Karla P. Mercado-Shekhar, Ph.D.

Assistant Professor, Biological Engineering
Indian Institute of Technology Gandhinagar
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Medical Ultrasound Engineering (MUSE) Laboratory: https://labs.iitgn.ac.in/muselaboratory/

Current Research Interests

Biomedical Ultrasound, Ultrasound-mediated Drug Delivery, Tissue Characterization, Elasticity imaging, Flow Imaging, Tissue Engineering

Academic Qualifications

2015	Ph.D. in Biomedical Engineering	University of Rochester, Rochester, NY
2010	M.S. in Biomedical Engineering	University of Rochester, Rochester, NY
2009	B.S. in Biomedical Engineering	Boston University, Boston, MA

Research and Professional Experience

2019 – present ***Assistant Professor***, Discipline of Biological Engineering, Indian Institute of Technology (IIT) Gandhinagar
Co-director of the Medical Ultrasound Engineering (MUSE) laboratory focused on biomedical ultrasound imaging and tissue characterization, along with teaching and mentoring undergraduate and postgraduate students.

2014–2019 ***Postdoctoral Research***
Research focused on developing shear wave ultrasound elasticity imaging for guiding stroke treatment, and acoustic droplet vaporization as a therapy for reperfusion injury.
Research Advisors: Christy K. Holland, Professor and Scientific Director of the Heart, Lung, and Vascular Institute, and Kevin J. Haworth, Assistant Professor, Department of Internal Medicine, University of Cincinnati, College of Medicine.

2010–2014 ***Doctoral Dissertation***
Title: Developing high-frequency quantitative ultrasound techniques to characterize three-dimensional engineered tissues
Available at http://hdl.handle.net/1802/29710
Research Advisor: Diane Dalecki, Ph.D., Distinguished Professor and Chair, Department of Biomedical Engineering, University of Rochester

2008-2009 ***Undergraduate Senior Capstone Research***
Project title: Developing a portable device for ultrasound imaging of the brain for use in forward battlefield areas

Research Advisor: Caleb Farny, Ph.D., Focused Ultrasound Laboratory, Brigham and Women's Hospital, Harvard Medical School

RESEARCH FUNDING

External:

- *Science and Engineering Research Board (SERB) Start-up Research Grant*, Rs. 29.6 Lakhs, 24th January 2022 – 23rd January 2024.
- *Gujarat State Biotechnology Mission (GSBTM) Research Support Scheme*, Rs. 26.8 Lakhs, 26th April 2021 – 25th April 2024.
- *Department of Science and Technology (DST) Biomedical Device and Technology Development Grant*, Rs. 40 Lakhs, 25th March 2021 – 24th September 2022.

Internal:

- *Internal Project Funding*, Rs. 32.7 Lakhs, Indian Institute of Technology (IIT) Gandhinagar, 17th June 2019 – 16th June 2022.
- *Research Equipment Grant*, Programmable research ultrasound system, Rs. 10 Lakhs, IIT Gandhinagar, awarded July 2019.
- *Research Equipment Grant*, Ultrasound Field Mapping and Calibration System, Rs. 33 Lakhs, IIT Gandhinagar, awarded November 2020.

Completed:

United States National Institutes of Health, National Institute of Neurological Disorders and Stroke (NINDS) Postdoctoral Research Supplement Grant, $173,534, 1st August 2016 – 30th September 2018.

PEER-REVIEWED PUBLICATIONS

1. A. Sharma, S.G. Marapureddy, A. Paul, S.R. Bisht, M. Kakkar, P. Thareja, and **K. P. Mercado-Shekhar**, 2023**.** Characterizing viscoelastic polyvinyl alcohol (PVA) phantoms for ultrasound elastography. Ultrasound in Medicine and Biology, 49(2):497-511.
2. A. Khan, X. Jiang, A. Kaushik, H. Nair, M. Edirisinghe, **K.P. Mercado-Shekhar**, H. Shekhar, and S. Dalvi, 2022. Combining ultrasound and capillary embedded T-junction microfluidic devices to scale up production of narrow sized microbubbles through acoustic fragmentation. Langmuir, 38(33):10288-10304.
3. S.R. Bisht, P. Mishra, D. Yadav, R. Rawal, and **K.P. Mercado-Shekhar**, 2021. Current and Emerging Diagnostic Techniques for Oral Cancer Screening and Diagnosis: A Review. Progress in Biomedical Engineering, 3(4), 042003.
4. R. Kleven, K. Karani, N. Hilvert, S. Ford, **K.P. Mercado-Shekhar,** J. Racadio, T. Abruzzo, and C.K. Holland, 2021. Accelerated Sonothrombolysis with Definity in a Xenographic Porcine Cerebral Thromboembolism Model. Scientific Reports, 11, 3987.

5. **K.P. Mercado-Shekhar,** H. Su, D.S. Kalaikadal, J.N. Lorenz, R.M. Manglik, C.K. Holland, A.N. Redington, and K.J. Haworth, 2019. Acoustic droplet vaporization-mediated scavenging of dissolved oxygen in physiological and blood-mimicking fluids. Ultrasonics Sonochemistry, 56, 114-124.
6. K. Nguyen, H. Pan, K. Haworth, E. Mahoney, **K.P. Mercado-Shekhar,** C. Lin, Z. Zhang, and Y. Park, 2019. Multiple exposure drug release from stable nanodroplets by high-intensity focused ultrasound for a potential degenerative disc disease treatment. Ultrasound in Medicine and Biology, 45, 160-169.
7. **K.P. Mercado-Shekhar,** R. Kleven, H. Aponte Rivera, R. Lewis, K.B. Karani, H.J. Vos, T. Abruzzo, K.J. Haworth, and C.K. Holland, 2018. Effect of clot stiffness on recombinant tissue plasminogen activator lytic susceptibility in vitro. Ultrasound in Medicine and Biology, 44, 2710-2727.
8. S. Abadi, K.J. Haworth, **K.P. Mercado-Shekhar,** and D. Dowling, 2018. Frequency-sum beamforming for passive cavitation imaging. The Journal Acoustical Society of America. 144, 198-209.
9. **K.P. Mercado**, K. Radhakrishnan, K. Stewart, L. Snider, D. Ryan, and K.J. Haworth, 2016. Size-isolation of ultrasound-mediated phase transition perfluorocarbon droplets using differential centrifugation**.** The Journal Acoustical Society of America. 139, EL142-EL148.
10. D. Dalecki, **K.P. Mercado,** and D.C. Hocking, 2016. Quantitative ultrasound for nondestructive characterization of engineered tissues and biomaterials. Annals of Biomedical Engineering, 44(3), 636-648.
11. **K.P. Mercado**, J. Langdon, S.A. McAleavey, D.C. Hocking, and D. Dalecki, 2015. Scholte wave generation during Single Tracking Location Shear Wave Elasticity Imaging of three-dimensional engineered tissues. The Journal Acoustical Society of America. 138, EL138-EL144.
12. **K.P. Mercado**, M. Helguera, D.C. Hocking, and D. Dalecki, 2015. Noninvasive quantitative imaging of collagen microstructure in three-dimensional hydrogels using high frequency quantitative ultrasound. Tissue Engineering Part C, Methods. 21, 671-682.
13. **K.P. Mercado**, M. Helguera, D.C. Hocking, and D. Dalecki, 2014. Estimating cell concentration in three-dimensional engineered tissues using high frequency quantitative ultrasound. Annals of Biomedical Engineering. 42, 1292-1304.

CONFERENCE PROCEEDINGS

1. N. Jahanpanah, S. Sharma, **K.P. Mercado-Shekhar,** H. Su, H. Palcich, A. Wanek, and K.J. Haworth, 2019. Hemolysis resulting from acoustic droplet vaporization and inertial cavitation. Proceedings of Meetings on Acoustics (POMA). 36, 020001.

2. K.J. Haworth, B. Goldstein, **K.P. Mercado-Shekhar,** C.K. Holland, and A. Redington, 2017. Dissolved oxygen scavenging by acoustic droplet vaporization using Intravascular Ultrasound. 2017 IEEE International Ultrasonics Symposium (IUS).

CONFERENCE ABSTRACTS

1. M. Kakkar, J.M. Patil, V. Trivedi, A. Yadav, S. Rao, V. Vazhayil, A. Mahadevan , H. Shekhar , and **K. P. Mercado-Shekhar**, 2023. Evaluating the feasibility of differentiating glioblastoma and normal brain tissue using H-scan imaging: An ex vivo study. The 184th Meeting of the Acoustical Society of America, Chicago, IL, U.S.A.

2. V. Raval, J. Karmakar, **K. P. Mercado-Shekhar**, H. Shekhar, and A. Singh, 2023. Quantitative perfusion analysis using contrast-enhanced ultrasound for benign and malignant choroidal tumor. Association for Research in Vision and Ophthalmology (ARVO) 2023, New Orleans, LA, U.S.A.

3. A. Sharma, S.G. Marapureddy, P. Thareja, and **K. P. Mercado-Shekhar**, 2021. Characterization of the viscoelastic properties of polyvinyl alcohol (PVA) phantoms for ultrasound elastography. International Symposium on Ultrasound Imaging and Tissue Characterization.

4. A. Yadav, V. Trivedi, and **K. P. Mercado-Shekhar**, 2021. Evaluation of H-scan imaging in phantoms and ex vivo tissue. 180th Meeting of the Acoustical Society of America – Acoustics in Focus.

5. A. Sharma, S.G. Marapureddy, S. R. Bisht, P. Thareja, and **K. P. Mercado-Shekhar**, 2021. Viscoelastic polyvinyl alcohol (PVA) phantoms for ultrasound elastography. 180th Meeting of the Acoustical Society of America – Acoustics in Focus.

6. A. Sharma, S.G. Marapureddy, P. Thareja, **K.P. Mercado-Shekhar,** 2021. Fabrication and characterization of tissue-mimicking viscoelastic polyvinyl alcohol (PVA) phantoms for ultrasound elastography. International Conference on Formulations in Food and Healthcare (ICFFH) 2021. Virtual conference organized by the University of Birmingham, UK.
7. H. Su, R.P. Benton, R. Srivastava, **K.P. Mercado-Shekhar,** B. Zhang, and K.J. Haworth, 2019. Impact of droplet polydispersity in ultrasound-mediated oxygen scavenging. 19th International Symposium of ISTU and 5th European Symposium of EUFUS. Barcelona, Spain.
8. N. Jahanpanah, S. Sharma, **K.P. Mercado-Shekhar,** H. Su, H. Palcich, A. Wanek, and K.J. Haworth, 2019. Ascertaining the relationship between acoustic droplet vaporization, inertial cavitation, and hemolysis. 177th Meeting of the Acoustical Society of America. Louisville, Kentucky, U.S.A.
9. H. Su, **K.P. Mercado-Shekhar,** R.P. Benton, S. Sharma, B. Zhang, B., and K.J. Haworth, 2018. Feeling Gassy? Modifying the oxygen partial pressure of a fluid using acoustic droplet vaporization and different droplet concentrations. 176th Meeting of the Acoustical Society of America and 2018 Acoustics Week. Victoria, Canada.
10. K. Nguyen, H.-Y. Pan, K.J. Haworth, E. Mahoney, **K.P. Mercado-Shekhar**, C.-Y. Lin, Z. Zhang, and Y. Park, 2018. Multiple Exposure Drug Release from Stable Nanodroplets by High-Intensity Focused Ultrasound for a Potential Degenerative Disc Disease Treatment. Biomedical Engineering Society (BMES) Annual Meeting. Atlanta, Georgia, U.S.A.
11. **K.P. Mercado-Shekhar,** R. Kleven, H. Aponte Rivera, R. Lewis, K.B. Karani, H. Vos, T.A. Abruzzo, K.J. Haworth, and C.K. Holland, 2018. Clot elasticity is inversely correlated with rt-PA thrombolytic susceptibility in vitro. 16th International Tissue Elasticity Conference. Avignon, France. (Peer-reviewed)
12. **K.P. Mercado-Shekhar,** R. Kleven, H. Aponte Rivera, R. Lewis, K.B. Karani, H. Vos, T.A. Abruzzo, K.J. Haworth, and C.K. Holland, 2018. Clot stiffness is inversely correlated with rt-PA

thrombolytic efficacy *in vitro*. 175th Meeting of the Acoustical Society of America. Minneapolis, Minnesota, U.S.A.

13. H. Su, B. Zhang, **K.P. Mercado-Shekhar,** S. Sharma, and K. Haworth, 2018. Modulating the partial pressure of oxygen using acoustic droplet vaporization. American Institute of Ultrasound in Medicine (AIUM) Convention. New York City, New York, U.S.A.
14. H. Su, **K.P. Mercado-Shekhar,** R. Srivastava, P. Arunkumar, B. Zhang, C.K. Holland, and K. Haworth, 2017. Tunable oxygen scavenging using acoustic droplet vaporization. 23rd European Symposium on Ultrasound Contrast Imaging. Rotterdam, Netherlands.
15. **K.P. Mercado,** D.S. Kalaikadal, J.N. Lorenz, R.M. Manglik, C.K. Holland, A.N. Redington, and K.J. Haworth, 2017. Effect of diluent fluid viscosity on acoustic droplet vaporization-mediated dissolved oxygen scavenging. Acoustics '17. Boston, Massachusetts, U.S.A.
16. S.H. Abadi, K.J. Haworth, **K.P. Mercado,** and D.R. Dowling, 2017. Using frequency-sum beamforming in passive cavitation imaging. Acoustics '17. Boston, Massachusetts, U.S.A.
17. E. Mahoney, H. Pan, H., A. Beiersdorfer, **K.P. Mercado,** K.J. Haworth, Y. Park, and C. Lin, 2017. Release of simvastatin to treat degenerative disc disease using nanodroplet targeted ultrasound. Orthopedic Research Society Annual Meeting. San Diego, California, U.S.A.
18. **K.P. Mercado,** K. Radhakrishnan, C. Holland, and K.J. Haworth, 2017. Reduction in Dissolved Oxygen Resulting from Acoustic Droplet Vaporization. 22nd European Symposium on Ultrasound Contrast Imaging. Rotterdam, Netherlands.
19. Y. Park, M. Taylor, Z. Zhang, C. Collins, H. Pan, E. Mahoney, **K.P. Mercado,** K.J. Haworth, and C. Lin, 2016. Stable nanodroplets for controlled drug release and monitoring using ultrasound. Biomedical Engineering Society (BMES) Annual Meeting. Minneapolis, Minnesota, U.S.A.
20. **K.P. Mercado,** L. Snider, K. Radhakrishnan, and K.J. Haworth, 2015. An empirical model of size-isolated ultrasound-triggered phase shift emulsions. 170th meeting of the Acoustical Society of America. Jacksonville, Florida, U.S.A.
21. S.H. Abadi, D.C. Leckta, K.P. **Mercado,** K.J. Haworth, and D.R. Dowling, 2015. Frequency-sum beamforming in a random scattering environment. 170th meeting of the Acoustical Society of America. Jacksonville, Florida, U.S.A.
22. J. Langdon, **K.P. Mercado**, D. Dalecki, and S. McAleavey, 2015. Compensating for scholte waves in Single Track Location Shear Wave Elasticity Imaging. 169th meeting of the Acoustical Society of America. Pittsburgh, Pennsylvania, U.S.A.
23. K.J. Haworth, K. Radhakrishnan, **K.P. Mercado**, K. Stewart, and C.K. Holland, 2015. Ultrasound-mediated scavenging of dissolved oxygen. Translational Science 2015. Washington D.C., U.S.A.
24. **K.P. Mercado,** M. Helguera, D.C. Hocking, and D. Dalecki, 2014. Characterizing collagen microstructure using high frequency ultrasound. 167th meeting of the Acoustical Society of America. Providence, Rhode Island, U.S.A.
25. **K.P. Mercado,** M. Helguera, D.C. Hocking, and D. Dalecki, 2012. Parametric imaging of three-dimensional engineered tissues using high frequency ultrasound. 164th meeting of the Acoustical Society of America. Kansas City, Missouri, U.S.A.

INTELLECTUAL PROPERTY

Kevin J. Haworth, Christy K. Holland, **Karla P. Mercado-Shekhar**, Andrew Redington, Bryan Goldstein, "Intravascular Ultrasound Device and Methods for Avoiding or Treating Reperfusion Injury," Priority Numbers: U.S. Utility Patent Application No. US2020/0107844A1 (9 April 2020) and International Application Number PCT/US2018/033298 (18 May 2018).

COMMUNITY CONTRIBUTIONS/OUTREACH ARTICLES

- Two articles published in IndiaBioscience, a premier outreach platform:
  - **K.P. Mercado-Shekhar**, 2021. Researchers post-lockdown: Finding the silver lining in a dark cloud. IndiaBioscience. https://indiabioscience.org/columns/stories-from-scientists/researchers-post-lockdown-finding-the-silver-lining-in-a-dark-cloud
  - **K.P. Mercado-Shekhar**, 2020. A whole new world: Finding an academic home in India. IndiaBioscience. https://indiabioscience.org/columns/journey-of-a-yi/a-whole-new-world-finding-an-academic-home-in-india

HONORS AND RECOGNITION

Fellowships/Scholarships:

2019-present	***Excellence in Research Fellowship***, Indian Institute of Technology Gandhinagar, India Fellowship awarded to faculty members of IIT Gandhinagar based on potential for excelling in research.
2015	*Therapeutic Ultrasound Winter School Attendance Scholarship* from the Focused Ultrasound Foundation, held at Les Houches, France.
2014	*ASA School Attendance Scholarship* from the Acoustical Society of America, held at Providence, Rhode Island, U.S.A.
2012	*Physical Acoustics Summer School (PASS) Attendance Scholarship* from the Acoustical Society of America and the National Center for Physical Acoustics, held at the University of Mississippi, Oxford, Mississippi, U.S.A.
2009–2014	***Provost's Doctoral Fellowship***, University of Rochester, Rochester, New York, U.S.A. 1 of 7 fellows selected from the entire university in 2009.

***Presentation Awards*:**

2015	*1st Place, Best Student Paper Award in Biomedical Acoustics,* second author of paper, 169th Meeting of the Acoustical Society of America.
2014	*2nd Place, Best Student Paper Award in Biomedical Acoustics*, 167th Meeting of the Acoustical Society of America.
2014	*3rd Place, Best Student Poster,* IEEE Rochester Section Joint Chapters Meeting, Rochester, New York, U.S.A.
2013	*Best Student Poster Award (Biomedical Engineering)*, University of Rochester Graduate Research Showcase.

2012 *3rd Place, Best Student Paper Award in Biomedical Acoustics*, 164th Meeting of the Acoustical Society of America.

Conference Travel Awards:

2018 *Young Investigator Travel Grant,* awarded by the Committee on Women in Acoustics to attend the 175th Meeting of the Acoustical Society of America (ASA), Minneapolis, Minnesota, U.S.A.

2017, 2018 *Early Career Travel Awards,* awarded by the ASA, to attend the Acoustics '17 meeting, Boston, Massachusetts, and the 175th meeting of the ASA, Minneapolis, Minnesota, U.S.A.

2014 *Student Travel Awards*, awarded by the Office of the Dean of Graduate Studies and the Graduate Student Association at the University of Rochester, to attend the 167th meeting of the ASA, Providence, Rhode Island, U.S.A.

2012, 2014 *Student Conference Transportation Subsidy* from the ASA.

2012 *Student Travel Award*, awarded by the Graduate Organizing Group, University of Rochester, to attend the 164th Meeting of the ASA, Kansas City, Missouri, U.S.A.

Undergraduate Awards:

2006–2008 *Dean's List*, College of Engineering, Boston University.

2008 *Excellence in Engineering Book Award*, College of Engineering, Boston University.

2005–2009 *Boston University Undergraduate Full Tuition Scholarship.*

2005 *Congressional Award for Leadership and Academic Excellence,* Guam, U.S.A.

TEACHING AND MENTORING EXPERIENCE

Faculty

- *Instructor*, Biostatistics (BE 614), IIT Gandhinagar
- *Instructor*, Introduction to Biomedical Engineering (BE 304), IIT Gandhinagar
- *Instructor*, Introduction to Writing (HS 191 and HS192), IIT Gandhinagar
- *Tutor*, Introduction to Life Sciences (BE 101), IIT Gandhinagar

***Research Mentorship*:**

Current Trainees:

Postdoctoral Fellows: Dr. Abhijit Paul, Dr. Nishita Mistry, Dr. Jayashree Karmakar (Biological Engineering)

Ph.D. Students: Sapna Bisht, Akash Chandra, and Jagruti Patil (Biological Engineering)

M.Tech. Students: Sakshi Oza, Mekdes Wubet, Bhanu Prasad Marri (Biological Engineering),

Graduated: M.Tech. Students: Hari Nair (2022, Biological Engineering), Vishwa Patel (2022, Biological Engineering), Ananya Sharma (2021, Biological Engineering), and Anushka Yadav (2021, Electrical Engineering)

SERVICE

2022	- *Member*, Technical Program Committee, IEEE International Ultrasonics Symposium, 3-year term. - *Member Secretary*, Institutional Ethics Committee, IIT Gandhinagar. - Founding Team Member of the Biomedical Imaging India Concourse (BIIC), a virtual platform for promotion of biomedical imaging research in India. Website link - *Guest speaker*, Online webinar on "Essentials of Scientific Writing", L.D. College of Engineering Department of Biomedical Engineering, held on 12th February 2022.
2021-present	- *Member*, Young Professionals Committee, *IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society (UFFC-S).* - *Member*, Editorial Advisory Board, *Ultrasound in Medicine and Biology.* - *Affiliated Member*, Institutional Ethics Committee, IIT Gandhinagar.
2021	- *Session chair*, Advances in Ultrasound Imaging Session, Acoustics in Focus (AiF) Virtual Conference, Acoustical Society of America, held on June 2021. - *Co-coordinator*, Post-graduate Student Orientation, IIT Gandhinagar, held on January 2021.
2020-present	*Member*, Young Professional and Student Activities Committee, *IEEE International Symposium for Biomedical Imaging (ISBI) 2022*, to be held in Kolkata, India in March 2022.
2019-present	- *Coordinator*, Certification in Scientific Writing, IIT Gandhinagar. - *Co-coordinator*, Center for Biomedical Engineering, IIT Gandhinagar. - *Member*, Writing Studio Advisory Committee, IIT Gandhinagar.
2019	- *External Committee Member*, Ph.D. Viva Voce examination of Mr. Sathiyamoorthy S, Dept. of Applied Mechanics, Indian Institute of Technology (IIT) Madras, 11th November 2019 (PhD supervisor: Prof. Arun Thitai) - *Panel member*, Debate on high impact publications, Post-graduate Students Foundation Program, IIT Gandhinagar. - *Evaluator*, INVENT @ IITGN, IIT Gandhinagar. - *Judge*, Summer Research Internship Program (SRIP) Poster Session, IIT Gandhinagar.
2017	*Outreach volunteer and speaker*, Acoustical Society of America Waves and Sound Workshop, hosted by the American Association of Physics Teachers, Cincinnati, Ohio, U.S.A.
2015–present	***Peer reviewer****: Scientific Reports (Nature Publishing Group), Annals of Biomedical Engineering, Ultrasound in Medicine and Biology, Physics in Medicine and Biology, Ultrasonic Imaging, IEEE Transactions in Ultrasonics, Ferroelectrics, and Frequency Control (T-UFFC), IEEE International Symposium on Biomedical Imaging (ISBI),

Acta Biomaterialia, The Journal of the Acoustical Society of America, Cancers, Sensors, Applied Sciences, Current Bionanotechnology, Diagnostics, Biomedical Physics & Engineering Express
* Verified peer review record: https://publons.com/author/1353448/karla-p-mercado-shekhar#profile

2017 *Judge*, Biomedical acoustics best student paper competition, Acoustics '17 at Boston, Massachusetts, U.S.A.

WORKSHOPS

2023 - Co-organized a 1-day workshop titled "Effective Scientific Communication" on March 2023. This workshop was funded by the *Science Engineering Research Board*. I also delivered 3 lectures.

2021 - Co-organized a 2-day workshop titled "Encapsulated Microbubbles for Ultrasound Imaging and Therapeutics: Synthesis, characterization, and applications" at IIT Gandhinagar in July 2021. This workshop was funded by the *Gujarat State Biotechnology Mission*. I also delivered 1 lecture and conducted 1 laboratory session.

- Co-organized a 7-day Karyashala workshop titled "Instrumentation and Signal Processing in Biomedical Imaging and Rehabilitation**"** at IIT Gandhinagar in October 2021. This workshop was funded by the *Science Engineering Research Board*. I also delivered 2 lectures.

CAREER DEVELOPMENT

2020 *Selected participant, 12th Young Investigator's Meeting (YIM),* held at Mahabalipuram, Tamil Nadu, India.

2018 *Teach Me To Teach workshop*, held by the Graduate Association for Teaching Enhancement at the University of Cincinnati, Cincinnati, Ohio, U.S.A.

2017 *National Institutes of Health (NIH) Career Development Award Seminar and Write Winning Grant Proposals Seminar*, held by Grant Writers' Seminars & Workshops, LLC, at the University of Cincinnati, Cincinnati, Ohio, U.S.A.

2015, 2016 *Selected participant, Young Investigator's Meeting (YIM),* held at the Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A. and the University of Chicago, Chicago, Illinois, U.S.A.

2014 *NextProf Future Faculty Workshop*, sponsored by the University of Michigan College of Engineering, held at the University of Michigan, Ann Arbor, Michigan, U.S.A.
* Full financial support was provided by the University of Michigan.

2011–2014 *Future Faculty Initiative, Graduate Writing Project Workshops, and the Leadership in Education Initiative* at the University of Rochester, Rochester, New York, U.S.A.

PROFESSIONAL MEMBERSHIPS

2019–present	*Member,* IEEE and IEEE Ultrasonics, Ferroelectrics, and Frequency Control (UFFC) Society.
2012–present	*Member,* Acoustical Society of America