M. AMIN KARAMI

1013 Furnas Hall
State University of New York at Buffalo
Buffalo, NY 14260-4400

karami@buffalo.edu
716-645-5878
https://ubwp.buffalo.edu/ideas

EDUCATION

VIRGINIA TECH
Blacksburg, VA

Ph.D., Engineering Mechanics — July 2011
Micro-Scale and Nonlinear Energy Harvesting.
Advisor: Prof. Daniel J. Inman.
GPA: 4.0/4.0.

THE UNIVERSITY OF BRITISH COLUMBIA
Vancouver, BC, Canada

M.A.Sc., Mechanical Engineering — June 2006
Space Vehicle Motion Recovery in the Presence of Actuator Failure.
Advisor: Prof. Farrokh Sassani.
GPA: 86/100.

SHARIF UNIVERSITY OF TECHNOLOGY
Tehran, Iran

B.S., Mechanical Engineering — July 2004
Recognized as a student with special talent, ranked #3 in class of ~140.
GPA: 18.05/20.

ACADEMIC POSITIONS

AUG 2013-PRESENT — Assistant Professor, Department of Mechanical and Aerospace Engineering, State University of New York at Buffalo, Buffalo, NY

AUG 2013-PRESENT — Adjunct Assistant Research Scientist, Department of Aerospace Engineering, University of Michigan, Ann Arbor, MI

AUG 2012-AUG 2013 — Research Fellow, Department of Aerospace Engineering, the University of Michigan, Ann Arbor, MI

HONORS AND AWARDS

Keynote Speaker — 2016
Hong Kong Science Park Soft Landing program.

Invited Speaker — 2015
Medtronic Technical Forum, Minneapolis.

Keynote Speaker — 2015
MedTechWorld MD&M east medical conference, New York.

Best Student Hardware Award — 2011
ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems

First Oral Presentation Award — 2011
GSA Annual Symposium, Virginia Tech.

Daniel Frederick Scholarship — 2010
Virginia Tech.

Invited Speaker at ICTAS seminar series — 2009
Presenting the only student seminar, Virginia Tech.

ICTAS Doctoral Fellowship — 2007-2011
Full financial and travel support, ICTAS, Virginia Tech.

University Graduate Fellowship — 2007
The University of British Columbia.

Jaya Jayant Prize in Mechanical Engineering 2006
The University of British Columbia.

University Graduate Fellowship 2005
The University of British Columbia.

Graduate Entrance Scholarship 2004
The University of British Columbia.

Distinguished as student with exceptional talents 2002
Sharif University of Technology

Ranked first in Azad University entrance exam 2000
in Electrical Engineering-Power Systems among 400,000 participants.

Ranked 212 in Iranian Universities Entrance Exam, 2000
among 500,000 participants.

TEACHING EXPERIENCE

UNIVERSITY AT BUFFALO	**Assistant Professor**	Fall 2013-Present
	System Dynamics (Undergraduate), Fall 2015, Fall 2016, Fall 2017	
	Systems Analysis (Graduate), Fall 2013 and Fall 2014	
	Nonlinear Systems (Graduate), Spring 2014, Spring 2016, Spring 2018	
	Smart Structures (Graduate), Spring 2015, Spring 2017	
	Shock and Vibrations II (Graduate), Spring 2018	
	Department Nominee for Early Career Teaching Award 2016	
VIRGINIA TECH	**Teaching Fellow**	Fall 2009, Fall 2010
	Graduate vibrations.	
	Graduate Teaching Assistant	
	Dynamics	Spring 2008
	Statics	Fall 2007
SHARIF UNIVERSITY OF TECHNOLOGY	**Instructor**	
	Undergraduate Instrumentation	
THE UNIVERSITY OF BRITISH COLUMBIA	**Graduate Teaching Assistant**	
	Mechatronics	Spring 2007
	Engineering case studies	Fall 2006
	Third year labs	Spring 2006
	Mechanics of materials	Fall 2005
NIKAN HIGH SCHOO.	**Instructor**	Fall 2001-Spring 2002
	Innovative Design Laboratory	

FUNDED GRANTS AND PROPOSALS

1. "Development of energy harvesters for powering leadless pacemakers from myocardial motion", NIH/NIBIB, $407,269, Co-PI: David Bradley M.D. University of Michigan Children's hospital. 2017-Present

2. ""EAGER: Tuning Granular Phononic Crystals through Pattern Transformation", NSF, Co-PI (PI: Jongmin Shim, UB CSEE), $150,000, 2016-Present.
3. "Controlled buckling shoe-sole energy harvester", eGravitas, Ltd., $18,000, November 2015-August 2016.
4. "Vibration Powered Leadless Cardiac Pacemaker", UB Translational Pilot Studies Fund, $25,000 2014- 2016
5. "Nonlinear Rotary Translational Energy Harvester for Wind and Wave Power Generation", SUNY RF Sustainability program, $6000 2014
6. "Development of Micro-Power Generators for Cardiac Pacemakers", Michigan Institute for Clinical and Health Research 2012., $5000, (Co-PI with Prof. Dan Inman)
7. "Energy Harvesting for Powering Pacemakers", NSF Innovation Corps (I-Corps), $3000, 2017-Present.

UNIVERSITY NOMINEE

1. Moore Inventor Fellows program, 2016.
2. Katerva Award (referred to as the Nobel Prize of Sustainability) 2016.

PUBLICATIONS

BOOK CHAPTERS

1. **M. A. Karami** and D. J. Inman, "Powering Pacemakers with Heartbeat Vibrations", in Micro Energy Harvesting, Wiley, 2015.
2. S. A. Anton and **M. A. Karami**, "Piezoelectric Energy Systems", in Encyclopedia of Sustainable Technologies, Elsevier, 2017.

JOURNAL PAPERS

My graduate students are underlined. Corresponding authors are indicated by "*".

Publications since joining UB:

1. A. Nanda* and **M. A. Karami**, "One-way sound propagation in a smart fluid," The Journal of the Acoustical Society of America, Submitted.
2. Nanda, A.* and **M.A. Karami**, "Flexural bandgap frequencies in a foldable metamaterial structure," *Journal of Sound and Vibrations,* Submitted.
3. A. Nanda*, P. Singla, and **M. A. Karami** "Linear and Monostable Nonlinear energy harvesters: Uncertainty analysis using Maximum Entropy principle and the Method of Quadratures", Journal of Intelligent Material Systems and Structures, submitted.
4. M. H. Ansari*, A. F. Arrieta, M. Bani-Hani, and **M. A. Karami**, "Energy harvesting for implantable medical devices using nonlinear composite piezoelectric beams" *Journal of Intelligent Material Systems and Structures,* submitted.
5. M. H. Ansari*, M. A. Attarzadeh, M. Nouh, and **M. A. Karami**, "Application of magnetoelastic metamaterials in nonreciprocal wave propagation," *Smart Materials and Structures,* in press.
6. A. Galbier* and **M. A. Karami**, "Using an Elastic Magnifier to Increase Power Output and Performance of Heart-Beat Harvesters," *Smart Materials and Structures,* vol. 26, p. 094001, 2017.
7. K. Yerrapragada, M. H. Ansari*, and **M. A. Karami**, "Enhancing Power Generation of Floating Wave Power Generators by Utilization of Nonlinear Roll-Pitch Coupling," *Smart Materials and Structures*, vol. 26, 2017.
8. M. H. Ansari* and **M. A. Karami**, "A Sub-cc nonlinear piezoelectric energy harvester for powering

leadless pacemakers", Journal of Intelligent Material Systems and Structures, p. 1045389X17708344, 2017.

9. M. H. Ansari* and **M. A. Karami**, "Experimental investigation of fan-folded piezoelectric energy harvesters for powering pacemakers " Smart Materials and Structures, vol. 26, p. 065001, 2017.
10. A. Nanda* and M. A. Karami, "Energy harvesting from arterial blood pressure for powering embedded micro sensors in human brain," Journal of Applied Physics, 2017. 121(12).
11. M. H. Ansari* and **M. A. Karami**, "Modeling and experimental verification of a fan-folded vibration energy harvester for leadless pacemakers", Journal of Applied Physics (Impact factor: 2.2), vol. 119, p. 094506, 2016.
12. A. Nanda*, **M. A. Karami**, and P. Singla, "Energy Harvesting using Rattleback: Theoretical analysis and simulations of Spin Resonance", Journal of Sound and Vibrations (Impact factor: 1.8), vol. 369, pp. 195-208, 2016.
13. M. H. Ansari* and **M. A. Karami**, "Energy harvesting from controlled buckling of piezoelectric beams", Smart Materials and Structures (Impact factor: 2.5), vol. 24, p. 115005, 2015.
14. M. Bani-Hani* and **M. A. Karami**, "Optimization of traveling vibrating waves in Self-assembling swimming smart boxes", Smart Materials and Structures (Impact factor: 2.5), vol. 24, p. 094005, 2015.

Publications Prior to joining UB:

15. **M. A. Karami**, J. P. Farmer and D. J. Inman, "Parametrically Excited Nonlinear Piezoelectric Wind Energy Harvester", Renewable Energy (Impact factor: 3.5), Volume 50, February, Pages 977-987, 2013.
16. **M. A. Karami**, and D. J. Inman, "Powering Pacemakers from Heartbeat Vibrations Using Linear and Nonlinear Energy Harvesting", Applied Physics Letters (Impact factor: 3.3), vol. 100, p. 042901, 2012.
17. **M. A. Karami**, and D. J. Inman, "Parametric study of zigzag micro-structure for vibrational energy harvesting", Journal of Microelectromechanical Systems (Impact factor 1.75), vol. 21, pp. 145-160, 2012.
18. D. Avirovik, **M. A. Karami**, D. J. Inman, and S. Priya, " L-Shape Piezoelectric Motor – Part II: Analytical Modeling," IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (Impact Factor 1.5), vol. 59, pp. 108-120, 2012.
19. **M. A. Karami**, and D. J. Inman, "Equivalent damping and frequency change for linear and nonlinear hybrid vibrational energy harvesting systems", Journal of Sound and Vibration (Impact factor: 1.8), vol. 330, 2011.
20. **M. A. Karami**, O. Bilgen, D. J. Inman, and M. I. Friswell, "Experimental and Analytical Parametric Study of Single Crystal Unimorph Beams for Vibration Energy Harvesting," IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (Impact Factor 1.5), vol. 58, 2011.
21. **M. A. Karami**, and D. J. Inman, "Electromechanical Modeling of the Low Frequency Zigzag Micro Energy Harvester," Journal of Intelligent Material Systems and Structures (Impact factor: 2.1), vol. 22, no. 3, 2011.
22. **M. A. Karami**, and D. J. Inman, "Analytical Modeling and Experimental Verification of the Vibrations of the Zigzag Micro-Structure for Energy Harvesting," Journal of Vibration and Acoustics, vol. 133, no. 1, 2011.
23. O. Bilgen, **M. A. Karami**, M. I. Friswell, and D. J. Inman, "The Actuation Characterization of Cantilevered Unimorph Beams with Single Crystal Piezoelectrics," Smart Materials and Structures (Impact factor: 2.5), vol. 20, 2011.

24. **M. A. Karami**, B. Yardimoglu, and D. J. Inman, "Coupled out of plane vibrations of spiral beams for micro-scale applications," Journal of Sound and Vibration (Impact factor: 1.8), vol. 329, no. 26, 2010

25. **M. A. Karami**, and F. Sassani, "Spacecraft Momentum Dumping Using Less Than Three External Control Torques", Journal of Guidance, Control and Dynamics, Vol 32, No. 1, 2009.

PATENTS

1. Energy Harvesting from Thermally Buckled Piezoelectric Beams, 2016, UB Ref number: R7063
2. Energy Harvesting for Leadless Pacemakers, Preliminary Patent, 2015, Umich Ref number: 6782
3. M. A. Karami, D. J. Inman, and M. H. Ansari, "Energy harvesting from constrained buckling of piezoelectric beams,", 2017, US Patent App. 15/234,059, 2016.
4. M. A. Karami, D. J. Bradley, D. J. Inman, and M. H. Ansari, "Energy harvesting for leadless pacemakers,", 2017, US Patent App. 15/264,657, 2016.
5. D. J. Inman, M. A. Karami, and D. J. Bradley, "Piezoelectric vibrational energy harvester,", 2017, US patent number: 9,590,533, 2017.

PEER REVIEWED CONFERENCE PAPERS

1. M. H. Ansari and M. A. Karami, " Experimental study on nonlinear thermally buckled piezoelectric energy harvesters for leadless pacemakers", *SPIE Smart Structures and Materials+ Nondestructive Evaluation and Health Monitoring,* 2018.
2. M. H. Ansari and M. A. Karami, "Analyzing the frequency band gap in functionally graded materials with harmonically varying material properties", *SPIE Smart Structures and Materials+ Nondestructive Evaluation and Health Monitoring,* 2017, pp. 101701J-101701J-7.
3. M. H. Ansari, and M. A. Karami, "Nonreciprocal wave propagation in magnetoelastic metamaterials using linear induction mechanism ", *ASME's International Mechanical Engineering Congress and Exposition (IMECE) 2017*.
4. Aditya Nanda, M. Amin Karami, "Tunable bandgaps in a foldable metamaterial structure". ASME 2017 International Mechanical Engineering Congress and Exposition (IMECE 2017), [Presentation only]. American Society of Mechanical Engineers.
5. Aditya Nanda, M. Amin Karami, "One-way sound propagation in a smart fluid". ASME 2017 International Mechanical Engineering Congress and Exposition (IMECE 2017), [Presentation only]. American Society of Mechanical Engineers.
6. Aditya Nanda, M. Amin Karami, "Energy Harvesting From arterial blood pressure for mi-cro brain sensors". ASME 2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2017), [In print] American Society of Mechanical Engineers.
7. Aditya Nanda, M. Amin Karami, "Tunable bandgaps in a foldable metamaterial structure". ASME 2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2017), [In print] American Society of Mechanical Engineers.
8. Aditya Nanda, M. Amin Karami, "One-way sound propagation in a smart fluid". ASME 2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2017), [In print]. American Society of Mechanical Engineers.
9. Aditya Nanda, M. Amin Karami, "Energy Harvesting from arterial blood pressure for em-bedded brain sensing". ASME 2016 International Design Engineering Technical Confer-ences and Computers and Information in Engineering Conference (IDETC 2016), (pp. V003T11A015-V003T11A015). American Society of Mechanical Engineers.

10. M. H. Ansari and M. A. Karami, "Wave Power Generation Using Nonlinear Roll-Pitch Coupling in a Ship", in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Stowe, VT, 2016.
11. A. Galbier and M. A. Karami, "A Bistable Piezoelectric Energy Harvester With an Elastic Magnifier for Applications in Medical Pacemakers", in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Stowe, VT, 2016.
12. M. H. Ansari, M. A. Karami, "NONLINEAR THERMALLY BUCKLED PIEZOELECTRIC ENERGY HARVESTER", in ASME 2016 International Design Engineering Technical Conferences (IDETC), Charlotte, NC, 2016
13. M. Bani-Hani, M. A. Karami, "POWER GENERATION FROM MASTICATION FORCES USING A SMART TOOTH", in ASME 2016 International Design Engineering Technical Conferences (IDETC), Charlotte, NC, 2016
14. A. Nanda, M. A. Karami, "ENERGY HARVESTING FROM ARTERIAL BLOOD PRESSURE FOR EMBEDDED BRAIN SENSING", in ASME 2016 International Design Engineering Technical Conferences (IDETC), Charlotte, NC, 2016
15. M. Bani-Hani and M. A. Karami, "Energy harvesting form high amplitude low frequency contact forces" in SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, Las Vegas, NV, 2016.
16. A. Nanda and M. A. Karami, "Energy Harvesting from hydraulic lines using Piezoelectric Cylinders" in SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, Las Vegas, NV, 2016.
17. M. H. Ansari and M. A. Karami, "Piezoelectric Energy Harvesting from Heartbeat Vibrations for Leadless Pacemakers", in 15th International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS), 2015.
18. A. Nanda, M. A. Karami, and P. Singla, "Uncertainty Analysis of Piezoelectric Energy Harvesting System", in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Colorado Springs, CO, 2015.
19. M. H. Ansari and M. A. Karami, "Energy Harvesting from Heartbeat Using Piezoelectric Beams with Fan-Folded Configuration and Added Tip Mass", in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Colorado Springs, CO, 2015.
20. A. Nanda, P. Singla, M. A. Karami, "Energy harvesting using the Rattleback: Theoretical Analysis and Simulations of Spin Resonance", in ASME 2015 International Design Engineering Technical Conferences (IDETC), Boston, MA, 2015
21. K. Yerrapragada and M. A. Karami, "Utilization of Nonlinear Resonance of Vessels for Ocean Wave Power Generation", in ASME 2015 International Design Engineering Technical Conferences (IDETC), Boston, MA, 2015
22. M. H. Ansari and M. A. Karami, "Heart beat energy harvesting using the fan-folded piezoelectric beam geometry", in ASME 2015 International Design Engineering Technical Conferences (IDETC), Boston, MA, 2015
23. M. Bani-Hani, I. Borazjani, E. T. Esfahani, V. Krovi, M. A. Karami, "Generation and Optimization of Traveling Vibrating Waves in Self-Swimming Smart Boxes", in ASME 2015 International Design Engineering Technical Conferences (IDETC), Boston, MA, 2015
24. I. Borazjani, M. A. Karami , and, E. T. Esfahani, "Self-Propelled Swimming Simulations of Self-Assembling Smart Boxes",ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Newport, RI, 2014.

25. M. A. Karami , E. T. Esfahani, and I. Borazjani, "Self-Assembling Swimming Smart Boxes",ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Newport, RI, 2014.
26. A.F Arrieta, M. A. Karami, D. J. Inman, and P. Ermanni, "Elastically Bi-Stable Heartbeat Vibration Energy Harvester", ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Newport, RI, 2014
27. R. Madankan, M. A. Karami, and P. Singla, "Uncertainty Analysis Of Energy Harvesting Systems" in ASME 2014 International Design Engineering Technical Conferences (IDETC), Buffalo, NY, 2014
28. M. H. Ansari and M. A. Karami, "Energy Harvesting From Controlled Buckling Of A Horizontal Piezoelectric Beam" in ASME 2014 International Design Engineering Technical Conferences (IDETC), Buffalo, NY, 2014
29. M. Bani-Hani, V. Krovi, and M. A. Karami, "Modeling Of A Beam With A Mass In The Middle For Heart Beat Vibration Energy Harvesting" in ASME 2014 International Design Engineering Technical Conferences (IDETC), Buffalo, NY, 2014
30. B. Kuch and M. A. Karami, "powering pacemakers with a nonlinear hybrid rotary-translational energy harvester" in ASME 2014 International Design Engineering Technical Conferences (IDETC), Buffalo, NY, 2014
31. M. A. Karami and D. J. Inman, "Nonlinear Dynamics of the Hybrid Rotary-Translational Energy Harvester" in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Snowbird, Utah, 2013.
32. M. A. Karami, D. J. Bradley, and D. J. Inman, "Vibration Powered Cardiac Rhythm Devices" in American Heart Association (AHA) Scientific Sessions 2012, Los Angeles, CA 2012.
33. M. A. Karami and D. J. Inman, "Hybrid Rotary-Translational Energy Harvester for Multi-Axis Ambient Vibrations" in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Stone Mountain, GA, 2012.
34. M. A. Karami and D. J. Inman, "Controlled Buckling of Piezoelectric Beams for Direct Energy Harvesting from Passing Vehicles" in ASME 2012 International Design Engineering Technical Conferences (IDETC), Chicago, IL, 2012.
35. M. A. Karami, and D. J. Inman, "Nonlinear Dynamics of the bi-Stable Piezoelectric Wind Energy Harvester" in 19th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, San Diego, CA, 2012.
36. M. A. Karami, J. R. Farmer, S. Bressers, S. Priya and D. J. Inman, "Parametrically Excited Nonlinear Piezoelectric Wind Energy Harvester" in ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Scottsdale, AZ, 2011.
37. M. A. Karami, P. S. Varoto and D. J. Inman, "Analytical Approximation and Experimental Study of Bi-Stable Hybrid Nonlinear Energy Harvesting System" in 23rd Biennial Conference on Mechanical Vibration and Noise (VIB), Washington, DC, 2011.
38. M. A. Karami, and D. J. Inman, "Energy harvesting from heartbeats for pacemakers" in 18th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, San Diego, CA, 2011.
39. M. A. Karami, P.S. Varoto and D. J. Inman, "Experimental Study of the of the Nonlinear Hybrid Energy Harvesting System" IMAC XXIX, Jacksonville, FL, 2011
40. Karami, M. A., and Inman, D. J. " Limit cycle oscillations of the piezo-electromagnetic structure for broad-band energy harvesting" In: 13th Conference on Nonlinear Vibrations, Dynamics and Multi-

body systems., Blacksburg, VA, 2010.

41. M. A. Karami, and D. J. Inman, "Nonlinear vibrations of the Piezo-electromagnetic structure for energy harvesting" in 17th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, San Diego, CA, 2010.
42. M. A. Karami, and D. J. Inman, "Experimental Vibration Analysis of the Zigzag Structure for Energy Harvesting" IMAC XXVIII, Jacksonville, FL, 2010
43. M. A. Karami, and D. J. Inman, "Parametric study of zigzag micro-structures for vibrational energy harvesting" The 9th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, Power MEMS 2009, Washington DC 2009.
44. M. A. Karami, and D. J. Inman, "Vibration Analysis of the Zigzag Micro-structure for Energy Harvesting," in 16th SPIE Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, San Diego, CA, 2009.
45. M. A. Karami, B. Yardimoglu, and D. J. Inman, "Coupled out of plane vibrations of spiral beams," in 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference Palm Springs, California, 2009.
46. M. A. Karami, and D. J. Inman, "Electromechanical Modeling of the Low Frequency MEMS Energy Harvester" in 22nd Biennial Conference on Mechanical Vibration and Noise (VIB) , San Diego, CA, 2009.
47. M. A. Karami, and F. Sassani, "Nonlinear Attitude Control of Underactuated Spacecraft Subject to Disturbance Torques ", American Control Conference, New York, July 2007
48. M. A. Karami, and F. Sassani, "Spacecraft Momentum Dumping Using Less Than Three External Control Torques ", IEEE Systems Man and Cybernetics conference , Montreal, October 2007
49. M. A. Karami, and F. Sassani, "Attitude Tracking Control of an Underactuated Asymmetric Spacecraft Subjected to Undesired Constant Torque about the Unactuated Axis.", Canadian Society of Mechanical Engineering Forum, Calgary, Canada, 2006

RELATED PROFESSIONAL EXPERIENCE

NSF REVIEW PANEL

Panelist for Directorate of Engineering (ENG), 2013, and Directorate for Computer & Information Science & Engineering (CISE) 2015, Directorate of Engineering (ENG), 2016, Directorate of Engineering (ENG), 2017

OTHER PROPOSAL REVIEW

Reviewer for Swiss National Science Foundation 2015, Kentucky Science & Technology Corporation 2017

JOURNAL EDITORIAL

Guest Associate Editor: Journal of Intelligent Material Systems and Structures for the special issue on Energy Harvesting (2015), Smart Materials and Structures special issue on SMASIS Energy Harvesting Symposium (2016 and 2017)

JOURNAL REVIEW

Reviewer for

1. Applied Physics Letters
2. Journal of Applied Physics
3. Journal of Intelligent Material Systems and Structures
4. Smart Materials and Structures
5. AIAA Journal
6. Journal of Sound and Vibration

7. Nonlinear Dynamics
8. IEEE Transactions on Transactions on Ultrasonics
9. Ferroelectrics, and Frequency Control
10. IEEE Transactions on Circuits and Systems
11. Sensors & Actuators: A. Physical
12. Proceedings of the Institution of Mechanical Engineers, Part I, Journal of Systems and Control Engineering
13. Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science
14. Shock and Vibration Journal
15. Journal of Advanced Research in Dynamics and Control Systems
16. ASME Journal of Applied Mechanics.
17. ASME Journal of Dynamic Systems, Measurement and Control
18. Aerospace Science and Technology
19. Physics of Fluids

CONFERENCE ORGANIZATION

Symposium Chair at ASME 2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2017) symposium on "Energy Harvesting", ASME 2017 International Design Engineering Technical Conference (IDETC), symposium on "Nonlinear Energy Transfers and Harvesting"

Symposium Co-Chair at Frontiers on Biomedical Devices Conference (BIOMED) in ASME 2017 International Design Engineering Technical Conference (IDETC), ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS 2016 and 2018) symposium on "Energy Harvesting", ASME 2016 International Design Engineering Technical Conference (IDETC), symposium on "Nonlinear Energy Transfers and Harvesting", ASME 2016 International Design Engineering Technical Conference (IDETC), symposium on " Implantable and Wearable Devices"

Session chair at SPIE Smart Structures/NDE, March 2009 and March 2011, San Diego CA., ASME IDETC in Washington DC 2011, Buffalo 2014, and Boston 2015, ASME SMASIS in Scottsdale 2011, New Port 2014, and Colorado Springs 2015.

Reviewer for ASME Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), 2015, Colorado Springs, American Control Conference 2012, 23rd Canadian Congress of Applied Mechanics, 2011, ASME International Design Engineering Technical Conferences (IDETC), 2011, 2015, and SAE 2011 Commercial Vehicle Engineering Congress and Exhibition, ASME Dynamic Systems and Control Conference (DSCC) 2015.

DEPARTMENTAL SEMINAR ORGANIZATION

MAE Dynamics and Control Seminars 2016 (University at Buffalo)

Initiated a weekly seminar series for the students in the Dynamics and Control research group.

Chair of the seminar committee 2009 –2011 (NanoVT student organization, Virginia Tech)
Organized two research seminars featuring nationally renowned speakers from educational institutions and companies.

ASME, ASMS

Secretary of the Energy Harvesting Technical Committee 2017-present

BRANCH	Judge for the 2015 and 2016 Best Energy Harevsting Paper Award, Judge for 2016 and 2017 Ephrahim Garcia Best paper award
	Guest editor for the special issue of Journal of Intelligent Material Systems and Strucutres on energy harvesting, 2015
PROFESSIONAL ASSOCIATIONS	Member of American Society of Mechanical Engineering Branch on AERO Adaptive Structures & Material Systems (ASMS)., Member of the Energy Harvesting Technical Committee in ASMS
	Selected as a member of Alpha Epsilon Lambda, academic excellence and leadership graduate honor society.
	Member of : ASME, AIAA, IEEE, SEM, SPIE, SIAM
COMMITTEE MEMBERSHIP	**Masters:** Po Sheng Wang, Victor Migeon, Bharath Madduri, Hongfei Lin, Yang Yu, Zhiqing Zhao, Azdeh Dinparastdjadid, Sivakiran Ayyagari, Sri Sadhan Jujjavarapu .
	PhD: Javad Sovizi, Xiaobo Zhou, Aliakbar Alamdari, Mostafa Ghobadi, Amir Hajiaghamemar, Amir Baghdadi
DEPARTMENTAL SERVICE	Member of Undergraduate Committee 2014-Present
	Designed the labs for MAE 334 Mechanical Engineering Dynamic Systems Lab.
	Member of the faculty hiring committee 2014, 2015, 2016
	Member of committee for selection of teaching fellows 2015
	Mentor for the teaching fellowship program: MAE 340 Dynamic Systems 2015, 2016

PRESENTATIONS

KEYNOTES AND INVITED PRESENTATIONS

1. Keynote Speaker, Soft Landing program, Hong Kong Science & Technology Parks Corporation, Hong Kong, April 2016.
2. Keynote Speaker, Shenzhen Science Park Corporation, Shenzhen, China, April 2016.
3. Invited Speaker at Medtronic Technical Forum, Minneapolis, August 2015.
4. Keynote Speaker at MedTechWorld MD&M east medical conference in New York City, May 2015.
5. Invited Speaker at ICTAS seminar series, 2009, Presenting the only student seminar, Virginia Tech

REGULAR PRESENTATIONS

6. M. A. Karami, D. J. Bradley, and D. J. Inman, "Powering Pacemakers from Heartbeat Vibrations" in 7th Annual Energy Harvesting Workshop, Atlanta, GA, 2012.
7. Invited Speaker, New York University, "Micro-Scale and Nonlinear Vibrational Energy Harvesting", March 2010.
8. Invited Speaker, Clarkson University, "Micro-Scale and Nonlinear Vibrational Energy Harvesting", April 2010.
9. The only invited student presentation in ICTAS seminar series, "Low-Frequency Geometries for MEMS Vibrational Energy Harvesting", November 2009.
10. Karami, M. A., and Inman, D. J. (2010). "Limit cycle oscillations of the piezo-electromagnetic structure for broad-band energy harvesting" In: 13th Conference on Nonlinear Vibrations, Dynamics and Multibody Systems, Blacksburg, VA USA.
11. Karami, M. A., and Inman, D. J. (2010). " Nonlinear Hybrid Energy Harvesting utilizing a Piezo-magneto-elastic spring," In: 5th Annual Energy Harvesting Workshop, Blacksburg, VA USA
12. Karami, M. A., and Inman, D. J. (2009). "Issues in MEMS scale vibration energy harvesting." In:

4th Annual Energy Harvesting Workshop, Blacksburg, VA USA.

13. Invited talk on the energy harvesting at ICTAS doctoral scholar reception, (2009), Blacksburg, VA.

…first authored peer reviewed conferences.

SELECTED MEDIA COVERAGE OF RESEARCH

1. The heart: A tomb for tiny pacemakers? Not if we make them battery free" by Cory Nealon, in the Official UB news, May 17 2017
2. "Medical Devices Aspire to Ditch Batteries" in **The Scientist**, June 8 2017.
3. "Next-gen pacemakers may be powered by unlikely source: the heart" by Cory Nealon, in the Official UB news, October 28 2015.
4. "Next-Gen Pacemakers May Be Powered by the Beating of a Heart" by Eliza Strickland, in **IEEE Spectrum**, June 23 2015.
5. "Let's have a heart-to-heart" in **The Economist**, May 9 2013.
6. "Energy Harvesting, the big and the small", In **ASME Mechanical Engineering Magazine**, March 2013 issue, pp20.
7. "Harnessing Energy From the Body to Run Devices" by Shirley S. Wang, in **The Wall Street Journal**, November 26 2012.
8. "A Heartbeat-Powered Pacemaker", by David Zax, in **MIT Technology Review**, November 7 2012.
9. "Experimental Device Uses Heartbeat to Power Pacemaker", in **Voice of America (VoA)**, November 6 2012.
10. "Heartbeat 'could power pacemaker'", in **BBC News**, November, 5, 2012.
11. "The amazing pacemaker powered by your own heartbeat instead of batteries - and is smaller than a one penny piece" by Claire Bates, in **the Daily Mail**, November 5 2012.
12. "Scientists say heartbeat, not battery, could power pacemakers" by Deena Beasley and Bill Berkrot, in the **Reuters**, November 4 2012.

STUDENTS

DOCTORATE

1. Muath Ahmad Bani Hani, Fall 2013 to Fall 2016 (Currently working in W. Allen engineering Inc.)
2. Hooman Ansari, Fall 2013 to Summer 2018 (Expected)
3. Aditya Nanda, Fal 2013 to Fall 2017 (Expected)
4. Premjit Saha, Fal 2017 to Fall 2021 (Expected)

MASTERS

1. Benjamin Kuch, Fall 2013 to Spring 2015.
2. Karthik Yerraparagada, Fall 2013 to Spring 2015.
3. Antonio Galbier, Fall 2014 to Spring 2016.
4. Xiaobin Guo, Fall 2014 to Spring 2016
5. Peter Corrao, Fall 2016 to Summer 2017
6. Bennett Preston, Fall 2016 to Summer 2007
7. Hamlet Spencer, Fall 2015 to Summer 2017
8. Mostafa Tavakkoli, Fall 2017-Fall 2019

UNDERGRADUATE

1. Zaid Nawaf Sanad 2017

2. Evan Neal 2017
3. Brian Dibble 2017
4. Mark Schiferle 2017
5. Liam Mcdonnell 2017
6. Alec Ambrose 2017
7. Shathushan Sivarangan 2016
8. Zeshan Muhamed Khetani 2016
9. Thach Hoang 2016
10. Pavini Shah 2016
11. Apurv sharma 2016
12. Matthew Andrews 2016
13. Usman Khan 2016
14. Adin Fidahic 2016
15. Fatak Borhani 2016
16. Erikson Duarte 2015 (Underrepresented)
17. Karabi Mitchel 2015 (Underrepresented)
18. Adin Fidahic 2015
19. Emma Depiro 2015 (Underrepresented)
20. Taylor Stovall 2015
21. Tommy Valerio 2015 (Underrepresented)
22. Michael Gazzo 2015
23. Babacar Cisse 2015 (Underrepresented)
24. John McDonough 2015
25. Dustin Nickerson 2015
26. Eric Schamberger 2015
27. Avery Bodenstein 2015
28. Kelly Patterson 2015 (Underrepresented)
29. Alexander Negri 2015
30. Matthew Stein 2015 (University of Rochester)
31. Alberto Padovan 2015
32. Javier Ju 2015 (Underrepresented)
33. Dan Buckmaster 2015
34. Walker Gosrich 2015 (Received Goldwater scholorship)
35. Adres Nuri 2015 (Underrepresented)
36. Prince Joseph 2015
37. Kristian Dolland, 2014

38. Courtney Scott, 2014 (Underrepresented)
39. Andrea Trumpfheller, 2014 (Underrepresented)

K-12

1. Travor Wood 2017
2. Trevon Compito 2015 (Underrepresented)
3. Agnes Santiano 2014 (Underrepresented)

INTERNATIONAL INTERNS

1. Nithin Ramesh 2017