Curriculum Vitae Overview

Amirtahà Taebi, Ph.D.

Assistant Professor of Bioengineering, Lehigh University

Iacocca Hall, Room D318, 111 Research Drive, Bethlehem, PA 18015
(610) 758-4091
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Academic Training

Univ of California, Davis, *Postdoctoral Fellow, Biomedical Eng*	Sep 2018 – Aug 2021
Univ of Central Florida, *Ph.D. in Mechanical Eng*	Aug 2014 – May 2018
Politecnico di Milano, Italy, *M.Sc. in Biomedical Eng*	Oct 2010 – July 2013
Sharif Univ of Tech, Iran, *B.Sc. in Mechanical Eng*	Sep 2006 – Aug 2010

Research Interests

Smart health, noninvasive cardiovascular monitoring, multiphysics cardiovascular modeling, health equity

Selected Honors and Awards

2024 NSF CAREER Award, 2024 ASME Rising Star of Mechanical Engineering, 2025 Lehigh's United Nations Faculty Fellow, 2026 Global Teaching and Learning Fellow, 2026 North American Artery Career Development Award Runner-up, Honorable Mention for Skalak Award by ASME JBME

Research Products

1430+	citations	1	book chapter
20	h-index	30	peer-reviewed journal papers
31	i10-index	32	peer-reviewed conf. papers
2	patent (+3 filed)	23	conf. & symposium presentations
16	invited talks	*For a full list of publications, see:*	bit.ly/2VAtABa

Research Support

$847,053 ($709,073 extramural) | In my control: $796,736

$629,999	ongoing	$217,054	completed grants

Sponsors: NSF, NIH, MS IHL, Lehigh's OVPR, MSU ORED, MSU E-Center

Mentoring

34	mentees in my research group (1 postdoc, 3 PhD, 2 MSc, 23 undergrads, 4 high schoolers, 1 medical student)	11	undergrad mentees in prior positions
		5	Ph.D. & M.Sc. students committee member
		7	DIS & senior design undergraduate students

Teaching

1	new data science concentration developed	1	undergraduate-level course co-developed
1	split-level (grad/undergrad) course *developed*	4	graduate-level courses offered
		14	undergrad level courses offered

Contribution to Diversity, Equity, and Inclusion

Diverse group: My team members are from diverse racial backgrounds, nationalities, and sexes.
Hosted lab tours & open house events for prospective graduate students from underrepresented minorities.
Developed free online courses accessed by users around the world including low-income countries.

Service

Served on local and national grant review panels, including NIH and NSF. Editorial board member of 3 journals. Guest Editor of 6 special issues. Served on department-, college-, and university-level committees and activities. Service to professional societies including the ASME and IEEE.

Professional Societies

ASME, IEEE, American Heart Association, North American Artery

See Next Page for Full CV

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Academic Training

University of California, Davis, Davis, CA — Sep 2018 – Aug 2021
Postdoctoral Fellow, *Biomedical Engineering*
Research area: Multiscale computational modeling of hepatic blood flow, biomedical image processing, deep learning
Supervisor: Emilie Roncali

University of Central Florida, Orlando, FL — Aug 2014 – May 2018
Ph.D. *in Mechanical Engineering*
Research area: Signal processing, statistical analysis, classification, and computational modeling of heart-induced vibrations
Advisor: Hansen Mansy; Committee: Alain Kassab, Azadeh Vosoughi, Helen Huang, Richard Sandler

Politecnico di Milano, Milan, Italy — Oct 2010 – July 2013
M.Sc. *in Bioengineering*
Research area: Biomechanics, gait analysis
Advisor: Manuela Galli; Co-advisors: Firooz Salami, Sara Laura Vimercati

Sharif University of Technology, Tehran, Iran — Sep 2006 – Aug 2010
B.Sc. *in Mechanical Engineering*
Research area: Design and computational modeling of a multifunctional laparoscopic surgical instrument
Advisor: Farzam Farahmand

Positions

1. Academic Positions

Assistant Professor (Tenure track) — Aug 2025 –
Dept. of Bioengineering, Lehigh University, Bethlehem, PA
- Global Teaching and Learning Fellow — May 2026
- Lehigh's Representative to the United Nations — Oct 2025 – Sep 2026

Adjunct Professor — Aug 2025 –
Dept. of Ag. & Biological Engineering, Mississippi State University, Mississippi State, MS

Assistant Professor of Biomedical Engineering (Tenure track) — Aug 2021 – Aug 2025
Dept. of Ag. & Biological Engineering, Mississippi State University, Mississippi State, MS

Postdoctoral Employee — Sep 2018 – Aug 2021
Dept. of Biomedical Engineering, University of California Davis, Davis, CA

Graduate Research / Teaching Assistant — Aug 2014 – Aug 2018
Dept. of Mechanical and Aerospace Engineering, University of Central Florida, Orlando, FL

Graduate Research Mentor — Oct 2016 – Mar 2017
Office of Undergraduate Research, University of Central Florida, Orlando, FL

Lecturer (Part-time) — Oct 2013 – Aug 2014
Depts. of Mechanical Engineering & Civil Engineering, Payame Noor University, Iran

Lecturer (Part-time) — Sep 2013 – Aug 2014
Dept. of Mechanics, Azad University, Iran

Researcher — Aug 2011 – July 2013
Dept. of Electronics, Information, and Bioengineering, Politecnico di Milano, Italy

2. Other Positions

Representative to the United Nations Headquarter May 2026 –
Caring & Living As Neighbors (CLAN), an Australian NGO in consultative status with the Economic and Social Council (ECOSOC) of the U.N.

- Authored and secured official acceptance for a joint CLAN-Lehigh oral statement on newborn screening for congenital conditions at the 2026 UN High-level Political Forum (HLPF). Jul 2026
- Co-authored a joint CLAN-Lehigh written statement published by the 2026 UN High-level Political Forum (HLPF) program. Jul 2026

Member of Advisory Board (Remote) Jun 2019 – May 2022
Balino Medical Team, Isfahan, Iran

Engineering Consultant & Team Leader (Contract) Jan 2020 – Apr 2021
Advanced Signal Processing Team, Infrasonix, Inc., Duluth, GA

Engineering Intern Jul 2009 – Sep 2009
Research & Development Dept., Pars Khodro Co., Iran Jul 2008 – Sep 2008

Intern Oct 2007 – Dec 2007
Saipa Heavy Dies Manufacturing Co., Iran

Publications

***Research Interests*:**

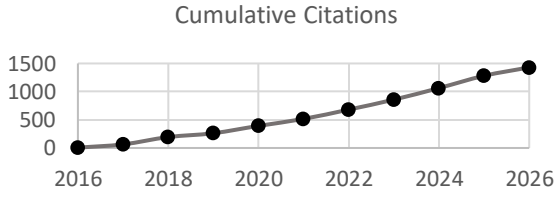
smart health
wearables and remote monitoring
biomedical signal and image processing
noninvasive monitoring of cardiovascular activity
health equity
multiphysics cardiovascular modeling

***Summary*:**

1430+	citations
20	h-index
31	i10-index
2	patent (+1 patent applications filed +2 provisional applications filed)
30	peer-reviewed journal papers (+3 in review)
32	peer-reviewed conference papers (+6 accepted +1 in review)
1	book chapter
23	conference & symposium abstracts and presentations

For a full list of publications, visit my Google Scholar profile.

My mentees: P (postdoctoral researcher), D (doctoral student), M (master's student), U (undergraduate student), # (high school mentees)
Other collaborators: DA (my doctoral adviser), PA (my postdoctoral adviser), I (industrial partner), C (clinical partner)
Equal contribution: †
*** **Convention in the field**: Senior author (lead PI) is listed last. The first and last authors have the largest roles.*



1. Book Chapters

[B1] Gamage, P.T., Azad, M.K., **Taebi, A.**, Sandler, R.H., Mansy, H.A. (2020). Clustering of SCG Events using Unsupervised Machine Learning. In book: Signal Processing in Medicine and Biology. Springer, Cham. DOI: 10.1007/978-3-030-36844-9_7.

2. Peer-Reviewed Journal Papers

[J34] Monfared, M.[D], Khosrow-Khavar, F., Yuldashov, A., Gamage, P.T., **Taebi, A.** (2026). A Digital Twin Framework for Predicting Cardiac Time Intervals in Coronary Artery Disease via Seismocardiography-Based Finite Element Modeling. *In Preparation*.

[J33] Rahman, M.M.[P], **Taebi, A.** (2026). An Adaptive Region Optimization Framework for Short-Term Heart Rate Variability Tracking from Neck rPPG. *In Review*.

[J32] Rahman, M.M.[P], Kakavand, B.[C], **Taebi, A.** (2026). Autonomous Identification of Subject-Specific Vascular Hotspots for Robust Remote Photoplethysmography on the Neck. *In Review*.

[J31] Ahmed, M., Weerasinghe, Y., Grillo, M., Nielsen, I., **Taebi, A.**, Thibbotuwawa, A., Kaya, M., Gamage, P.T., Stress Adaptation Insights from Simultaneous EEG and Heart Rate Variability Monitoring in Emergency Care. *In review*.

[J30] Monfared, M.[D], Kakavand, B.[C], **Taebi, A.** (2026). Deep Learning for Cardiac Wall Motion Analysis: A Review of Methods, Challenges, and Clinical Applications. *Annals of Biomedical Engineering*, DOI: 10.1007/s10439-026-04147-0. [2025 IF: 5.2]

[J29] Roncali, E.[PA], **Taebi, A.** (2026). Computational Fluid Dynamics Simulations to Inform Cancer Therapeutics. *Annual Review of Biomedical Engineering*, 28: 515-38, DOI: 10.1146/annurev-bioeng-110824-021423. [2025 IF: 9.6]

[J28] Rahman, M.M.[P], **Taebi, A.** (2026). Heart rate monitoring from smartphone neck videos using remote photoplethysmography. *ASME Journal of Engineering and Science in Medical Diagnostics and Therapy*, 9(2): 021009, DOI: 10.1115/1.4070844.

[J27] Tabashiri Isfahani, R., Loghmani, A., Akhavan, A., **Taebi, A.** (2025). Heart Inter-Beat Interval Extraction from Ballistocardiography: A Comparative Study of Continuous Local Interval Estimator and Deep Learning Approaches. *J of Computational Methods in Engineering*, 44(2): 49-61, DOI: 10.47176/jcme.44.2.1056.

[J26] Monfared, M.[D], Kakavand, B.[C], Gamage, P.T., **Taebi, A.** (2025). Digital twin-based investigation of seismocardiogram sensitivity to tissue mechanics and myocardial motion. *ASME Journal of Biomechanical Engineering*, 147(12): 121007, DOI: 10.1115/1.4070038. [2024 IF: 1.7]

[J25] **Taebi, A.** Rahman, M.M.[P] (2025). MSCardio seismocardiography dataset: Initial insights from remote monitoring of cardiovascular-induced chest vibrations via smartphones. *Data in Brief*, 61:111889, DOI: 10.1016/j.dib.2025.111889. [2024 IF: 1.4]

[J24] Monfared, M.[D], Gamage, P.T., Loghmani, A., **Taebi, A.** (2025). Computational Modeling of Cardiovascular-Induced Chest Vibrations: A Review and Practical Guide for Seismocardiography Simulation. *International J for Numerical Methods in Biomedical Engineering,* 41(5): e70047, DOI: 10.1002/cnm.70047. [2024 IF: 2.4]

↑ work published with Lehigh affiliation ↑

[J23] Monfared, M.[D], Hollingsworth, L.[U], Gamage, P.T., **Taebi, A.** (2025). Assessing Hemodynamic Changes in Cerebral Aneurysms Post Coil Embolization: A Preliminary Investigation. *ASME Journal of Engineering and Science in Medical Diagnostics and Therapy*, 8(3): 031014, DOI: 10.1115/1.4067534.

[J22] Rahman, M.M.[P], Kakavand, B.[C], Wurm, W.V.[C], Holman, W.L.[C], Movahed, M.R.[C], **Taebi, A.** (2025). From Video to Vital Signs: A New Method for Contactless Multichannel Seismocardiography. *npj Cardiovascular Health*, 2(1): 1, DOI: 10.1038/s44325-024-00034-6

[J21] Mann, A.[M], Rahman, M.M.[P], Vanga, V.[U], Gamage, P.T., **Taebi, A.** (2024) Variation of Seismocardiogram-derived Cardiac Time Intervals and Heart Rate Variability Metrics Across the Sternum. *ASME J of Medical Devices*, 18(4): 044502, DOI: 10.1115/1.4066368. [2024 IF: 0.7]

[J20] Ahmed, M.H., Grillo, M., **Taebi, A.**, Kaya, M., Gamage, P.T. (2024). A Comprehensive Analysis of Trapezius Muscle EMG Activity in Relation to Stress and Meditation. *BioMedInformatics*, 4(2), 1047-1058, DOI: 10.3390/biomedinformatics4020058. [2025 IF: 3.6]

[J19] Davidson, H.[U,†], Scardino, B.[U,†], Gamage, P.T., **Taebi, A.** (2024). Variations of Middle Cerebral Artery Hemodynamics Due to Aneurysm Clipping Surgery. *ASME Journal of Engineering and Science in Medical Diagnostics and Therapy*, 7(1): 011008, DOI: 10.1115/1.4063204.

[J18] Mann, A.[M], Gamage, P.T., Kakavand, B.[C], **Taebi, A.** (2024). Exploring the Impact of Sensor Location on Seismocardiography-Derived Cardiac Time Intervals. *ASME Journal of Engineering and Science in Medical Diagnostics and Therapy*, 7(1): 011007, DOI: 10.1115/1.4063203.

[J17] Rahman, M.M.[P,†], Cook, J.[U], **Taebi, A.**[†] (2023). Non-contact heart vibration measurement using computer vision-based seismocardiography. *Scientific Reports*, 13, 11787, DOI: 10.1038/s41598-023-38607-7. [2023 IF: 3.8]

[J16] **Taebi, A.** (2022). Deep learning for computational hemodynamics: A brief review of recent advances. *Fluids*, 7(6): 197, DOI: 10.3390/fluids7060197, *Editor's Choice*. [2022 IF: 1.9]

[J15] Cook, J.[U], Umar, M.[U], Khalili, F.[I], **Taebi, A.** (2022). Body acoustics for non-invasive diagnosis of medical conditions. *Bioengineering*, 9(4): 149, DOI: 10.3390/bioengineering9040149. [2022 IF: 4.6]

[J14] **Taebi, A.**, Janibek, N.[U], Goldman, R.[C], Pillai, R.[C], Vu, C.[C], Roncali, E.[PA] (2022). On the impact of injection distance to bifurcations on yttrium-90 distribution in liver cancer radioembolization. *Journal of Vascular and Interventional Radiology*, 33(6): 668-677.e1, DOI: 10.1016/j.jvir.2022.03.006, *featured CME JVIR article of the month for June 2022*. [2021 IF: 3.7]

↑↑ work published as a faculty member ↑↑

[J13] **Taebi, A.**, Berk, S.[U], Roncali, E.[PA] (2021). Realistic boundary conditions in SimVascular through inlet catheter modeling. *BMC Research Notes*, 14, 215, DOI: 10.1186/s13104-021-05631-7. [2021 IF: 0.5]

[J12] Khalili, F., Gamage, P.T., **Taebi, A.**, Johnson, M.E.[I], Roberts, R.B.[I], Mitchell, J.[I] (2021). Spectral decomposition of the flow and characterization of the sound signals generated through stenosis of different levels of severity. *Bioengineering*, 8(3):41, DOI: 10.3390/bioengineering8030041.[2021 IF: 5.0]

[J11] Khalili, F., Gamage, P.T., **Taebi, A.**, Johnson, M.E.[I], Roberts, R.B.[I], Mitchell, J.[I] (2021). Spectral decomposition and sound source localization of highly disturbed flow through a severe arterial stenosis. *Bioengineering*, 8(3): 34, DOI: 10.3390/bioengineering8030034. [2021 IF: 5.0]

[J10] **Taebi, A.**, Vu, C.T.[C], Roncali, E.[PA] (2021). Multi-scale computational fluid dynamics modeling for personalized liver cancer radioembolization dosimetry. *ASME Journal of Biomechanical Engineering*, 143:1, DOI: 10.1115/1.4047656, *honorable mention for the 2022 Skalak Award, among top 3 editors' choice papers published by JBME in 2021-22:* 10.1115/1.4065051. [2020 IF: 2.1]

[J9] **Taebi, A.**, Pillai, R.[C], Roudsari, B.[C], Vu, C.[C], Roncali, E.[PA] (2020). Computational modeling of the liver arterial blood flow for microsphere therapy: Effect of boundary conditions. *Bioengineering*, 7(3): 64, DOI: 10.3390/bioengineering7030064, *featured on the journal's website*. [2021 IF: 5.0]

[J8] Roncali, E.[PA], **Taebi, A.**, Roudsari, B.S.[C], Vu, C.T.[C] (2020). Personalized dosimetry for liver cancer radioembolization based on computational fluid dynamics. *Annals of Biomedical Engineering*, 48(5): 1499-1510, DOI: 10.1007/s10439-020-02469-1. [2019 IF: 3.3]

[J7] **Taebi, A.**, Sandler, R.H.[C], Kakavand, B.[C], Mansy, H.A.[DA] (2019). Extraction of Peak Velocity Profiles from Doppler Echocardiography Using Image Processing. *Bioengineering*, 6(3): 64, DOI: 10.3390/bioengineering6030064. [2021 IF: 5.0]

[J6] **Taebi, A.**, Solar, B.E.[U], Bomar, A.J., Sandler, R.H.[C], Mansy, H.A.[DA] (2019). Recent Advances in Seismocardiography. *Vibration* 2(1), 64-86, DOI: 10.3390/vibration2010005, *all-time most-cited and most-viewed paper of the journal* [link], *the second most-cited paper in the field of SCG* [link]. [2022 IF: 2.0]

[J5] Azad, M.K., **Taebi, A.**, Mansy, J.H., Mansy, H.A.[DA] (2017). Pressure Loss and Sound Generated in a Miniature Pig Airway Tree Model. *Journal of Applied Biotechnology and Bioengineering*, 3(6): 00086, DOI: 10.15406/jabb.2017.03.00086.

[J4] **Taebi, A.**, Mansy, H.A.[DA] (2017). Time-frequency Distribution of Seismocardiographic Signals: A Comparative Study. *Bioengineering*, 4(2): 32, DOI: 10.3390/bioengineering4020032. [2021 IF: 5.0]

[J3] **Taebi, A.**, Mansy, H.A.[DA] (2017). Noise Cancellation from Vibrocardiographic Signals Based on the Ensemble Empirical Mode Decomposition. *Journal of Applied Biotechnology and Bioengineering*, 2(2): 00024, DOI: 10.15406/jabb.2017.02.00024.

[J2] **Taebi, A.**, Mansy, H.A.[DA] (2016). Effect of noise on time-frequency analysis of Vibrocardiographic signals. *Journal of Bioengineering and Biomedical Science*, 6(202), 2, DOI: 10.4172/2155-9538.1000202.

[J1] Salami, F., Vimercati, S.L, Rigoldi, C., **Taebi, A.**, Albertini, G., Galli, M. (2014). Mechanical energy assessment of adults with Down syndrome during walking with obstacle avoidance. *Research in Developmental Disabilities*, 35(8), 1856-1862, DOI: 10.1016/j.ridd.2014.04.012. [2013 IF: 2.7]

3. Peer-Reviewed Conference Papers

[C39] Vijayabaskar, S.[U], Rahman, M.M.[P], **Taebi, A.** (2026). Development and Proof-of-Concept of a Multimodal Wearable Neckband for Swallowing Assessment. *In Review*.

[C38] Rana, N.[U], Monfared, M.[D], Gamage, P.T., González-Vargas, J.M., **Taebi, A.** (2026). Acoustic Mapping of Hemodynamic Pressure Fluctuations in Aneurysmal Middle Cerebral Arteries. *2026 ASME International Mechanical Engineering Congress & Exposition*, Vancouver, Canada.

[C37] Rahman, M.M.[P], Kakavand, B.[C], **Taebi, A.** (2026). Advancing Critical Congenital Heart Disease Screening Through Neonatal Chest Surface Vibration Analysis: A Feasibility Study. *2026 ASME International Mechanical Engineering Congress & Exposition*, Vancouver, Canada.

[C36] Weerasinghe, P., Weerasinghe, Y., Lacy, J., Bouchard, B., Velvizhi, H., **Taebi, A.**, Kaya, M., Gamage, P.T. (2026). Validation of a Low-Cost Wireless Inertial Sensor for Seismocardiography. *IEEE Healthcom*

2026, New York, NY.

[C35] Weerasinghe, P., Weerasinghe, Y., Bouchard, B., Lacy, J., Rong, S., **Taebi, A.**, Kaya, M., Gamage, P.T. (2026). Simulation-Assisted Validation of SCG-Derived Chest Displacement using an MRI-Derived Cardiac-Thoracic Model. *IEEE Healthcom 2026*, New York, NY.

[C34] Monfared, M.[D], **Taebi, A.** (2026). Spatiotemporal Analysis of Cardiac-Induced Thoracic Displacement Patterns Through High-Fidelity Modeling. *Computing in Cardiology*, Madrid, Spain.

[C33] Rahman, M.M.[P], **Taebi, A.** (2026). Spatial Mapping of Remote Photoplethysmography Quality in the Anterior Neck for Contactless Heart Rate Monitoring. *Computing in Cardiology*, Madrid, Spain.

[C32] Lang, M., **Taebi, A.**, Boadum, O., González-Vargas, J.M. (2026). Mapping Endovascular Coiling: Developing a Hierarchical Task Analysis for the Design of a Mixed Reality and Artificial Intelligence Training System. *IISE Annual Conference & Expo*, Arlington, TX. DOI: 10.21872/2026IISE_17315.

[C31] Monfared, M.[D], Parks, K.[U], Hollingsworth, L.[U], Hung, J.[#], Knight, J.[#], Gamage, P.T., **Taebi, A.** (2025). Computational Analysis of Cerebral Aneurysm Flow Dynamics at the M2 Bifurcation Using the Low-Reynolds K-ω Turbulence Model. *2025 ASME International Mechanical Engineering Congress & Exposition*, V004T07A004, Memphis, TN, DOI: 10.1115/IMECE2025-166536.

[C30] Monfared, M.[D], Rahman, M.M.[P], Gamage, P.T., **Taebi, A.** (2025). Patient-Specific Myocardial Strain Estimation Using Optical Flow, Deep Learning, and Finite Element Modeling. *2025 ASME International Mechanical Engineering Congress & Exposition*, V004T07A005, Memphis, TN, DOI: 10.1115/IMECE2025-166766.

↑ work published with Lehigh affiliation ↑

[C29] Rahman, M.M.[P], **Taebi, A.** (2025). Contactless heart rate and heart rate variability estimation from neck videos. *47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Copenhagen, Denmark, DOI: 10.1109/EMBC58623.2025.11251812.

[C28] Ahmed, M., Panchookian. J., Grillo, M., Weerasinghe, Y., Qadri, F., Nielsen, I., **Taebi, A.**, Thibbotuwawa, A., Kaya, M., Gamage, P.T. (2025). Stress Classification through Simultaneous EEG, Heart Rate Variability, and EMG Monitoring. *2025 IEEE Medical Measurements & Applications*, Chania, Greece, DOI: 10.1109/MeMeA65319.2025.11068019.

[C27] Rahman, M.M.[P], **Taebi, A.** (2024). Extracting Cardiovascular-Induced Chest Vibrations from Ordinary Chest Videos: A Comparative Study. *IEEE Signal Processing in Medicine and Biology*, DOI: 10.1109/SPMB62441.2024.10842229.

[C26] Monfared, M.[D], Gamage, P.T., **Taebi, A.** (2024). Investigating Seismocardiogram Patterns: A Computational Modeling of Cardiac Wall Motion Propagation to the Chest Surface. *2024 ASME International Mechanical Engineering Congress & Exposition*, V004T06A006, Portland, OR, DOI: 10.1115/IMECE2024-145441.

[C25] Ahmed, M., Weerasinghe, Y., Grillo, M., **Taebi, A.**, Kaya, M., Gamage, P.T. (2024). Feasibility of Left Ventricular Function Assessment via Precordial Vibrations in Heart Failure Patients. *2023 ASME International Mechanical Engineering Congress & Exposition*, V004T06A007, Portland, OR, DOI: 10.1115/IMECE2024-145486.

[C24] Weerasinghe, Y., Sheppard, C., Ahmed, M., Grillo, M., **Taebi, A.**, Wilder, D., Kaya, M., Gamage, P.T. (2024). Markerless Pose Estimation and Wearable Sensor Technology for Enhanced Diagnosis and Monitoring of Idiopathic Toe Walking. *2024 ASME International Mechanical Engineering Congress & Exposition*, V004T06A019, Portland, OR, DOI: 10.1115/IMECE2024-145524.

[C23] Rahman, M.M.[P], **Taebi, A.** (2024). Contactless seismocardiography via Gunnar-Farneback optical flow. *IEEE Conference on Body Sensor Networks*, Chicago, IL, DOI: 10.1109/BSN63547.2024.10780493.

[C22] Rahman, M.M.[P], Mann, A.[M], **Taebi, A.** (2024). ECG-Free Assessment of Cardiac Valve Events Using Seismocardiography. *IEEE Conference on Body Sensor Networks*, Chicago, IL, DOI: 10.1109/BSN63547.2024.10780525.

[C21] Mann, A.[U], Kakavand, B.[C], Gamage, P.T., **Taebi, A.** (2023). Effect of Measurement Location on Cardiac Time Intervals Estimated by Seismocardiography. *2023 ASME International Mechanical Engineering Congress & Exposition*, V005T06A070, New Orleans, LA, DOI: 10.1115/IMECE2023-112702, *best master's paper award in the biomedical and biotechnology track*.

[C20] Ruckman, S.[U,†], Bhatt, J.[U,†], Cook, J.[U], Gamage, P.T., Kakavand, B.[C], **Taebi, A.** (2023). Design, Prototype, and Evaluation of a Low-Cost Multimodal Device for Cardiovascular Monitoring. *2023 ASME International Mechanical Engineering Congress & Exposition*, V005T06A022, New Orleans, LA, DOI:

10.1115/IMECE2023-112486.

[C19] Davidson, H.[U,†], Scardino, B.[U,†], Hollingsworth, L.[†,#], Gamage, P.T., **Taebi, A.** (2023). A Comparative Study of Middle Cerebral Artery Hemodynamics Pre- and Post-Clipping of Cerebral Aneurysm. *2023 ASME International Mechanical Engineering Congress & Exposition*, V005T06A069, New Orleans, LA, DOI: 10.1115/IMECE2023-112822.

[C18] Villa, A., Ahmad, M., **Taebi, A.**, Dong, P., Gu, L., Gamage, P.T. (2023). A Reduced Order Model for Estimation of Fractional Flow Reserve (FFR) in Coronary Artery Disease: Assessing the Impact of Side Branches. *2023 ASME International Mechanical Engineering Congress & Exposition*, V005T06A046, New Orleans, LA, DOI: 10.1115/IMECE2023-112632.

[C17] Ahmed, M., Kaya, M., **Taebi, A.**, Gamage, P.T. (2023). Feasibility of Trapezius Muscle Electromyography and Electrocardiography to Monitor Stress Levels in High Demand Positions. *2023 ASME International Mechanical Engineering Congress & Exposition*, V005T06A023, New Orleans, LA, DOI: 10.1115/IMECE2023-112653.

[C16] Ahmed, M., Kaya, M., **Taebi, A.**, Gamage, P.T. (2023). The Role of Meditation in Stress Recovery and Performance: An EEG Study. *2023 ASME International Mechanical Engineering Congress & Exposition*, New Orleans, LA, V005T06A029, DOI: 10.1115/IMECE2023-114023.

[C15] Rahman, M.M.[P], **Taebi, A.** (2023). Reconstruction of 3-Axis Seismocardiogram from Right-to-left and Head-to-foot Components Using A Long Short-Term Memory Network. *IEEE Conference on Body Sensor Networks*, Boston, MA, DOI: 10.1109/BSN58485.2023.10331617.

[C14] Mann, A.[U], Cook, J.[U], Umar, M.[U], Khalili, F., **Taebi, A.** (2022). Heart Rate Monitoring Using Heart Acoustics. *2022 ASME International Mechanical Engineering Congress & Exposition*, V004T05A069, Columbus, OH, DOI: 10.1115/IMECE2022-96824.

[C13] Khalili, F., **Taebi, A.** (2021). Advances in Computational Fluid Dynamics Modeling of the Body Sounds as a Noninvasive Diagnosis Method. *2021 ASME International Mechanical Engineering Congress & Exposition*, V005T05A041, DOI: 10.1115/IMECE2021-73825.

[C12] **Taebi, A.**, Khalili, F. (2021). Advances in Noninvasive Diagnosis Based on Body Sounds and Vibrations – A Review. *2021 ASME International Mechanical Engineering Congress & Exposition*, V005T05A080, DOI: 10.1115/IMECE2021-73815.

↑↑ work published as a faculty member ↑↑

[C11] **Taebi, A.**, Vu, C.T.[C], Roncali, E.[PA] (2020). Prediction of Blood Flow Distribution in Liver Radioembolization Using Convolutional Neural Networks. *2020 ASME International Mechanical Engineering Congress & Exposition*, Portland, OR, V005T05A036, DOI: 10.1115/IMECE2020-24475.

[C10] **Taebi, A.**, Vu, C.T.[C], Roncali, E.[PA] (2020). Estimation of Yttrium-90 Distribution in Liver Radioembolization using Computational Fluid Dynamics and Deep Neural Networks. *IEEE Engineering in Medicine and Biology Society (EMBC)*, Montreal, QC, Canada, pp. 4974-4977, DOI: 10.1109/EMBC44109.2020.9176328.

[C9] **Taebi, A.**, Sandler R.H.[C], Kakavand, B.[C], Mansy, H.A.[DA] (2018). Estimating Peak Velocity Profiles from Doppler Echocardiography using Digital Image Processing. *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2018.8615618.

[C8] Gamage, P.T., Azad, M.K., **Taebi, A.**, Sandler, R.H.[C], Mansy, H.A.[DA] (2018). Clustering Seismocardiographic Events using Unsupervised Machine Learning. *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2018.8615615.

[C7] **Taebi, A.**, Solar, B.E.[U], Mansy, H.A.[DA] (2018). An Adaptive Feature Extraction Algorithm for Classification of Seismocardiographic Signals. *IEEE SoutheastCon*, Saint Petersburg, FL, DOI: 10.1109/SECON.2018.8478958.

[C6] **Taebi, A.**, Bomar, A.J., Sandler, R.H.[C], Mansy, H.A.[DA] (2018). Heart Rate Monitoring During Different Lung Volume Phases Using Seismocardiography. *IEEE SoutheastCon*, Saint Petersburg, FL, DOI: 10.1109/SECON.2018.8479288.

[C5] **Taebi, A.**, Mansy, H.A.[DA] (2017) Grouping Similar Seismocardiographic Signals Using Respiratory Information, *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2017.8257053.

[C4] **Taebi, A.**, Mansy, H.A.[DA] (2017). Analysis of Seismocardiographic Signals Using Polynomial Chirplet Transform and Smoothed Pseudo Wigner-Ville Distribution, *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2017.8257022.

[C3] **Taebi, A.**, Khalili, F., Taebi, A. (2017). Buckling analysis of a functionally graded implant for treatment of bone fractures: A numerical study. *2017 ASME International Mechanical Engineering Congress & Exposition*, Tampa, FL, DOI: 10.1115/IMECE2017-71066.

[C2] **Taebi, A.**, Zago, M., Condoluci, C., Galli, M. (2017). Mechanical work and power analysis in the joints of the lower extremity of adults with Down syndrome during plane walking. *2017 ASME International Mechanical Engineering Congress & Exposition*, Tampa, FL, DOI: 10.1115/IMECE2017-70950.

[C1] Sharifi, A., Salari, A., **Taebi, A.**, Niazmand, H., Niazmand, M.J. (2017). Flow patterns and wall shear stress distribution in human vertebrobasilar system: A computational study to investigate smoking effects on atherosclerotic stenosis at different ages. *2017 ASME International Mechanical Engineering Congress & Exposition*, Tampa, FL, DOI: 10.1115/IMECE2017-70555.

4. Conference Abstracts

4.a. Received reviewer comments for these abstract submissions and/or abstracts were published in a conference program or proceedings:

[A10] **Taebi, A**. (2026). Decoding The Arterial Signal: From Skin Vibrations to Clinical Hemodynamics. *North American Artery Annual Conference*, Philadelphia, PA, May 8-9, 2026, *Career Development Award Lecture (runner-up)*.

↑ work published with Lehigh affiliation ↑

[A9] Ruckman, S.[U], Taghva, F.[I], **Taebi, A**. (2024). Parent-Centered Design: A Preliminary Usability Study on Newborn Home Cardiac Monitoring. *IEEE Signal Processing in Medicine and Biology*, DOI: 10.1109/SPMB62441.2024.10842267.

[A8] Rahman, M.M.[P], Taghva, F.[I], **Taebi, A**. (2024). Novel Contactless and AI-Based Method Can Determine Heart Rate and Cardiac-Induced Vibrations of Chest. *Circulation* 150 (Suppl_1): A4112524, DOI: 10.1161/circ.150.suppl_1.4112524.

↑↑ work published as a faculty member ↑↑

[A7] **Taebi, A.**, Costa, G.C.A., Roncali, E.[PA] (2021). Personalized dosimetry for brain cancer radioembolization: A feasibility study, *Journal of Nuclear Medicine* 62 (supplement 1) 1582, Link, *nominated for the best abstract*.

[A6] Roncali, E.[PA], **Taebi, A.**, Spencer, B., Costa, G.C.A., Rusnak, M.[C], Caudle, D.[C], Roudsari, B.[C], Pillai, R.[C], Foster, C.[C], Vu, C.[C] (2020). Comparison of Y-90 liver dose distribution predicted with fluid dynamics with Y-90 PET, *Journal of Nuclear Medicine* 61 (supplement 1) 1308, Link.

[A5] Roncali, E.[PA], **Taebi, A.**, Rusnak, M.[C], Spencer, B., Caudle, D.[C], Foster, C.[C], Vu, C.T.[C] (2019). Personalized dosimetry for liver cancer radioembolization using computational fluid dynamics. *European Journal of Nuclear Medicine and Molecular Imaging* 46 (Suppl 1): S134, DOI: 10.1007/s00259-019-04486-2.

[A4] Sandler, R.H.[C], Azad, M.K., Rahman, B., **Taebi, A.**, Gamage, P., Raval, N.[C], Mentz, R.J.[C], Mansy, H.A.[DA] (2019). Minimizing Seismocardiography Variability by Accounting for Respiratory Effects. *Journal of Cardiac Failure* 25(8): S172, DOI: 10.1016/j.cardfail.2019.07.521.

[A3] **Taebi, A.**, Roudsari, B.S.[C], Vu, C.[C], Cherry, S.R., Roncali, E.[PA] (2019). Hepatic arterial tree segmentation: Towards patient-specific dosimetry for liver cancer radioembolization, *Journal of Nuclear Medicine* 60 (supplement 1) 122, Link.

[A2] **Taebi, A.**, Sandler, R.H.[C], Kakavand, B.[C], Mansy, H.A.[DA] (2017) Seismocardiographic Signal Timing with Myocardial Strain, *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2017.8257032.

[A1] Solar, B.E.[U], **Taebi, A.**, Mansy, H.A.[DA] (2017). Classification of Seismocardiographic Cycles into Lung Volume Phases, *IEEE Signal Processing in Medicine and Biology*, Philadelphia, PA, DOI: 10.1109/SPMB.2017.8257033.

4.b. These abstracts were not compiled into proceedings:

[nA7] Monfared, M.[D], Gamage, P., Kakavand, B.[C], **Taebi, A.** (2025). Multiphysics Simulation of SCG Signals Using a Digital Twin of the Human Heart: Toward Virtual Diagnostics of Cardiovascular Diseases. *2025*

ASME International Mechanical Engineering Congress & Exposition, Memphis, TN, November 16-20, 2025.

[nA6] Monfared, M.[D], Gamage, P., Kakavand, B.[C], **Taebi, A.** (2025). A Multiphysics Digital Twin Approach for Understanding and Diagnosing Cardiac Disorders: From Blood Flow to Chest Vibration. *Carnegie Mellon Forum on Biomedical Engineering*, September 19, 2025.

↑ work completed with Lehigh affiliation ↑

[nA5] **Taebi, A.** (2024). Can Newborn Chest Vibrations Provide a New Method for Cardiovascular Health Assessment? *2024 ASME International Mechanical Engineering Congress & Exposition*, Portland, OR, November 17-21, 2024.

[nA4] Monfared, M.[D], Gamage, P., Wurm, W.V.[C], Kakavand, B.[C], **Taebi, A.** (2024). Finite Element Modeling of Seismocardiogram Signals for Enhanced Screening of Congenital Heart Diseases. *2024 ASME International Mechanical Engineering Congress & Exposition*, Portland (OR), November 17-21, 2024.

↑↑ work completed as a faculty member ↑↑

[nA3] Roncali, E.[PA], **Taebi, A.**, Foster, C.[C], Caudle, D.[C], Rusnak, M.[C], Gholami, S.[C], Pillai, R.M.[C], Roudsari, B.[C], Vu, C.T.[C] (2020). Y-90 PET Dose verification for Liver Cancer Y-90 Radioembolization Personalized Dosimetry. *Advanced Cancer Therapies*, Orlando, FL, February 15-17, 2020.

[nA2] **Taebi, A.**, Mansy, H.A.[DA] (2016). Time-Frequency Description of Vibrocardiographic Signals. *38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Orlando, FL, August 17-20, 2016, DOI: 10.13140/RG.2.2.29084.49280.

[nA1] **Taebi, A.**, Mansy, H.A.[DA] (2015). Time-Frequency Analysis of Vibrocardiographic Signals. *Biomedical Engineering Society Annual Meeting*, Tampa, FL, October 7-10, 2015.

4.c. These abstracts were presented at internal symposiums (university- and college-level):

[lA7] Godkin, N.[U], Orpa, J.S.[U], **Taebi, A.** (2026). Developing Low-cost, Multimodal, Neonatal Cardiorespiratory Monitor, *Lehigh Summer Research Expo*, Lehigh University, July 30, 2026.

[lA6] Dooley, J.T., **Taebi, A.**, González-Vargas, J.M. (2026). Every Move Matters: Investigating How Procedural Skills Performance Influence Patient Outcomes in Endovascular Coiling Training, *Undergraduate Research Symposium*, Mississippi State University, April 8-9, 2026.

↑ work completed with Lehigh affiliation ↑

[lA5] Ruckman, S.[U], Bhatt, J.[U], **Taebi, A.** (2024). Design and Usability Testing of a Wireless Multimodal Cardiovascular Monitor, *Undergraduate Research Symposium*, Mississippi State University, April 11-12, 2024.

[lA4] Darrock, F., Graham, A., **Taebi, A.**, Priddy, L., Priddy, M. (2023). Computational fluid dynamics in a perfusion bioreactor, *Undergraduate Research Symposium*, Mississippi State University, April 13-14, 2023.

[lA3] Ruckman, S.[U], Bhatt, J.[U], Cook, J.[U], Gamage, P., Kakavand, B., **Taebi, A.** (2023). Design, prototype, and evaluation of a low-cost multimodal device for cardiovascular monitoring, *Undergraduate Research Symposium*, Mississippi State University, April 13-14, 2023.

[lA2] Mann, A.[U], **Taebi, A.** (2023). Cardiac time interval estimation based on seismocardiography, *Undergraduate Research Symposium*, Mississippi State University, April 13-14, 2023.

↑↑ work completed as a faculty member ↑↑

🏆 [lA1] Perez, B.[U], **Taebi, A.** (2017). Impact of Building Vibrations on Vibrocardiographic Signal Collection, *College of Engineering and Computer Science Office of Diversity and Inclusion Scholars Showcase*, University of Central Florida, Orlando, FL, March 2017, *nominated for the best poster presentation*.

5. Editorials

🏆 [E1] **Taebi, A.** (2024). Computational Fluid Dynamics in Medicine and Biology. *Bioengineering*, 11(11): 1168, DOI: 10.3390/bioengineering11111168, *Editor's Choice*.

6. Patents

[P5] **Taebi, A.** (2026). Systems and methods for neonatal heart screening. Provisional Application. United States of America, filed July 1, 2026 - Application No 64/103,147.

[P4] **Taebi, A.**, Rahman, M.M.[P] (2026). Contactless cardiac health monitoring via neck videography. Provisional Application. United States of America, filed July 1, 2026 - Application No 64/103,128.

[P3] **Taebi, A.** (2024). Multimodal cardiorespiratory monitor. United States of America, filed July 12, 2024 - Application No 18/771,380, Link.

Taebi, A. (2023). Design, prototype, and evaluation of a low-cost multimodal device for cardiovascular monitoring. Provisional Application. United States of America, filed July 14, 2023 - Application No 63/513,790.

[P2] **Taebi, A.** (2024). "Vision-based cardiorespiratory monitoring." U.S. Patent No. 12,714,312, filed July 22, 2024, and issued August 25, 2026. Assignee: Mississippi State University, Office of Technology Management, Link.

Taebi, A. (2023). Vision-based seismocardiography. Provisional Application. United States of America, filed July 21, 2023 - Application No 63/528,161.

[P1] **Taebi, A.**, Farahmand, F. (2013). A multifunctional laparoscopic surgical instrument, scissor-grasper, Iran 78311, filed September 01, 2012 – Declaration No 13915014000304321, issued January 16, 2013.

See Appendices for IP Disclosures submitted to Lehigh's Office of Technology Transfer.

7. Datasets

[D1] **Taebi, A.** & Rahman, M.M.[P] (2025). MSCardio Seismocardiography (SCG) Dataset (Version v0.1) [Dataset]. Zenodo, DOI: 10.5281/zenodo.14975878.

8. Thesis and Dissertation

Taebi, A. (2018). Characterization, Classification, and Genesis of Seismocardiographic Signals [Doctoral dissertation, University of Central Florida]. Electronic Theses and Dissertations, 2004-2019. 5832. https://stars.library.ucf.edu/etd/5832, DOI: 10.13140/RG.2.2.24433.97121.

Taebi, A. (2013). Mechanical energy exchange during plane walking and stepping over obstacle in subjects with Down syndrome [Master Thesis, Politecnico di Milano]. http://hdl.handle.net/10589/81084, DOI: 10.13140/RG.2.1.2308.3849/1.

Taebi, A. (2010). A multifunctional laparoscopic surgical instrument, scissor-grasper [Bachelor Thesis, Sharif University of Technology]. In Persian.

Honors and Awards

Total: $13,123

Career Development Award Runner-up, North American Artery Society — May 2026
Global Teaching and Learning Fellow, Lehigh University's Office of International Affairs — May 2026
United Nations Faculty Fellow, Lehigh University & UN Headquarter in NYC — Oct 2025 - Sep 2026
ASME Rising Star of Mechanical Engineering, American Society of Mechanical Engineers — Nov 2024
Faculty Travel Award, Dean's Office, Bagley College of Engineering, MSU ($1000) — Oct 2024
CAREER Award, National Science Foundation — Jul 2024
Faculty Travel Award, Dean's Office, Bagley College of Engineering, MSU ($1000) — Jun 2024
Honorable Mention for the 2022 Skalak Award, American Society of Mechanical Engineers — Jan 2024
Faculty Travel Award, Dean's Office, Bagley College of Engineering, MSU ($1000) — Jul 2022
Write Winning Grant Proposal Phase II Workshop, Dean's Office, MSU ($4400 in the form of tuition) — Jul 2022
Travel Support to attend NSF EPSCoR Workshop on AI with No-Boundary Thinking, Arkansas State University & Arkansas Economic Development Commission ($873) — Mar 2022
Faculty Travel Award, Dean's Office, Bagley College of Engineering, MSU ($1000) — Feb 2022
Graduate Presentation Fellowship, College of Graduate Studies, UCF ($500) — Nov 2017
Conference Participation Fellowship, Student Government Association, UCF ($250) — Nov 2017
Undergraduate Studies Award, University of Central Florida ($350) — Mar 2017
Registered Student Organization Conference Participation Fellowship, Student Government Association, UCF

($2000) Oct 2016
Graduate Presentation Fellowship, College of Graduate Studies, UCF ($500) Aug 2015
Conference Participation Fellowship, Student Government Association, UCF ($250) Aug 2015
Ranked top 0.5% in the nationwide university entrance exam, Iran Jul 2006

Research Support

Total: $847,053

Excludes startup support and support received by mentees.

In my control: $796,736

Summary:

$629,999 ongoing grants = $599,999 extramural + $30,000 intramural)
$217,054 completed grants = $109,074 extramural + $107,980 intramural)
Sponsors: NSF, NIH, Lehigh's OVPR, Mississippi Institutions of Higher Learning, Lehigh OVPR, MSU's Office of Research and Economic Development (ORED), MSU's Center for Entrepreneurship & Outreach (E-Center)

1. Ongoing Grants

Total: $629,999
In my control: $601,182

1.a. Extramural

Total: $599,999
In my control: $581,182

[Ge3] 2340020, NSF / CBET 07/01/24 – 06/30/29
CAREER: Chest Vibrations as Markers of Critical Congenital Heart Defects: Characterization, Genesis, and Clinical Significance (link)
Role: PI (Senior Personnel: Bahram Kakavand [Nemours Children's Hospital])
Budget: $599,999 ($299,999 moved to Lehigh, $131,980 de-obligated upon transition to Lehigh)
In my control: $581,182

1.b. Intramural

Total: $30,000
In my control: $20,000

[Gi12] LUSCAWD625, OVPR Fund to Integrate Artificial Intelligence in Research 03/01/26 – 02/28/27
Real-Time Cardiac Digital Twins: Accelerating Seismocardiography Diagnostics via Physics-Informed Machine Learning
Role: PI
Budget: $20,000 [direct costs only]
In my control: $20,000

[Gi11] I-DISC Seed Funding, Lehigh 03/01/26 – 02/28/27
Multimodal Fusion of Cardiac Signals for Cardiovascular Disease Monitoring
Role: Co-PI (PI: Meng Zhao)
Budget: $10,000 [direct costs only]
In my control: –

2. Completed Grants

Total: $217,054
In my control: $195,554

2.a. Extramural

Total: $109,074
In my control: $109,074

[Ge2] NIH Mid-South REACH Program (under U01GM152538) 04/01/25 – 11/30/25
An app front-end for AI-powered screening of neonatal cardiovascular health
Role: PI (co-PI after moving to Lehigh in Aug 2025, new PI: Alex Thomasson at MSU)
Budget: $50,000 [direct costs only]
In my control: $50,000

[Ge1] 2024-04, SMART Business Act, Mississippi Institutes of Higher Learning 04/22/24 – 04/21/25
Intelligent CardioScope: AI-Powered Cardiac Imaging Based on Cardiovascular-Induced Vibrations of the Chest (link)
Role: PI

Budget: $59,074
In my control: $59,074

2.b. Intramural Total: $107,980
In my control: $86,480

[Gi10] Mountaintop Summer Program, Creative Inquiry, Lehigh 06/01/26 – 07/30/26
Developing a low-cost AI-based multimodal cardiorespiratory monitor
Role: PI
Budget: $10,300 (undergrad stipend × 2)
In my control: $10,300

[Gi9] FYRE Module Development, Lehigh 05/15/26 – 08/14/26
Sustainable Bioelectronics and Global Health Innovation: An Integrated Training Program for Translational Engineering and Impact
Role: Co-Lead (Lead: Dhruv Seshadri; Co-Lead: Juan Aceros)
Budget: $20,000 [direct costs only]
In my control: –

[Gi8] Record #374, ORED Undergraduate Research Program Grant, MSU 06/01/24 – 08/30/25
An Integrated Safety System for Agricultural Workers
Role: Co-I (PI: Hussein Gharakhani)
Budget: $1,500 [direct costs only]
In my control: –

[Gi7] Record #373, ORED Undergraduate Research Program Grant, MSU 06/01/24 – 08/30/25
Smart Wearable Design: Prototyping a Hand-Load Sensing Device
Role: PI (Co-I: Hussein Gharakhani)
Budget: $1,500 [direct costs only]
In my control: $1,500

[Gi6] Record #335, ORED Undergraduate Research Program Grant, MSU 06/01/24 – 08/30/25
User Experience Assessment of a Cardiovascular Monitor for Newborns
Role: PI
Budget: $2,000 [direct costs only]
In my control: $2,000

[Gi5] NSF Southeast Regional I-Corps Program 10/09/24 – 11/06/24
Intelligent CardioScope
Role: Technical Lead (Entrepreneurial Lead: Faezeh Taghva)

[Gi4] Quick Grants Program, Office of Research and Economic Development, MSU 07/01/23 – 06/30/24
Novel cardiovascular imaging modality based on seismocardiography
Role: PI
Budget: $66,180 [direct costs only]
In my control: $66,180

[Gi3] Record #278, ORED Undergraduate Research Program Grant, MSU 08/01/23 – 08/15/24
Design, prototype, and evaluation of a low-cost multimodal device for cardiovascular monitoring
Role: PI
Budget: $1,500 [direct costs only]
In my control: $1,500

[Gi2] NSF I-Corps Site Program at MSU 06/01/23 – 12/01/23
Seismocardiography Scanner: An Accessible and Portable Cardiovascular Imaging Modality
Role: Technical Lead (Entrepreneurial Lead: Faezeh Taghva)
Budget: $3,000
In my control: $3,000

[Gi1] Record #212, ORED Undergraduate Research Program Grant, MSU 11/01/22 – 12/01/23

Cerebral aneurysm mathematical modeling
Role: PI
Budget: $2,000 [direct costs only]
In my control: $2,000

See Appendices for submitted and pending proposals.

Invited Talks & Panels

Excluding guest lectures for classes and job talks.

[T16] Universidad Rey Juan Carlos, Madrid, Spain — Sep 24, 2026
Third Workshop on Cardiac Mechanical Signals
Panelist on "Expert Panel: BCG & SCG Modeling"

[T15] Philippine General Hospital, Manila, Philippines — Jul 27, 2026
Cardiology Fellows' Research Meeting
"Seismocardiography-based cardiovascular monitoring"

[T14] University of the Philippines Diliman, Quezon City, Philippines — Jul 20, 2026
Panelist on "Humanitarian Design and Social Enterprise (HDSE) Leadership Intensive Opening Ceremony"

[T13] Department of Internal Medicine, UC Davis Health (Virtual) — Mar 31, 2026
Heart Failure Team Meeting
"Noninvasive monitoring of cardiac changes in LVAD patients"

[T12] Lehigh Valley Heart and Vascular Institute, Allentown, PA — Jan 13, 2026
Cardiology Fellows' Research Meeting
"Seismocardiography for Scalable and Remote Cardiovascular Monitoring"

[T11] Department of Biomedical Engineering and Science, Florida Institute of Technology (Virtual) — Oct 1, 2025
BES Research Seminar
"Scalable Remote Cardiovascular Monitoring via Ubiquitous Devices"

[T10] Endeavors Journal, Undergraduate Research and Creative Discovery, MSU, Starkville, MS — Mar 21, 2025
"How to review scientific manuscripts in the area of engineering and technology and health sciences"

[T9] Office of Research Compliance and Security, Mississippi State University, Starkville, MS — Dec 4, 2024
Annual IRB Retreat
"Next-Gen Cardiovascular Diagnostics: From Contactless Monitoring to Personalized Digital Twins"

[T8] Mississippi Health Innovation Conference, Jackson, MS — Mar 26, 2024
Panelist on "The Future of Technology in Healthcare: AI and ChatGPT"

[T7] Physician Assistant Studies Program, Mississippi State University, Meridian, MS — Mar 8, 2024
Grand Round
"Contactless Cardio Care: Leveraging Smartphones for Heart Health Monitoring"

[T6] Center for Cyber-Physical Systems, University of Georgia — Oct 27, 2023
Data Science and AI Seminars
"Contactless monitoring of cardiovascular activity using a smartphone"

[T5] Department of Biomedical Engineering, Michigan Technological University (Virtual) — Oct 6, 2023
Graduate Research Seminars
"No Touch, No Problem: How Ordinary Videos Can Track Your Heart Activity"

[T4] Department of Mechanical Engineering Seminar, Isfahan University of Technology — Jul 4, 2023
Acoustic-Vibration Analysis Laboratory
"Cardiovascular monitoring by seismocardiography"

[T3] Mississippi Health Innovation Conference, Jackson, MS — Aug 16, 2022

Panelist on "Can I be my own doctor? Wearables, apps, and other hardware and technology"

[T2] Sensorweb Research Laboratory, University of Georgia (Virtual) May 4, 2021
"Characterization and classification of seismocardiographic signals using respiration information"

[T1] Department of Mechanical Engineering, Isfahan University of Technology Sep 14, 2019
Departmental Seminar
"Developing novel diagnostic methods for cardiac and hepatic diseases based on mechanical engineering: Towards interdisciplinary research"

Teaching

Summary:

1 #data science concentration (biomedical informatics) *developed*
1 split-level (graduate/undergraduate) course *developed*
1 undergraduate-level course *co-developed*
4 graduate-level courses offered (at Lehigh and other institutions)
14 undergraduate level courses offered (at Lehigh and three other institutions)
2 inquiry to impact group projects mentored
3 as TA for undergraduate-level courses (at two other institutions)
2 study abroad programs led or co-led (Italy 2025, Philippines 2026)

 # I developed the Biomedical Informatics Concentration for the B.Sc. program in Data Science at Mississippi State University. Comprising 30 credit hours, this concentration is administered under the Office of the Provost and Executive Vice President and launched in Fall 2025.

MSU = Mississippi State University; UCF = University of Central Florida; SUT = Sharif University of Technology; PNU = Payame Noor University; IAU = Islamic Azad University
G = Graduate; UG = Undergraduate
F = Fall; S = Spring; U = Summer

Course #	*Course Title*	*Credit*	*Role*	*Level(s)*	*Semester(s)*	*# of Students*
ENGR 005	Introduction to Engineering Practice	2	Instructor	LU, UG	F27	24
MAT 450 350	Effective Scientific Communication: Proposals, Figures, Papers, and Presentations	2	Co-instructor	LU, G UG	F27	10 (G) 1 (UG)
–	GSIF Philippines Fieldwork	–	Co-lead	LU, UG	U26	18
BIOE 455	Scientific & Professional Communications	3	Instructor	LU, G	S26	10
BIOE 415 315	Bioengineering Statistics	3	Instructor	LU, G UG	S26	22 (G) 7 (UG)
CINQ 388	Inquiry to Impact Group Projects	1	Instructor	LU, UG	S26, U26, F26	3 (GSIF) 3 (NGIF)
	↑ classes taught at Lehigh ↑					
EM 2413	Engineering Mechanics I: Statics in Rome, Italy [Study Abroad]	3	Lead & instructor	MSU, UG	U25	15
ABE 6633 4633	Biomedical Signals and Sensors [Developed Course]	3	Instructor	MSU, G UG	S25	0 (G) 2 (UG)
ABE 1912	Computational Problem Solving for Biological Systems [Developed Course]	2	Co-instructor	MSU, UG	F24, F23	120, 91
ABE 4323	Physiological Systems in Biomedical Engineering	3	Instructor	MSU, UG	F24, F23, F22, F21	78, 59, 56, 84

ABE 6990	Special Topics: Biomedical Signals and Sensors [Developed Course]	3	Instructor	MSU, G	S23	4
	↑↑ Total number of undergraduate students in tenure-track positions (MSU & LU)					**555**
	↑↑ Total number of graduate students in tenure-track positions (MSU & LU)					**46**
EML 3303 EAS 3800	Mechanical Engineering Measurements Aerospace Engineering Measurements	3	Lab instructor, G Teaching Assistant	UCF, UG	F17, U17, S17, F16, U16, S16, F15, U15, S15	40-60
EGN 3321	Engineering Analysis - Dynamics	3	G Teaching Assistant	UCF, UG	F14	~180
	Machine Elements Design II	3	Lecturer	PNU, UG	S14	20
	Engineering Drawing	3	Lecturer	PNU, UG	S14, F13	15
	Technical English Language	3	Lecturer	PNU, UG	S14, F13	20
314	Machine Elements Design II	3	Lecturer	IAU, UG	S14	8
302	Engineering Mechanics (Statics)	3	Lecturer	IAU, UG	S14, F13	~40
305	Strength of Materials	3	Lecturer	IAU, UG	S14	~30
122	Technical English Language	3	Lecturer	IAU, UG	F13	~30
28-263	Strength of Materials II	3	UG Teaching Assistant	SUT, UG	S10	~60

Mentoring

Summary:

34 research mentees in my current position as a faculty member
(1 postdoc, 3 PhD students, 2 MSc students, 23 undergraduate students, 4 high schoolers, 1 medical student)
9 undergraduate academic advisees
6 creative inquiry undergraduate advisees
11 undergraduate research mentees in the prior positions
2 Ph.D. student committee member
3 M.Sc. students committee member
4 Senior Design undergraduate students
3 DIS undergraduate students

For a full list of mentees, their bio, and research projects, see: taebilab.lehigh.edu/team

1. Mentees in my Current Position as a Faculty Member

LU = Lehigh; MSU = Mississippi State University; F = Fall; S = Spring; U = Summer

1.a Postdoctoral Researchers

Mohammad Muntasir Rahman, LU & MSU 07/2022–
Research Topic: Vision-based seismocardiography and cardiovascular monitoring
Publications: [J33, J32, J28, J25, J22, J21, J17, C39, C37, C33, C30, C29, C27, C23, C22, C15, A8, P4]
Financial Support: {F22, S23, U23: MSU startup}, {F23, S24, U24: [Gi4]}, {F24: [Ge3] + Dept. TA at MSU}, {S25, U25: [Ge1] + [Ge3]}, {F25, S26, U26, F26: Lehigh startup}

1.b Ph.D. Student Major Advisor

Khadiza Tun Suha, LU, Bioengineering 08/2026–
Research Topic: Arterial health evaluation based on body surface vibrations
Financial Support: {F26: Dean's fellowship}, {S27, U27: [Ge3]}
Expected Graduation: 08/2030

Rawane Ait Tahar, LU, Bioengineering 08/2026–
Research Topic: Hemodynamic estimation from noninvasive chest vibration measurements
Financial Support: {F26: Lehigh startup}, {S27: [Ge3]}
Expected Graduation: 08/2030

Mohammadali Monfared, LU & MSU, Bioengineering 08/2023–
Research Topic: Numerical modeling of cardiac vibration propagation inside the thorax
Publications: [J30, J26, J24, J23, C38, C34, C31, C30, C26, nA7, nA6, nA4]
Financial Support: {F23, S24, U24: MSU startup}, {F24, U25: [Ge3]}, {S25: Dept. TA at MSU}, {F25, S26, U26: Lehigh startup + [Gi12]}, {F26: [Gi12]}, {S27, U27: TA}
Expected Graduation: 12/2027 (candidacy proposal passed in June 2026)

Rukiye Tuna, MSU, Biomedical Engineering 01/2022–12/2022
(transferred to Florida State University due to a family-related reason)
Research Topic: Numerical modeling of cardiac vibration propagation inside the thorax
Financial Support: {S22, U22, F22: MSU startup}

1.c M.Sc. Student Major Advisor

Josh Berdon, LU, Data Science 08/2026–
Research Topic: Characterization of seismocardiogram signals using AI-assisted digital twins

Aysha Mann, MSU, Biomedical Eng–accelerated program (next→ Clinical Specialist at Stryker) 08/2023–05/2024
Thesis Title: The analysis and comparison of cardiac time intervals via seismocardiography, Link
Publications: [J21, J18, C22, C21]
Financial Support: {F23: Dept. TA at MSU}, {S24: Dept. RA at MSU}

1.d Undergraduate Researchers

Next position is only mentioned for those undergraduate researchers that were a member of my group at the time of their graduation.

Neil Rana, LU, Bioengineering [Pub. C38] 09/2025–
Karina Makhani, LU, Computer Science & Business (next→ Software Engineer at R1 RCM) 09/2025–05/2026
Sowmya Vijayabaskar, LU (collaborating academic visitor from SRM Institute of Science & Technology, India), Bioengineering (next→ MSc student in BME at National Uni. of Singapore) [Pub. C39] 09/2025–02/2026
Zeedan Khan, MSU, Computer Science 05/2025–12/2025
Saphal Uperti, MSU, Computer Engineering 12/2024–08/2025
Robert Knox, MSU, Electrical Engineering 05/2025–07/2025
Joshua Fisher, MSU, Biomedical Engineering 12/2024–05/2025
James Terry, MSU, Biomedical Engineering 12/2024–05/2025
Avery Ardoin, MSU, Biomedical Engineering 12/2024–05/2025
Mary-Addison Wolfe, MSU, Biomedical Engineering 08/2024–05/2025
Hannah Henson, MSU, Microbiology 08/2024–05/2025
Pranavi Paudel, MSU, Biomedical Engineering 03/2024–05/2025
Kamryn Parks, MSU, Mathematics [Pub. C31] 09/2023–05/2025
Luke Hollingsworth, MSU, Biomedical Engineering [Pub. J23, C31] 08/2023–05/2025
Jigar Bhatt, MSU, Computer Engineering, Named as a Bagley College of Engineering Student Hall of Fame in Spring 2025 (next→ MSc student at MSU Electrical Engineering) [Pub. C20, lA5, lA3] 12/2022–05/2025
Sophia Ruckman, MSU, Biomedical Engineering, President's Scholar (next→ medical student at The University of Alabama at Birmingham) [Pub. C20, A9, lA5, lA3] 08/2022–05/2025
Vineeth Vanga, MSU, Biochemistry & Molecular Biology [Pub. J21] 08/2023–12/2023
Haleigh Davidson, MSU, Biomedical Engineering (next→ MSc student at MSU BME) [Pub. J19, C19] 11/2021–05/2023
Brooke Scardino, MSU, Biomedical Engineering, President List (next→ medical student at LSU) [Pub. J19, C19] 11/2021–05/2023
Aysha Mann, MSU, Biomedical Engineering, BCoE Undergraduate Research Program Awardee (next→ MSc student in my group at MSU BME) [Pub. C14, lA2] 10/2021–05/2023
Jadyn Cook, MSU, Biomedical Engineering, Dean's List (next→ PhD student at UNC/NCSU BME) [Pub. J17, J15, C20, C14, lA3] 09/2021–12/2022
Muneebah Umar, MSU, Biological Sciences, Presidential Endowed Scholar [Pub. J15, C14] 10/2021–05/2022

Ashley Motton, MSU, Biological Sciences (next→ MSc student in Biomedical Sciences at University of Mississippi Medical Center) 09/2021–12/2021

1.e High School Students

Abhimanyu Deeraj, V.R. Eaton High School, Fort Worth, TX 10/2025–
Judy Hung, The Mississippi School for Mathematics and Science, Columbus, MS (next→ Undergraduate student in Biology at Macalester College as a QuestBridge Scholar) [Pub. C31] 09/2024–05/2025
Joey Knight, The Mississippi School for Mathematics and Science, Columbus, MS [Pub. C31] 09/2024–12/2024
Luke Hollingsworth, The Mississippi School for Mathematics and Science, Columbus, MS (next→ Undergraduate student at MSU BME and an Undergraduate Researcher in my group) [Pub. C19] 01/2023–04/2023

1.f Medical Students

Krishna Narramneni, Temple/St Luke's School of Medicine 09/2025–12/2025

1.g Ph.D. Student Committee Member

James Skoric, McGill University, Electrical Engineering, External Examiner (major professor: David Plant), Summer 2025
Dissertation Title: Wearable Health Monitoring with Seismocardiography and Generative Modelling, Link
Nikrouz Bahadormanesh, McMaster University, Mechanical Engineering, External Examiner (major professor: Zahra Keshavarz Motamed), Summer 2024
Dissertation Title: Doppler-exclusive non-invasive computational diagnostic frameworks for personalized cardiology of left-side heart valves, Link

1.h M.Sc. Thesis Committee Member

Haleigh Davidson, MSU, Biomedical Engineering, Committee Member (major professor: David van den Heever), Spring 2025, Link
Thesis Title: Neural Signatures of ADHD: A Fast Periodic Visual Stimulation EEG Study
Raahul Pathak, MSU, Biomedical Engineering, Committee Member (major professor: David van den Heever), Fall 2023
Thesis Title: Applying artificial intelligence to electroencephalogram and mapping onto a virtual prosthesis
Timothy Cook, MSU, Biomedical Engineering, Committee Member (major professor: Steve Elder), Spring 2022
Thesis Title: A mechanical and finite element analysis of bone screw thread design, Link

1.i Undergraduate Academic Advisees

Rhiannon Roth (2026-), Mary Hope Swarts (2026-), Nita Ayele (2026-), Lucas Blatcher (2026-), Kai Mattern (2026-), Maeve Motto (2026-), Taylor O'Brien (2026-), Ellie Roppa (2026-), Olive Stockton (2026-)

1.j Undergraduate Creative Inquiry Advisees

NGIF: Next Generation Impact Fellowship
GSIF: Global Social Impact Fellowship; PHI: Philippines

Kelly Wu (01/2026-12/2026; GSIF PHI), Lily Osias (01/2026-12/2026; GSIF PHI), Nita Ayele (01/2026-12/2026; GSIF PHI), Jarin Subha Orpa (01/2026-12/2026; NGIF), Natalie Pham (01/2026-12/2026; NGIF), Natalie Godkin (01/2026-12/2026; NGIF)

1.k Undergraduate Students, Directed Individual Study

Neil Rana, LU, Bioengineering, "Computational modeling of brain aneurysm hemodynamics", Spring 2026
Jadyn Cook, MSU, Biomedical Engineering, "Non-invasive monitoring of the cardiovascular activity", Fall 2022
Maggie Jo Everett, MSU, Biochemistry, "Personalized treatment for brain diseases", Spring 2022

1.l Undergraduate Students, Senior Design

Hannah Kinnison, MSU, Biomedical Engineering, Fall 2024
Elijah Gregory, MSU, Biomedical Engineering, Fall 2024
Kristina Oshiro, MSU, Biomedical Engineering, Fall 2024

Molleigh Martin, MSU, Biomedical Engineering, Fall 2024

2. Mentees from Previous Positions

UC Davis = University of California, Davis
UCLA = University of California, Los Angeles
UCF = University of Central Florida
LEARN = UCF Learning Environment and Academic Research Network program, 2-semester program

Selin Berk, UCLA, Aerospace Engineering, Undergraduate, 06/2020–08/2021
Shaan Bhalaru, UC Davis, Electrical Engineering, Undergraduate, 10/2019–08/2021
Nursultan Janibek, UC Davis, Mechanical Engineering, Undergraduate, 04/2019–08/2021
Yamini Sharma, UC Davis, Computer Science, Undergraduate, 04/2019–08/2019
Fiona Kilby, UC Davis, Animal Sciences, UC Davis University Honors Program Undergraduate, 04/2019–08/2019
Brian E. Solar, UCF, Aerospace Engineering, UCF Honors in the Major Program Undergraduate, 03/2017–05/2018 (next→ graduate student at Georgia Tech)
Taylor Alfonso, UCF, Biomedical Sciences, Undergraduate, 01/2017–04/2017 (next→ medical student at Lake Erie College of Osteopathic Medicine)
Alex Vega, UCF, Mechanical Engineering, LEARN Program Undergraduate, 10/2016–05/2017
Bolivar Perez, UCF, Civil Engineering, LEARN Program Undergraduate, 10/2016–05/2017 (next→ graduate student at U of Illinois at Urbana-Champaign)
Corey Priewe, UCF, Biomedical Sciences, Undergraduate, 05/2016–07/2016
Brandon Henley, UCF, Mechanical Engineering, Undergraduate, 05/2016–12/2016 (next→ graduate student at Georgia Tech)

3. Other Mentorships

MIT Hacking Medicine, Grand Hack, October 2–4, 2020
MIT COVID-19 Challenge, India: Turning the Tide, MIT, August 28–30, 2020
Code to Care, Business School, Imperial College London, June 29–July 3, 2020
MIT COVID-19 Challenge, Latin America vs. COVID-19, MIT, June 19–21, 2020

4. Awards and Scholarships Received by Mentees

Khadiza Tun Suha, Dean's Fellowship, Lehigh University — Fall 2026
Natalie Godkin, Mountaintop Fellowship, Lehigh University [Gi10] — Summer 2026
Jarin Subha Orpa, Mountaintop Fellowship, Lehigh University [Gi10] — Summer 2026
Mohammad Muntasir Rahman, 2025 Postdoctoral Associate of Distinction for his 2024-2025 Scholarly Achievements, MSU Post Doctoral Advisory Committee, Mississippi State University — Jul 2025
Jigar Bhatt, 2025 Bagley College of Engineering Student Hall of Fame, Mississippi State University — Mar 2025
Mohammadali Monfared, Student Research Travel Award, Bagley College of Engineering, Mississippi State University ($500) — Fall 2024
Sophia Ruckman, Undergraduate Research Program Award, Bagley College of Engineering, Mississippi State University ($2,500) — Fall 2024 - Spring 2025
Jigar Bhatt, Undergraduate Research Program Award, Bagley College of Engineering, Mississippi State University ($2,500) — Fall 2024 - Spring 2025
Sophia Ruckman, Honors Undergraduate Research Fellowship, Shakouls Honors College, Mississippi State University ($600) — Summer 2024
Aysha Mann, ASME IMECE 2023 Track 6 Graduate Student Paper Competition Award ($200) — Nov 2023
Mohammadali Monfared, Graduate Recruitment Assistant Grants Fellowship Award, Graduate School, Mississippi State University ($2,500) — Sep 2023
Aysha Mann, Student Research Travel Award, Dean's Office, Mississippi State University ($500) — Aug 2022
Aysha Mann, Undergraduate Research Program Award, Bagley College of Engineering, Mississippi State University ($2,000) — Fall 2022 - Spring 2023

Outreach Activities

[O1] Apr 22, 2025 – The Mississippi School for Mathematics and Science, Columbus, MS
"Heart Heroes: Unlocking the Secrets of Critical Congenital Heart Diseases"

Service

1. Lehigh University Activities

1.a University-level Activities

Role of AI in Tenure and Promotion Working Group (Faculty Senate), Member — Aug 2026 –
Faculty Senate, Senator — Jul 2026 –

1.b College-level Activities

Rossin College Admissions Open House, 11:30 am – 12:30 pm — Sep 13, 2026

1.c Department-level Activities

Departmental Seminar Organizer — Feb 2026 –

2. Mississippi State University Activities

2.a University-level Activities

P&T Innovation and Entrepreneurship (PTIE) Task Force (reported to provost) — Sep 2024 – Aug 2025
Faculty Affairs Committee (Faculty Senate), Member — Jul 2024 – Aug 2025
Faculty Senate, Senator representing Bagley College of Engineering — Jul 2024 – Aug 2025

2.b College-level Activities

Program and Grant Development Specialist Search Committee, Member — Fall 2021

2.c Department-level Activities

Public Relations Committee, Member — Jul 2023 – Aug 2025
Established a prestigious student group in the department called "ABE Diplomats" — Jul 2024
Faculty Search Committee, Chair — Oct 2023 – Jul 2024
Research Lab Space Allocation Committee, Member — Oct 2021 – Aug 2022
MSU-UMMC Engineering Excellence in Device Development (UMEEDD) Program Committee — Aug 2021 – Jun 2022

3. Grant Review Panels

NSF, Engineering of Biomedical Systems Program (EBMS) CAREER Panel — 2026
MSU, Office of Research & Econ Development's Advanced Research Collaboratory Program — Jan 2025
NSF, Engineering of Biomedical Systems Program (EBMS) Panel — 2024
NIH, Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section — 10–11 Jun 2024
University of Mississippi Medical Center's Intramural Research Support Program — 9 Nov 2022

4. Editing & Reviewing

Associate Editor, *ASME J Medical Diagnostics & Therapy* — Mar 2025 –
Editorial Board Member, *Scientific Reports* — Jun 2023 –
Associate Editor, *BMC Research Notes* — Jan 2021 –
Topical Advisory Panel, *Bioengineering* — Nov 2020 – Oct 2022
Guest Editor, 6 special issues/collections in the journals of *Scientific Reports*, *Bioengineering*, *Vibration*, *Acoustic*, *Applied Sciences*, *Dynamics*
Member of Reviewer Board, *Sensors*, and *Applied Sciences*
Reviewer for 20+ journals:

IEEE Signal Processing Letters
IEEE Transactions on Biomedical Engineering
IEEE J of Biomedical and Health Informatics
IEEE Access
Annals of Biomedical Engineering
Cardiovascular Engineering and Technology
J of Vascular and Interventional Radiology
Frontiers in Oncology
Sensors
Vibration Engineering & Technologies
Applied Sciences
Biomedical Physics & Engineering Express
Computer Methods and Programs in Biomedicine
Scientific Data
Computation
Technologies
Algorithms
Energies
Symmetry
Remote Sensing
Entropy

Reviewer for the following conferences:

2026 ASME IMECE
2025 ASME IMECE
2021 TFEC
2020 TFEC
2019 BMES Annual Meeting
2018 IEEE SoutheastCon
2018 IEEE BioCAS

5. Conferences, Symposiums, & Seminars

5.a National & International Conferences

Chair, Biomedical & Biotechnology Track, 2026 ASME International Mechanical Engineering Congress & Exposition, Vancouver, BC

Referee, Humanitarian Design and Social Enterprise (HDSE) Leadership Intensive – National Cohort, University of the Philippines Diliman, Quezon City, Philippines, July 31, 2026, 10 am – 1 pm

Referee, Humanitarian Design and Social Enterprise (HDSE) Leadership Intensive – UPD Cohort, University of the Philippines Diliman, Quezon City, Philippines, July 24, 2026, 1–3 pm

Chair-Elect (Co-Chair), Biomedical & Biotechnology Track, 2025 ASME International Mechanical Engineering Congress & Exposition, Memphis, TN

- 118 oral and poster presentations within our track

Topic Co-Chair & Session Co-Chair, Biomedical & Biotechnology Track: Vibration and Acoustics in Biomedical Applications Topic, 2025 ASME International Mechanical Engineering Congress & Exposition, Memphis, TN, November 17–20, 2025

Session Co-chair, Noise in Physiological Systems session, 2025 IEEE Engineering in Medicine and Biology Conference, Copenhagen, Denmark, July 14-17, 2025

Topic Co-Chair, Biomedical & Biotechnology Track: Vibration and Acoustics in Biomedical Applications Topic, 2024 ASME International Mechanical Engineering Congress & Exposition, Portland, OR, November 17–21, 2024

Judge, Best Graduate Presentation Competition – Biomedical & Biotechnology Track, ASME International Mechanical Engineering Congress & Exposition, New Orleans, LA, October 30 – November 2, 2023

5.b Local Symposiums, Programs, & Seminars

Host, Intelligent Medical Decision-Making Seminar Series, Available at taebilab.lehigh.edu/seminars

Evaluator, Undergraduate Research Symposium, Apr 12, 2024, Poster session 9:30–11:30 am

Judge, MSU Undergraduate Research Symposium – Biomedical Research Sub-competition, Apr 14, 2023, Poster session 10–11:30 am

Judge, MSU Undergraduate Research Symposium – Engineering Research Award, Apr 14, 2023, Poster session 10–11:30am

Judge, MSU Graduate Research Symposium, Feb 26, 2022, Poster session 1–2:20 pm

6. Professional Societies

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)	2026 –
Member, North American Artery (NAA)	2026 –
Member, IEEE EMBS Technical Community on Wearable Biomedical Sensors and Systems	Dec 2024 –
Member, American Heart Association (AHA)	2023 –
Member, American Society of Mechanical Engineers (ASME)	
Member, IEEE Engineering in Medicine and Biology Society (EMBS)	2020 –
Member, IEEE Biometrics Council	2018 –
Member, IEEE Sensors Council	2018 –
Member, IEEE	2018 – 2026
Member, IEEE Young Professionals	2018
Student Member, IEEE	– 2018
Student Member, Biomedical Engineering Society (BMES)	– 2018
Student Member, ASME	– 2017
Research Affairs Chair, BMES at UCF	May 2017 – Apr 2018
President, BMES at UCF	May 2016 – May 2017

7. Other Services

Treasurer, MAE Graduate Students Organization (MAE GSO)	Mar 2015 – Mar 2016

Member, Crush Chiari Awareness Club, Orlando, FL — Jan 2015 – Dec 2015
Mechanical engineering students Senator, Sharif Univ Students Union (Student Government) — Jan 2008 – Jan 2009
Officer, the Union of Mechanical Engineering Students at SUT — Jan 2008 – Jan 2009
First aid and rescue volunteer, Red Crescent Society of Iran — Oct 2005 – Jul 2006

Commitment to Diversity, Equity, and Inclusion

Diverse group: My mentees, in my current role as a faculty member, are/were from a broad spectrum of racial backgrounds (White, Black, and Asian) as well as nationalities (American, Bangladeshi, Iranian, Nepali, Korean, Chinese, Indian, Moroccan, and Turkish) and sexes (19/35 females).

Hosted lab tour for prospective graduate students from underrepresented minorities as a part of Mississippi State University GEM Grad (Getting Ready for Advanced Degrees) Lab event — Sep 16, 2022

Developed free online courses, seminars, and podcasts accessed by users around the world including low-income countries, Available at youtube.com/c/amirtahataebi/playlists — Sep 2021 –

Languages

Native Persian, English, Italian, Arabic (beginner)