. Attarzadeh, A. Aref, and M. Nouh, Nonreciprocal Acoustic Phased Arrays, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Long Beach, CA, March 7-10, 2021*
- C39. R. Adlakha, M. Moghaddaszadeh, M. A. Attarzadeh, A. Aref, and M. Nouh, A Linear Acoustic Phased Array for Nonreciprocal Transmission and Reception, ASME International Mechanical Engineering Congress and Exposition (IMECE), Portland, OR, November 16-19, 2020*
- (IMECE 2020 - Best Student Paper Award)
- C38. M. Moghaddaszadeh, R. Adlakha, M. A. Attarzadeh, A. Aref, and M. Nouh, Space-time Elastic Metasurfaces for Nonreciprocal Wavefront Control, 57th Annual Technical Meeting of the Society of Engineering Science (SES2020), Minneapolis, MN, September 28-30, 2020*
- C37. H. Al-Babaa, J. Callanan, and M. Nouh, Wave Mitigation in Pseudo-periodic Metastructures: A Closer Look at Architected Pendulums, 57th Annual Technical Meeting of the Society of Engineering Science (SES2020), Minneapolis, MN, September 28-30, 2020*
- C36. A. Behjat, M. Oddiraju, M. A. Attarzadeh, M. Nouh, and S. Chowdhury, Metamodel Based Forward and Inverse Design for Passive Vibration Suppression, ASME International Design Engineering Technical Conferences (IDETC), St. Louis, MO, August 16-19, 2020*
- C35. M. Moghaddaszadeh, K. Atefi-Monfared, A. Aref, and M. Nouh, Omnidirectional Wave Mitigation Using Elastic Metamaterials in Axisymmetric Arrangements, Engineering Mechanics Institute (EMI)

Conference, New York, NY, May 26-29, 2020*

- C34. A. Ragonese and M. Nough, System Identification of Unit Cell Bloch Modes in 2D Metamaterials, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Anaheim, CA, April 26-30, 2020*
- C33. J. Callanan and M. Nough, Piezoelectric Feedback Control of Resonant Waves in Thermoacoustic Energy Harvesters, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Anaheim, CA, April 26-30, 2020*
- C32. M. A. Attarzadeh and M. Nough, Non-Reciprocal Transmission by Gyro-Parametric Excitation in Finite Coupled Resonators, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Anaheim, CA, April 26-30, 2020*
- C31. M. A. Attarzadeh, J. Callanan, and M. Nough, Non-reciprocal Wave Propagation in a Temporally Modulated Metabeam, ASME International Mechanical Engineering Congress and Exposition (IMECE), Salt Lake City, UT, November 8-14, 2019
- C30. M. A. Attarzadeh, J. Callanan, and M. Nough, Realization of a Non-reciprocal Metamaterial by Geometric Time-modulation, 56th Annual Technical Meeting of the Society of Engineering Science (SES2019), St. Louis, MO, October 13-15, 2019
- C29. M. A. Attarzadeh, J. Callanan, and M. Nough, Non-reciprocal Transmission of Vibrational Energy in a Locally Resonant Elastic Metabeam, Vibration Institute Annual Training Conference (VIATC), Lexington, KY, July 23-26, 2019
- C28. M. A. Attarzadeh and M. Nough, Realization of a Vibration Diode using a Temporally Modulated Metabeam, Phononics 2019: 5th International Conference on Phononic Crystals / Metamaterials / Metasurfaces, Phonon Transport, and Topological Phononics, AZ, June 3-7, 2019
- C27. H. Al-Babaa and M. Nough, Phononic Band Gap Effects in Finite Serially Pivoted Pendulum Chains, Phononics 2019: 5th International Conference on Phononic Crystals / Metamaterials / Metasurfaces, Phonon Transport, and Topological Phononics, Tucson, AZ, June 3-7, 2019
- C26. M. Nough, Exploring Finite Phononic Materials using Linear Systems Theory and Pole-zero Distributions, Phononics 2019: 5th International Conference on Phononic Crystals / Metamaterials / Metasurfaces, Phonon Transport, and Topological Phononics, Tucson, AZ, June 3-7, 2019

(Phononics'19 – Invited Talk)

- C25. M. A. Attarzadeh and M. Nough, Non-reciprocity in Time-periodic Phononic Materials with a Non-zero Moving Velocity, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Denver, CO, March 3-7, 2019
- C24. J. Callanan and M. Nough, Standing-to-traveling Wave Transition in Piezoelectric Thermoacoustic Energy Harvesters, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Denver, CO, March 3-7, 2019

(SPIE 2019 - Best Student Paper Award)

- C23. D. DePauw and M. Nough, Dispersion Mechanics of Inertially Amplified Acoustic Metamaterials, ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, November 9-15, 2018

(2018 NSF-REU ASME IMECE Competition)

- C22. H. Al-Babaa and M. Nouh, Experimental Investigation of Structural Power Flow in 2D Locally Resonant Elastic Metamaterials, ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, November 9-15, 2018

(2018 NSF-ASME IMECE Competition)

- C21. J. Callanan and M. Nouh, Control-based Power Amplification in Thermoacoustic Piezoelectric Energy Harvesting Devices, ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, November 9-15, 2018
- C20. J. Callanan, P. Ghassemi, J. DiMartino, C. Stocking, S. Chowdhury, and M. Nouh, Human Response and Perception of UAV Noise in Simulated Warehouse Environments, ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, November 9-15, 2018
- C19. M. A. Attarzadeh and M. Nouh, Universal Wave Manipulation by Periodic Gyro-Elastic Structures, ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, November 9-15, 2018
- C18. D. DePauw, H. Al-Babaa, and M. Nouh, Dispersion Behavior of a Hybrid Phononic Resonator, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Denver, CO, March 4-8, 2018
- C17. H. Al-Babaa, T. Singh, and M. Nouh, Interpreting Phononic Bragg Band Gaps through Finite System Dynamics and Transfer Functions, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Denver, CO, March 4-8, 2018
- C16. M. A. Attarzadeh and M. Nouh, Space-time Modulations of Material Property in Two Dimensional Phononic Crystals, ASME International Mechanical Engineering Congress and Exposition (IMECE), Tampa, FL, November 3-9, 2017
- C15. H. Al-Babaa and M. Nouh, Evolution of Power Flow Streamlines in Plate-type Elastic Metamaterials, ASME International Mechanical Engineering Congress & Exposition (IMECE), Tampa, FL, November 3-9, 2017
- C14. H. Al-Babaa, M. Nouh, and T. Singh, Towards a Comprehensive Understanding of Band Gap Emergence in Finite Inner-resonant Systems, ASME International Mechanical Engineering Congress & Exposition (IMECE), Tampa, FL, November 3-9, 2017
- C13. H. Al-Babaa, M. Nouh, and T. Singh, An Analytical Model for Band Gap Behavior in Lumped Elastic Metamaterials, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Portland, OR, March 25-29, 2017
- C12. H. Al-Babaa and M. Nouh, A Mechanical Power Dissipation Model for Axially-loaded Metamaterial Bars, SPIE Smart Structures/NDE, International Society for Optics and Photonics, Portland, OR, March 25-29, 2017
- C11. H. Al-Babaa and M. Nouh, Vibrational Power Flow in Spatially Continuous Elastic Metamaterials, ASME International Mechanical Engineering Congress & Exposition (IMECE), Phoenix, AZ, November 11-17, 2016
- C10. M. Nouh, Structural Intensity Analysis of Periodic Elastic Structures with Frequency Stop Bands, ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Stowe, VT, September 28-30, 2016
- C9. M. Nouh, O. Aldraihem, and A. Baz, Metamaterial Structures with Periodic Local Resonances, SPIE Smart Structures/NDE, International Society for Optics and Photonics, San Diego, CA, March 9-13,

2014

- C8. M. Nouh, O. Aldraihem, and A. Baz, Experimental Investigation of Thermoacoustic Piezoelectric Energy Harvesters and Refrigerators with Dynamic Magnifiers, ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Snowbird, UT, Sept. 16-18, 2013
- C7. M. Nouh, O. Aldraihem, and A. Baz, Analysis and Optimization of a Thermoacoustic-Piezoelectric Energy Harvester: An Electrical Circuit Analogy Approach, SPIE Smart Structures/NDE, International Society for Optics and Photonics, San Diego, CA, March 10-14, 2013
- C6. M. Nouh, O. Aldraihem, and A. Baz, Energy Harvesting of Vortex-induced Vibrations, SPIE Smart Structures/NDE, International Society for Optics and Photonics, San Diego, CA, March 11-15, 2012
- C5. D. Chinn, M. Nouh, and A. Baz, Piezoelectric Driven Thermo-acoustic Refrigerator, SPIE Smart Structures/NDE, International Society for Optics and Photonics, San Diego, CA, March 11-15, 2012
- C4. J. Smoker, M. Nouh, O. Aldraihem, and A. Baz, Energy Harvesting from a Standing Wave Thermo-Acoustic-Piezoelectric Resonator, 51st AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Orlando, FL, April 12-15 2010
- C3. M. Nouh, N. Arafa, and E. Abdel-Rahman, Stack Parameters Effect on the Performance of an Anharmonic Resonator Thermoacoustic Heat Engine, 3rd International Conference on Integration, Reliability and Failure (IRF), Porto, Portugal, July 20-24, 2009
- C2. M. Nouh, N. Arafa, K. Larsson, and E. Abdel-Rahman, Design Study of Anharmonic Standing Wave Thermoacoustic Heat Engine, 16th International Congress on Sound and Vibration, Krakow, Poland, July 5-9, 2009
- C1. N. Arafa, M. Nouh, and E. Abdel-Rahman, Design Study of Small Scale Thermoacoustic Heat Engine, 16th International Congress on Sound and Vibration, Krakow, Poland, July 5-9, 2009

Theses

- T1. M. Nouh, Thermoacoustic-Piezoelectric Systems with Dynamic Magnifiers, Ph.D. Dissertation, University of Maryland, College Park, MD 20742

Book Chapters & Monographs

- B4. C. Bacquet, H. Al-Babaa, M. Frazier, M. Nouh, and M. I. Hussein, **Chapter 2** – Metadamping: Dissipation Emergence in Elastic Metamaterials, Volume 51 (Advances in Crystals and Elastic Metamaterials, Part 1), 2018, ISBN (978-0-12-815100-6)
- B3. M. Nouh, O. Aldraihem and A. Baz, **Chapter 12** – Thermoacoustic Piezoelectric Energy Harvesters in *High Temperature Materials and Mechanisms*, Editor: Yoseph Bar Cohen, Publisher: CRC Press/Taylor and Francis Group, 2014, ISBN (978-1-4665- 6645-3)
- B2. M. Nouh, M. Eldeeb, W. Mostafa and M. Beshr, HVAC Design of a Healthcare Facility - Basic Concepts & Methodologies, LAP Academic Publishing 2010, ISBN (978-3-8433-5717-3)
- B1. M. Nouh, Testing New Material for Flat Polymer-based Solar Collectors: An Experimental Study, Annual IAESTE Report, University of Oslo, 2007

Editorials

- E2. M. Nouh, W. J. Parnell, and M. I. Hussein, Editorial for the Special Issue on “Emerging Trends in Phononic Crystals”, *Crystals*, 11, 911 (2021)
- E1. K. Loh, M. A. Karami, S. Anton, M. Nouh, E. Freeman, Y. Tummala, and J. Jovanova, Recent Advances in Adaptive and Active Materials 2017, *Smart Materials and Structures*, 27, 110201 (2018)

Patents

- P1. M. Nouh, M. A. Attarzadeh, and J. Callanan, Metamaterial with Temporally Varying Elastic Properties. U.S. Patent Application No. 17/507,798.

DIGITAL & ONLINE MEDIA

31. [Nouh inducted to the University of Maryland Clark School of Engineering Early Career Distinguished Alumni Society Class of '24](#) (Sept. 2024)
30. [Sunflowers architecting sound: Joint research team from UW and UB start an NSF-funded project to develop nature-inspired materials for superior noise control and acoustic wave absorption](#) (July 2024)
29. [Nouh receives UB Exceptional Scholar - Sustained Achievement Award](#) (July 2024)
28. [Nouh elected ASME fellow](#) (Feb. 2024)
27. [Nouh's student \(Mousa\) receives best poster award from the Society of Eng. Sciences](#) (Dec. 2023)
26. [Callanan and Nouh featured in the 2023 issue of the Buffalo Engineer magazine](#) (Nov. 2023)
25. [Paper by Nouh's team and AFRL collaborators featured on the February 2023 cover of Wiley's Advanced Theory and Simulation journal](#) (Feb. 2023)
24. [Nouh named recipient of the UB Meyerson award for distinguished mentoring](#) (Jan. 2023)
23. [Nouh's student \(Fort\) receives R.W. Young Award from the Acoust. Society of America](#) (Dec. 2022)
22. [Nouh's team and AFRL collaborators receive Best Paper Award in Mechanics and Materials Systems from ASME](#) (Nov. 2022)
21. [Nouh and collaborators featured in the 2021 issue of the Buffalo Engineer magazine](#) (Nov. 2021)
20. [Nouh receives CSTEP's Research Mentor of the Year award](#) (Oct. 2021)
19. [Nouh's student \(Callanan\) recognized for Dean's Graduate Achievement award](#) (Sept. 2021)
18. [UB researchers develop 3D-printed molecular ferroelectric metamaterials](#) (Oct. 2020)
17. [Nouh receives ASME Gary Anderson Early Achievement Award](#) (Sept. 2020)
16. [Nouh receives UB Exceptional Scholar - Young Investigator Award](#) (July 2020)
15. [UB research team break reciprocity in acoustic waves - UBNOW](#) (March 2020)
14. [Nouh's work on spacetime-varying metamaterials featured by the American Association for the Advancement of Science \(AAAS\) - EurekAlert!](#) (Feb. 2020)
13. [Nouh's work selected as a featured article in the Journal of Applied Physics](#) (Jan. 2020)
12. [Nouh awarded National Science Foundation CAREER award](#) (May 2019)

11. Nough's student (Callanan) receives SPIE Best Paper award (March 2019)
10. Nough awarded UB SEAS Early Career Teacher of the Year award (Dec. 2018)
9. Nough's student (Callanan) awarded BMW internship as part of NSF's INTERN program (Dec. 2018)
8. Nough to chair Track 1 of the 2019 ASME IMECE conference on Acoustics/Vibrations (Nov. 2018)
7. Nough's course on *Acoustics and Wave Propagation* featured in the Technische Universität (TU) Darmstadt's-UB handbook (Sept. 2018)
6. Nough's student (Callanan) wins Mr. Miyagi award for the best LSAMP summer program mentor (Aug. 2018)
5. Nough's student (Attarzadeh) earns 3rd place in SEAS graduate poster competition (April 2018)
4. Nough gives invited talk in Aerospace Engineering at the U. of Colorado Boulder (March 2018)
3. One-way Sound Propagation: Breaking Acoustic Reciprocity in 2D Materials (Feb. 2018)
2. Nough elected to Group Leadership Team of the Noise Control and Acoustics Division (NCAD) at ASME for a 5-year term (Aug. 2017)
1. Nough named a Future Faculty Fellow at the University of Maryland (Jan. 2012)

INVITED TALKS & SEMINARS

- 02/2025 **Mechanical Computing in Adaptive Materials: From Neuromorphic Intelligence to Parallel Information Processing**
University of Illinois Urbana-Champaign, Champaign, IL
- 01/2025 **Flow Control and Perturbation Extraction via a Subsurface Metamaterial-based Diode**
Joint Center for Aerospace Technology Innovation (JCATI), Seattle, WA
- 05/2024 **Faculty Mentor Perspective of Undergraduate Research and Graduate School (#5)**
Collegiate Science & Technology Entry Program (CSTEP), Buffalo, NY
- 03/2024 **Mechanical Computing: State of the Art and Future Directions**
Army Research Lab, Aberdeen Proving Ground, MD
- 03/2024 **Mechanical Wave-based Computing via Neuromorphic and Modulated Elastic Metasurfaces**
ONR Workshop on Acoustic Metamaterials, Penn State University, State College, PA
- 12/2023 **Parallel Mechanical Computing via Adaptive Wave Scattering**
ARO Workshop on Next Generation Processing in Extreme Environments, Army Research Lab, State Adelphi, MD
- 12/2023 **Spatiotemporal Modulations in Acoustics: From Nonreciprocity to Mechanical Computing**
Acoustics'23 Sydney, International Convention Centre, Sydney, Australia
- 06/2023 **Temporally Modulated Phase Gradient Systems: Towards Frequency-selective Acoustic Wave Beaming**
Phononics 2023, University of Manchester, Manchester, England

- 06/2023 **Faculty Mentor Perspective of Undergraduate Research and Graduate School (#4)**
Collegiate Science & Technology Entry Program (CSTEP), Buffalo, NY
- 05/2022 **Multichannel Frequency-selective Beaming in Electroacoustic Phased Arrays**
182nd Acoustical Society of America Meeting, Denver, CO
- 05/2022 **Faculty Mentor Perspective of Undergraduate Research and Graduate School (#3)**
Collegiate Science & Technology Entry Program (CSTEP), Buffalo, NY
- 04/2022 **Nonreciprocal Mechanics of Space-time Periodic Structures: From Elastic Metamaterials to Acoustic Phased Arrays**
University of California San Diego, San Diego, CA
- 10/2021 **Nonreciprocity in Acoustics: A One-Way Street for Sound Waves**
University of Vermont, Burlington, VT
- 06/2021 **Faculty Mentor Perspective of Undergraduate Research and Graduate School (#2)**
Collegiate Science & Technology Entry Program (CSTEP), Buffalo, NY
- 04/2021 **The Nuts and Bolts of Running Thriving Volunteer Teams**
ASME Group Leadership Development Conference (GLDC 20201) – Virtual
- 09/2020 **Wave Mitigation in Pseudo-periodic Metastructures: A Closer Look at Architected Pendulums**
Technical Meeting of the Society of Engineering Science (SES 2020) – Virtual
- 06/2020 **Faculty Mentor Perspective of Undergraduate Research and Graduate School (#1)**
Collegiate Science & Technology Entry Program (CSTEP), Buffalo, NY
- 10/2019 **Elastic Wave Control and Non-reciprocity in Tunable Phononic Metamaterials**
Air Force Research Laboratory (AFRL), Dayton, OH
- 09/2019 **Noise Regulation in Drones for Co-Robotic Environments: Investigating Impact on Human Hearing and Cognition**
“Four Years of Communities of Excellence at UB”, Buffalo, NY
- 07/2019 **Why Earn a Ph.D.?**
25th McNair Undergraduate Research Conference, Niagara Falls, NY
- 06/2019 **Exploring Finite Phononic Materials using Systems Theory and Pole-zero Distributions**
Phononics 2019 – University of Arizona, Tucson, AZ
- 02/2019 **Noise Regulation in Small Unmanned Aerial Vehicles: Towards Ergonomic Integration in Complex Warehouse Environments**
“Convergent Conversation” - SMART Community of Excellence, Buffalo, NY
- 07/2018 **Why Earn a Ph.D.?**
24th McNair Undergraduate Research Conference, Niagara Falls, NY
- 03/2018 **Dynamics of Periodic Media: Understanding Band Gap Evolution in Phononic Materials**
University of Colorado Boulder, Boulder, CO
- 10/2017 **Dynamics of Thermoacoustic Systems: Recent Progress and Future Outlook**
NSF “Acoustics: New Fundamentals/Applications” Workshop, Alexandria, VA

- 03/2015 **Wave Propagation and Vibration Characteristics of Metamaterial Structures with Periodic Resonators**
University at Buffalo, Buffalo, NY
- 02/2015 **Wave Propagation and Vibration Characteristics of Metamaterial Structures with Periodic Resonators**
University of Massachusetts, Lowell, MA
- 02/2015 **Broadband Vibration Attenuation in Elastic Metamaterials with Internal Resonators**
San Francisco State University, San Francisco, CA
- 02/2015 **Band-gap Control and Directional Filtering in Periodic Metastructures**
Southern Illinois University, Edwardsville, IL
- 02/2015 **Dynamics of Metamaterial Structures for Broadband Vibration Control and Suppression**
California State University, Fresno, CA
- 01/2015 **Metamaterials with Periodic Local Resonances for Vibration Suppression Applications**
Purdue University, West Lafayette, IN
- 04/2014 **Vibration Characteristics of Periodic Beams with Viscously-damped Internal Resonators**
University of Missouri, Columbia, MO
- 06/2013 **Energy Harvesting from Standing-wave Thermoacoustic-Piezoelectric Systems**
Graduate Student Association, University of Maryland, College Park, MD
- 03/2012 **Thermoacoustic Refrigeration: Recent Progress and Potential Improvements**
Spring Consortium Meetings of the Center for Environmental Engineering, University of Maryland, College Park, MD

TEACHING EXPERIENCE

(1) Assistant/Associate Professor

Aug. 2015 - Present

University at Buffalo, State University of New York

MAE 571: Systems Analysis:

Fall 2024	Instructor Evaluation: 4.9/5	(Dept. Average: 4.2/5)	Response Rate: 10/19
Fall 2015	Instructor Evaluation: 5/5	(Dept. Average: 4.-4/5)	Response Rate: 18/20

MAE 565: Acoustics & Wave Propagation: [Newly developed course]

Fall 2024	Instructor Evaluation: n/a		
Fall 2023	Instructor Evaluation: 5/5	(Dept. Average: 4.4/5)	Response Rate: 8/11
Fall 2020	Instructor Evaluation: n/a		
Fall 2019	Instructor Evaluation: 5/5	(Dept. Average: 4.2/5)	Response Rate: 10/16
Fall 2018	Instructor Evaluation: 5/5	(Dept. Average: 4.2/5)	Response Rate: 8/9

MAE 467/567: Vibration & Shock:

Fall 2024 (567)	Instructor Evaluation: n/a		
Fall 2021 (567)	Instructor Evaluation: 4.9/5	(Dept. Average: 4.2/5)	Response Rate: 20/28
Fall 2020 (567)	Instructor Evaluation: 4.9/5	(Dept. Average: 4.2/5)	Response Rate: 13/20
Fall 2019 (567)	Instructor Evaluation: 5/5	(Dept. Average: 4.2/5)	Response Rate: 13/21
Fall 2018 (567)	Instructor Evaluation: 5/5	(Dept. Average: 4.2/5)	Response Rate: 10/16
Fall 2017 (567)	Instructor Evaluation: 5/5	(Dept. Average: 4.1/5)	Response Rate: 12/18
Fall 2016	Instructor Evaluation: 4.64/5	(Dept. Average: 4.21/5)	Response Rate: 26/39

EAS 208: Dynamics:

Spring 2024	Instructor Evaluation: 4.8/5	(School Average: 4.2/5)	Response Rate: 18/56
Spring 2023	Instructor Evaluation: 4.8/5	(School Average: 4.3/5)	Response Rate: 16/58
Spring 2022	Instructor Evaluation: 4.7/5	(School Average: 4.3/5)	Response Rate: 35/120
Spring 2021	Instructor Evaluation: 4.9/5	(School Average: 4.3/5)	Response Rate: 33/99
Spring 2020	Instructor Evaluation: n/a		
Spring 2019	Instructor Evaluation: 4.9/5	(School Average: 4.2/5)	Response Rate: 37/77
Spring 2018	Instructor Evaluation: 4.9/5	(School Average: 4.1/5)	Response Rate: 32/90
Spring 2017	Instructor Evaluation: 5/5	(School Average: 4.0/5)	Response Rate: 34/62
Spring 2016	Instructor Evaluation: 4.97/5	(School Average: 3.29/5)	Response Rate: 32/63

(2) Adjunct Instructor

Jan. 2014 - Aug. 2015

University of Maryland, College Park

- ENME 361: Vibrations (Spring 2014, Summer 2014)
- ENME 462: Controls & Optimization (Summer 2013, Summer 2015)

(3) Teaching Assistant

Sept. 2011 - Dec. 2011

University of Maryland, College Park

- ENME 462: Controls & Optimization (Fall 2011)

(4) Assistant Lecturer

Sept. 2008 - May 2009

Cairo University, Egypt

- MEP 304: Heat & Mass Transfer (Spring 2009)
- MEP 407: Mechanical Engineering Laboratories (Spring 2009)
- MEP 302: Applied Thermodynamics (Fall 2008)

PROFESSIONAL MEMBERSHIP & SERVICE

• Intramural Service at UB

- SEAS Awards Committee (2024 – Present)

- SEAS Tenure Committee Substitute (2024 – Present)
- SEAS Qualified Rank Committee Substitute (2023 – Present)
- MAE Career Development Committees for Assistant Professors (2021 – Present)
- MAE Faculty Search Committee (2022 – 2023)
- MAE Graduate Studies Committee (2016 – 2022)
- MAE Ad hoc Productivity Committee (2022)
- MAE Faculty Search Committee (2021 – 2022)
- UB Director of Faculty Recognition Search Committee (2021)
- SEAS Presidential Fellowship Review Committee (2019)
- SENS Software Engineer Search Committee (2019)
- SENS IT Specialist Search Committee (2019)
- SEAS Mechanics Instructor Search Committee (2018)
- SEAS Adjudication Committee Chair (2018)
- **Society Membership**
 - American Society of Mechanical Engineers, ASME (2009 – Present; Elected Fellow in 2024)
 - International Society for Optics and Photonics, SPIE (2015 – Present)
 - Society of Engineering Science, SES (2019 – Present)
 - International Phononics Society, IPS (2019 – Present)
- **Scientific Community & Technical Committees**
 - Noise Control and Acoustics Division, ASME
 - Group Leadership Team (2017–2022)
 - Division Chair (2020 – 2021)
 - Technical Committee on Phononic Crystals & Metamaterials (2016 – Present)
 - Smart Materials, Adaptive Structures and Intelligent Systems Division, ASME (2022 – Present)
 - Adaptive Structures and Material Systems Branch (2016 – 2022)
 - Technical Committee on Energy Harvesting (2016 – Present)
 - Technical Committee on Vibration and Sound (TCVS), ASME (2022 – Present)
- **Proposal Reviewer**
 - National Science Foundation: CMMI – Dynamics, Control, and Systems Diagnostics (DCSD)
 - National Science Foundation: CMMI – Mechanics of Materials and Structures (MOMS)
 - National Science Foundation: CMMI – Design of Engineering Material Systems (DEMS)
 - National Science Foundation: CMMI – Engineering for Civil Infrastructure (ECI)
 - National Science Foundation: Graduate Research Fellowship Program (GRFP)
 - Office of Naval Research: MURI – Multidisciplinary University Research Initiatives Program

- Army Research Office
 - Netherlands Organization for Scientific Research (NWO) – Applied and Engineering Sciences
 - Singapore National Research Foundation
 - Oak Ridge Associated Universities (ORAU)
- **Editorship for Scientific Journals**
 - Associate Editor: Frontiers in Acoustics (2023 – Present)
 - Associate Editor: ASME Journal of Vibration and Acoustics (2020 – Present)
 - Guest Editor: Crystals – *Special Issue: Emerging Trends in Phononic Crystals* (2020)
 - Guest Editor: Smart Materials and Structures – *SMASIS Special Issue* (2019)
 - Guest Editor: Smart Materials and Structures – *SMASIS Special Issue* (2018)
- **Reviewer/Referee for Scientific Journals**
 - Nature Communications
 - Physical Review Letters
 - Physical Review Applied
 - Physical Review B
 - Applied Physics Letters
 - Journal of Applied Physics
 - Advanced Functional Materials
 - Scientific Reports
 - Journal of Sound and Vibration
 - Extreme Mechanics Letters
 - International Journal of Solids and Structures
 - Journal of Vibration and Acoustics*
 - Journal of Applied Mechanics*
 - Journal of Dynamic Systems, Measurement and Control*
 - Journal of Mechanisms and Robotics*
 - Journal of Computational and Nonlinear Dynamics*
 - Journal of Computing and Information Science in Engineering*
 - Journal of the Acoustical Society of America †
 - AIAA Journal ‡
 - Applied Acoustics
 - Wave Motion

*Transactions of the American Society of Mechanical Engineers (ASME)

†Transactions of the Acoustical Society of America (ASA)

‡Transactions of the American Institute of Aeronautics and Astronautics (AIAA)

- Waves in Random and Complex Media
- Acta Mechanica
- Mechanics of Materials
- Mechanics of Advanced Materials and Structures
- Journal of Physics D: Applied Physics
- Journal of Intelligent Material Systems and Structures
- Smart Materials and Structures
- Composite Structures
- Shock and Vibration
- IEEE Access
- Mechanical Systems and Signal Processing
- International Journal of Non-linear Mechanics
- Journal of Low Frequency Noise Vibration and Active Control
- Finite Elements in Analysis and Design
- Thin-Walled Structures
- Energy Conversion and Management
- Nano Energy
- Applied Energy
- Applied Thermal Engineering
- Vibration
- Ultrasonics
- Sensors
- Micromachines
- Measurement Science and Technology
- Journal of Micromechanics and Microengineering
- Materials
- Energy
- Meccanica
- International Journal of Modern Physics
- European Physics Journal Plus
- International Journal of Applied Mechanics
- International Journal of Numerical Modeling: Electronic Networks, Devices and Fields
- HVAC&R Research
- Advanced Materials Technologies

- **Conference Organization**

- **Conference Chair:**

- **(Co-chair) Conference SSN03: Active and Passive Smart Structures and Integrated Systems XIX**, SPIE Smart Structures/NDE Conference, Vancouver, Canada, March 17-20, 2025
 - **(Co-chair) Conference SSN03: Active and Passive Smart Structures and Integrated Systems XVIII**, SPIE Smart Structures/NDE Conference, Long Beach, CA, March 25-28, 2024
 - **(Co-chair) Conference SSN03: Active and Passive Smart Structures and Integrated Systems XVII**, SPIE Smart Structures/NDE Conference, Long Beach, CA, March 12-16, 2023

- **Track/Symposium Chair:**

- **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Vancouver, Canada, March 17-20, 2025
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Long Beach, CA, March 25-28, 2024
 - **(Chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), New Orleans, LA, Oct. 29 - Nov. 2, 2023
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Long Beach, CA, March 12-16, 2023
 - **(Chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Columbus, OH, Oct. 30 - Nov. 3, 2022
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Long Beach, CA, March 6-10, 2022
 - **(Co-chair) Track 1: Acoustics, Vibration and Phononics:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Virtual, Nov. 1-5, 2021
 - **(Co-chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Virtual, Nov. 1-5, 2021
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Virtual, March 22-26, 2021
 - **(Co-chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Virtual, Nov. 16-19, 2020
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Virtual, April 26-30, 2020
 - **(Chair) Track 1: Acoustics, Vibration and Phononics:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Salt Lake City, UT, Nov. 8-14, 2019
 - **(Co-chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Salt Lake City, UT, Nov. 8-14, 2019
 - **(Co-Chair) Energy Harvesting:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Louisville, KY, Sept. 9-11, 2019
 - **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Denver, CO, March 3-7, 2019

- **(Co-Chair) Track 1: Acoustics, Vibration and Phononics:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, Nov. 9-15, 2018
- **(Co-chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Pittsburgh, PA, Nov. 9-15, 2018
- **(Chair) Energy Harvesting:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), San Antonio, TX, Sept. 10-12, 2018
- **(Co-chair) Student/Young Professional Development:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), San Antonio, TX, Sept. 10-12, 2018
- **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Denver, CO, March 4-8, 2018
- **(Co-chair) Phononic Crystals and Metamaterials:** ASME International Mechanical Engineering Congress and Exposition (IMECE), Tampa, FL, Nov. 3-9, 2017
- **(Co-chair) Energy Harvesting:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Snowbird, UT, Sept. 18-20, 2017
- **(Co-chair) Student/Young Professional Development:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Snowbird, UT, Sept. 18-20, 2017
- **(Co-chair) Elastic and Acoustic Metamaterials:** SPIE Smart Structures/NDE Conference, Portland, OR, March 25-39, 2017
- **(Chair) Wave Propagation and Vibration Control:** ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Stowe, VT, Sept. 28-30, 2016
- **Awards Committees and Judging Panels**
 - (Judge) Energy Harvesting Best Paper Award (Energy Harvesting TC – ASME), 2019
 - (Chair) Best Student Paper Competition (Noise Control and Acoustics Division – ASME), 2018
 - (Co-chair) Best Student Paper Competition (Smart Materials and Structures – ASME), 2018
 - (Co-chair) Best Student Paper Competition (Smart Materials and Structures – ASME), 2017
 - (Judge) Best Student Paper Competition (Smart Materials and Structures – ASME), 2016
- **Community Outreach and Engagement**
 - McNair Scholars Program, 2018, 2019
 - STEAM (Science, Tech., Eng., Arts, Math) Competition, Boys & Girls Clubs of Buffalo, 2016, 2017
 - K-12 Science Fair, Montgomery County, Maryland, 2012
 - Science Fair, Washington Latin Public Charter School, Washington D.C., 2012
- **Mentor**
 - Center for Undergraduate Research and Creative Activities (CURCA), UB
 - Collegiate Science and Technology Entry Program (CSTEP), UB
 - Louis Stokes Alliance for Minority Participation (LSAMP), UB
 - IIT Gandhinagar Undergraduate Summer Internship Program, UB

- Capstone Senior Design Projects, UB
- NASA/New York Space Grant Consortium, UB
- NSF Research Experience for Undergraduates (REU)
- Gemstone Honors Program (GEM), UMD

STUDENTS & ADVISEES

(1) Postdoctoral Fellows

- **Rico Schmidt** (Oct. 2023 – Present)
- **Mohammadreza Moghaddaszadeh** (Nov. 2023 – March 2024)
- **Hasan Al-Babaa** (May 2022 – Aug. 2022, July 2023 – Aug. 2023)

(2) PhD Students (*completed*)

- **Mohammadreza Moghaddaszadeh**

(Aug. 2018 – Aug. 2023)

Dissertation title: Wave Mechanics of Modulated Media: From Nonreciprocity to Directional Amplification

Honors & Awards during PhD Tenure:

CSEE Poster Competition 2nd Place Award

(Spring 2020)

- **Revant Adlakha**

(Aug. 2019 – Aug. 2023)

Dissertation title: Wave Propagation in Elastoacoustic Structures with Controllable non-Hermitian Phase Profiles

Honors & Awards during PhD Tenure:

IMECE Best Student Paper Competition 1st Place Award

(Fall 2020)

- **Jesse Callanan**

(Aug. 2016 – Dec. 2021)

Dissertation title: Active Wave Control in Multiphysics Resonant Systems: From Thermoacoustic Energy Harvesting to Electrically-induced Band Gaps

Honors & Awards during PhD Tenure:

MAE Poster Competition 2nd Place Award

(Spring 2018)

LSAMP Best Mentor “Mr. Miyagi” Award

(Summer 2018)

NSF Internship Recipient, Buffalo Manufacturing Works

(Fall 2018)

SPIE Best Student Paper Competition 2nd Place Award

(Spring 2019)

MAE Poster Competition 1st Place Award

(Spring 2021)

NSF Internship Recipient, Air Force Research Lab

(Fall 2020)

Dean’s Graduate Achievement Award

(Summer 2021)

ASME Best Paper Award in Mechanics and Material Systems

(Fall 2021, 2022)

- **Mohammad A. Attarzadeh**

(Aug. 2016 – May 2021)

Dissertation title: Wave Propagation in Space-Time-Periodic Media: Breaking Elastic and Acoustic Reciprocity

Honors & Awards during PhD Tenure:

MAE Poster Competition 1st Place Award	(Spring 2018)
SEAS Poster Competition 3rd Place Award	(Spring 2018)
MAE Ph.D. Teaching Fellow	(Summer 2019)
ASME Best Paper Award in Mechanics and Material Systems	(Fall 2021)

- **Hasan Al-Babaa**

(Jan. 2016 – May 2019)

Dissertation title: Dynamics of Finite Phononic Crystals and Metamaterials

Honors & Awards during PhD Tenure:

MAE Poster Competition 3rd Place Award	(Spring 2017)
MAE Ph.D. Teaching Fellow	(Summer 2018)
Dean's Graduate Achievement Award	(Spring 2019)
Silent Hoist and Crane Materials Handling Award	(Summer 2019)

(3) PhD Students (*in progress*)

- **Mohamed Aziz Mousa**

(Jan. 2022 – Present)

Honors & Awards during PhD Tenure:

UB Presidential Fellowship	(Spring 2022)
SES Poster Competition 2nd Place Award	(Fall 2023)
UB Art of Research Finalist	(Spring 2024)

- **Hosam Yousef**

(June 2023 – Present)

Honors & Awards during PhD Tenure:

UB MAE Townsend Scholarship	(Fall 2023)
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- **Saeed Behboodi** (Start Date: Aug. 2024)

- **Ethan Fort** (Start Date: Aug. 2024)

- **Ali Jafari** (Start Date: Aug. 2024)

(4) MS Students

- **Madeline Lowry**

Dec. 2023 – Thesis: Local Resonance band gap widening in elastic metamaterials: Data-driven modeling and extension to flexural beams

Honors & Awards during MS Tenure:

UB Arthur A. Schomburg Fellowship	(Fall 2022)
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- **Timothy Dubill**
May 2021 – Thesis: Wave Suppression and Guidance Through the Exploitation of Bandgap Properties in Periodic Vibrating Structures
- **Andrew Ragonese**
Feb. 2021 – Thesis: Hard-Soft-Hard Locally Resonant Metamaterials: A Pathway to 2D Tunable Band Gap Structures
- **Ahmed Elbanna**
May 2020 – Project: Asymmetric Transmission in Gyroscopically-Pumped Coupled Resonators
- **Chuan (Cindy) Hsin Chang**
May 2020 – Project: Elastic Energy Propagation in a Shive Wave Motion Demonstrator
- **Xiawei Song**
May 2017 – Project: Standing-to-Traveling Wave Thermoacoustic Systems

(5) Undergraduate Students

Undergraduate Research at UB:

Tyshawn Searight	CSTEP Intern, Summer 2023 NASA Scholarship Recipient, Fall 2023
Gregory Kravtchouk	
Mohamed Badr	
Fatou Gueye	CSTEP Intern, Summer 2022 Zimmer Award Recipient, Fall 2022
Ethan Fort	Zimmer Award Recipient, Summer 2022 Robert W. Young Award Recipient (Acoust. Soc. of America), Fall 2022 MAE Undergraduate Researcher of the Year, Spring 2024
Kevin Corrales	
Josh Rennells	
Islam Zakaria-Saleh	Zimmer Award Recipient, Summer 2021
Ean Weise	CSTEP Intern, Summer 2020
Rahil Sanwla	UB and IIT-Gandhinagar Summer Research Partnership, Summer 2019
David DePauw	NSF REU Fellowship Recipient, Summer 2017, Summer 2018 Dean's Undergraduate Achievement Award, 2018
Steven Herrera	CSTEP Intern, Summer 2018 Zimmer Award Recipient, Spring 2019 NASA/New York Space Grant Consortium Fellow, 2018-2019
Ramzy Abu-Ramadan	Zimmer Award Recipient, Spring 2019
Alexander Poulin	
Adrian Denner	LSAMP Intern, Summer 2018
Chris Romero-Fischer	CSTEP Intern, Summer 2017
Chris Rector	Zimmer Award Recipient, Spring 2017
Joshua Abraham	Zimmer Award Recipient, Fall 2016
Alex Rodriguez	

Chris Gnam	CSTEP Intern, Summer 2016 1st Place Award at CSTEP Research Symposium, Summer 2016 NSF Graduate Research Fellowship Recipient, March 2020
Akshay Gupta	CURCA Research Award Recipient, Spring 2016
Vincent Dirienzo	CURCA Research Award Recipient, Spring 2016
Benjamin Grace	
Stephen Gagnon	Zimmer Award Recipient, Summer 2017, Fall 2017
Harrison Fay	Visiting Student, Cornell University, Summer 2016

Senior Design Projects:

CAPSTONE 2016-17	Max Clark, Mason Kyi, Chukwuemeka Ngwu, Macclaud St. Rose, Jeong Kim
CAPSTONE 2016-17	Anthony Laffrado, Michael Forcucci, Kevin Scott, Hasitha Hewakuruppu
CAPSTONE 2015-16	Abel Taye, Chris Landschoot, John Forrestel, Joe Szabo, Steve Weinheimer
GEMSTONE 2012-14	Edward Mulhern, Mihir Patel, Chandan Kittur, Mark Lee, Alden Grobicki

(6) Thesis/Dissertation Committee Member

Ph.D. Dissertations:

- Amrith Mariappan, Ph.D., MAE, Expected Date: May 2026
- Amit Bhayadia, Ph.D., MAE, Expected Date: May 2026
- Liam Field, Ph.D., MAE, Expected Date: May 2025
- Manaswin Oddiraju, Ph.D., MAE, May 2025
- Anthony Olivett, Ph.D., MAE, Jan 2025
- Adrian Stein, Ph.D., MAE, May 2024
- Nikta Amiri, Ph.D., MAE, Aug. 2022
- Saeed Maleki, Ph.D., MAE, Nov. 2021
- Oladapo Ogunbodede, Ph.D., MAE, May 2020
- Souransu Nandi, Ph.D., MAE, May 2019
- Taewook Lee, Ph.D., MAE, May 2018
- Aditya Nanda, Ph.D., MAE, May 2018
- Mohammad Ansari, Ph.D., MAE, May 2018
- Adonis Pimienta-Peñalver, Ph.D., MAE, Aug. 2017
- Muath Bani-Hani, Ph.D., MAE, Sept. 2016

M.S. Theses:

- Joshua Prendergast, M.S., MAE, May 2022
- Manaswin Oddiraju, M.S., MAE, August 2021
- Rayhaan Iqbal, M.S., MAE, July 2021
- Rey Yoshinaga, M.S., MAE, Oct. 2019
- Revant Adlakha, M.S., MAE, Aug. 2019
- Antonio Galbier, M.S., MAE, Jan. 2017

TRAINING & COURSEWORK

University at Buffalo (SUNY), Buffalo, NY

Sept. 2017 - Jan. 2018

Collaborative Institutional Training Initiative (CITI) Program

- Social & Behavioral Research Investigators
- Biomedical Research Investigators
- Good Clinical Practice

University of Maryland, College Park, MD

Sept. 2009 - May 2013

Advanced Dynamics, Vibration Damping, Linear System dynamics, Applied Finite Element Methods, Active Vibration Control, Finite Element Methods, Computational Structural Mechanics, Continuum Mechanics, Linear Vibrations, Structural Dynamics, Professional Preparation and Program Management

Cairo University, Giza, Egypt

Sept. 2008 - May 2009

Theory of Fine Measurements, Computational Methods in Energy Sciences, Advanced Fluid Dynamics, Thermal Convection, Advanced Heat Transfer

Training Provided by M. Nouh:

ITT Enidine, Orchard Park, NY

June 2019 - Aug. 2019

Shock & Vibration: 8-Session Professional Development Course