

Dr. Yun Jing
Update date: Aug. 2018

1. Education background:

Ph.D., Architectural Acoustics, 2009, Rensselaer Polytechnic Institute, NY
M.S., Architectural Acoustics, 2007, Rensselaer Polytechnic Institute, NY
B.S., Electronic Science and Engineering, 2006, Nanjing University, China

2. Professional experience:

Associate Professor, Aug 2017-present, NC State University, Mechanical and Aerospace Engineering, NC
Assistant Professor, 2011-2017, NC State University, Mechanical and Aerospace Engineering, NC
Postdoctoral Fellow, Aug 2009-August 2011, Harvard Medical School, Brigham and Women's hospital, Department of Radiology, MA

3. Membership in professional organizations:

ASA, Member
ASME, Member
IEEE, Senior Member

4. Scholarly and professional honors:

- R. Bruce Lindsay Award, ASA, 2018
- Top 100 Science Spinoffs by spinoff.com, 2018
- ASA Early Career Travel Award, 2017
- “Tech Buzz/Hot labs”, Mechanical Engineering magazine, ASME, 2016
- NCSU Faculty Research and Professional Development Award, 2014
- New Investigator Award, NC Space Grant, 2014
- Young investigator travel grants, ASA conference, Baltimore, 2010
- Naval Research Office Traveling Grant, ASA conference, Paris, 2008
- 2nd prize award for best student paper, ASA conference, Paris, 2008
- Robert B. Newman Award, 2007
- Noise Young Presenter Award, ASA conference, New Orleans, 2007
- 2nd prize award for best student paper, ASA conference, Salt Lake City, 2007
- Young Scientist Conference Attendance Grants for ICA 2007
- HASS Fellowship, Rensselaer Polytechnic Institute, 2007-2009

5. Professional service:

- Special session co-chair for 2018 ASA meeting on “Novel Materials for Sound Absorption, Insulation, and Vibration Control”.
- Special session co-chair for 2017 ASA meeting on “Acoustic Metamaterials”.
- Special session co-chair for 2014 ASA meeting on “Brain imaging and therapy”.
- Special session chair for 2013 ASA meeting on “Ultrasound tomography”.
- Special session chair for 2013 ASA meeting on “Acoustic Metamaterials”.
- Session co-chair for 2012 ASA meeting on “Therapeutic ultrasound”.
- Session co-chair for 2012 Internoise on “Computational techniques in building and room acoustics”.
- Chair, Acoustical Society of America NC Chapter, 2017-present
- Associate Editor, Journal of Acoustical Society of America, 2018-present
- Reviewer for Nature Materials, Nature Physics, Nature Communications, Physical review letters, Advanced Functional Materials, Physical review Applied, Physical review B, Physical review Materials, Journal of Acoustical Society of America, Journal of Sound and Vibration, Acta Acustica united with

Acustica, Advances in acoustics and vibration, Journal of Physics D: Applied Physics, IEEE Transactions on UFFC, Applied Physics letters, Journal of Applied Physics, Applied Physics A, Medical Physics, Ultrasonics, Physics in Medicine and Biology, Physics letters A, Scientific Report, New Journal of Physics, Advanced Materials Technologies, and Applied Physics Express.

- Elected Member of Technical Committee of IEEE Ultrasonics (TPC 3)
- NSF CMMI panel reviewer and Focused Ultrasound Surgery Foundation *ad hoc* reviewer
- Graduated 10 MS students and 4 PhD students; 4 PhD students are in progress.

6. Journal Publications (underline: student under advisory of Dr. Yun Jing, *:corresponding author)

Google citation webpage: <https://scholar.google.com/citations?hl=en&user=nkb3d8UAAAAJ>

1. Weiwei Zhu, Xinsheng Fang, Dongting Li, Yong Sun, Yong Li*, Yun Jing*, and Hong Chen*, Simultaneous observation of topological edge state and exceptional point in an open and non-Hermitian acoustic system, *Physical Review Letters*, accepted.
2. Badreddine Assouar*, Bin Liang*, Ying Wu, Yong Li, Jianchun Cheng, Yun Jing*, Acoustic Metasurfaces, *Nature Reviews Materials*, accepted.
3. Gang Yong Song, Cheng Zhang, Qiang Cheng*, Yun Jing*, Chengwei Qiu, and Tiejun Cui*, Transparent coupled membrane metamaterials with simultaneous microwave absorption and sound reduction, *Optics Express*, accepted.
4. Gangyong Song, Qiang Cheng*, Tiejun Cui*, and Yun Jing*, Acoustic planar surface retroreflector, *Physical Review Materials*, (2), 065201, 2018.
5. Liting Wu, Gangyong Song, Wenkang Cao, Qiang Cheng*, Tiejun Cui*, and Yun Jing*, Generation of multiband spoof surface acoustic waves via high-order modes, *Physical Review B* 97 (21), 214305, 2018.
6. Kaustav Mohanty, Siddharth Mahajan, Gianmarco Pinton, Marie Muller, and Yun Jing*, Observation of self-bending and focused ultrasound beams in the MHz range, *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, 65, 1460-1467, 2018.
7. Juanjuan Gu and Yun Jing*, Numerical Modeling of Ultrasound Propagation in Weakly Heterogeneous Media Using a Mixed Domain Method, *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, 65, 1258-1267, 2018.
8. Nikhil Gerard, Yong Li*, and Yun Jing*, Investigation of acoustic metasurfaces with constituent material properties considered, invited paper, special issue on Acoustic Metamaterials and Metasurfaces, *Journal of Applied Physics*, 123, 124905, 2018 (**Featured article & AIP Scilight**)
9. Chen Shen*, Yangbo Xie, Junfei Li, Steven Cummer, and Yun Jing*, Acoustic Metacages for Sound Shielding with Steady Air Flow, invited paper, special issue on Acoustic Metamaterials and Metasurfaces, 123, 124501, *Journal of Applied Physics*, 2018.
10. Yuanchen Deng, Hao Ge, Minghui Lu*, and Yun Jing*, Observation of zone folding induced acoustic topological insulators and the role of spin-mixing defects, *Physical Review B*, 96, 184305, 2017. (**Selected for PRB Kaleidoscope**)
11. Dingjie Suo, Bala Govind, Shengqi Zhang, and Yun Jing*, Numerical investigation of the inertial cavitation threshold under multi-frequency ultrasound, *Ultrasonics Sonochemistry*, 41, 2018, Pages 419-426.
12. Tai-yun Huang and Yun Jing*, Investigation of the effective density of arbitrarily shaped plate-type acoustic metamaterials without mass attached, *Wave Motion*, 74, Pages 124-133, 2017.

13. Yong Li, Chen Shen, Yangbo Xie, Junfei Li, Wenqi Wang, Steven A. Cummer*, and Yun Jing*, Tunable asymmetric transmission via lossy acoustic metasurfaces, *Phys. Rev. Lett.* 119, 035501, 2017.
14. Yifan Zhu, Xudong Fan, Bin Liang*, Jianchun Cheng*, and Yun Jing*, Ultra-thin acoustic metasurface-based Schroeder diffuser, *Physical Review X*, 7, 021034 (2017). **Highlighted on Nature Reviews Materials**
15. Dingjie Suo, Zhiyang Jin, Xiaoning Jiang, Paul A. Dayton, and Yun Jing*, Microbubble mediated dual-frequency high intensity focused ultrasound thrombolysis: an In vitro study, *Applied Physics Letters*, 110, 023703, 2017. **Editors' pick**
16. Jin Di, Jicheng Yu, Qun Wang, Shanshan Yao, Dingjie Suo, Yanqi Ye, Matthew Pless, Yong Zhu, Yun Jing* and Zhen Gu*, Ultrasound-Triggered Noninvasive Regulation of Blood Glucose Levels Using Microgels Integrated with Insulin Nanocapsules, *Nano Research*, accepted 2017.
17. Jun Zhang, Yi Zhang, Juan-juan Gu, Yun Jing, Rui-min Chen, Mark S. Humayun, K. Kirk Shung, Andrew C. Weitz*, and Qifa Zhou*, Transducer Selection for In Vivo Ultrasonic Retinal Stimulation: A Porcine Eye Model Study, *Journal of Ophthalmology and Ophthalmic Surgery*, Volume 2 (1): 100112, 2016.
18. Chen Shen and Yun Jing*, Loss-induced Enhanced Transmission in Anisotropic Density-near-zero Acoustic Metamaterials, *Scientific Reports*, 2016; 6: 37918.
19. Yangbo Xie , Chen Shen , wenqi wang , Junfei Li , Dingjie Suo , Bogdan-Ioan Popa , Yun Jing* and Steven A. Cummer*, Acoustic Holographic Rendering with Two-dimensional Metamaterial-based Passive Phased Array, *Scientific Reports*, 35437 (2016).
20. Tai-yun Huang, Chen Shen and Yun Jing*, On the evaluation of effective density for plate- and membrane-type acoustic metamaterials without mass attached, *J. Acoust. Soc. Am.*, 2016 Aug; 140(2):908.
21. C. Shen, Y. Xie, J. Li, SA Cummer, Y. Jing*, asymmetric acoustic transmission through near-zero-index and gradient-index metaurfaces, *Applied Physics Letters* 108 (22), 223502.
22. Y. Yang, B. Li, Z. Chen, N. Sui, Z. Chen, MU Saeed, Y. Li, R. Fu, C. Wu, Y. Jing, Acoustic properties of glass fiber assembly-filled honeycomb sandwich, *Composites Part B: Engineering* 96, 281-286.
23. Tai-yun Huang, Chen Shen and Yun Jing*, Membrane- and plate-type acoustic metamaterials, *J. Acoust. Soc. Am.*, accepted, 2016.
24. Yong Yang, Binbin Li, Zhaofeng Chen, Ni Sui, Zhou Chen, Yufang Li, Renli Fu, and Yun Jing*, Sound insulation of multi-layer glass fiber felts: Role of morphology, *Textile Research Journal* , 0040517516629142, 2016 .
25. Chen Shen, Yangbo Xie, Ni Sui, Wenqi Wang, Steven Cummer, and Yun Jing*, Broadband acoustic hyperbolic metamaterial, *Physical Review Letters*, **115**, 254301, 2015 . **Editors' Suggestion.**
26. Dingjie Suo, Sijia Guo, Weili Lin, Xiaoning Jiang, and Yun Jing*, Thrombolysis using multi-frequency high intensity focused ultrasound at MHz range: an in vitro study, *Physics in Medicine and Biology*, 60 (18), 7403, 2015.
27. Juanjuan Gu and Yun Jing*, Modeling of wave propagation for medical ultrasound: a review, *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, 62, 1979-1992, 2015.
28. Ni Sui, Xiang Yan, Tai-yun Huang, Jun Xu, Fuh-Gwo Yuan*, and Yun Jing*, Lightweight yet sound-proof honeycomb acoustic metamaterials, *Applied Physics Letters*, 171905 (2015) **Most read the month of May. Featured by Wall Street Journal, Scientific American, WRAL, Aviation International News, Quartz, Gizmag, Engadget, R&D Magazine, Daily Mail, Business Standard, and Phys. Org.**

29. Chen Shen, Jun Xu*, Nicholas Fang and Yun Jing*, Anisotropic complementary acoustic metamaterial for cancelling out aberrating layers, *Physical Review X*, **4**, 041033 (2014). **Featured by Science Daily and Phys.org**
30. Chen Shen and Yun Jing*, Side Branch-based Acoustic Metamaterials with a Broad-band Negative Bulk Modulus, *Applied Physics A*, 117 (4), 1885-1891 (2014).
31. Yun Jing*, Molei Tao and Jonathan Cannata, An Improved Wave-Vector Frequency-Domain Method for Nonlinear Wave Modeling, *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control*, vol. 61, pp.515-524 (2014).
32. Meng Wang, Wenqiao Yuan*, Xiaoning Jiang, Yun Jing and Zhuochen Wang, Disruption of microalgal cells using high-frequency focused ultrasound, *Bioresouce technology*, vol. 153, pp.315-321 (2014).
33. Jin Di, Jennifer Price, Xiaoning Jiang, Yun Jing*, Zhen Gu*, Ultrasound-Triggered Regulation of Blood Glucose Levels Using Injectable Nano-Network, *Advanced healthcare material*, vol. 3, issue 6, pp. 811-816 (2014). **(Selected as the front cover. Featured by Science Daily, Kurzweilai, The Engineer.)**
34. Tianren Wang and Yun Jing*, Transcranial ultrasound imaging with speed of sound based phase correction: A numerical study, *Physics in Medicine and Biology*, vol 58, pp. 6663-6681 (2013).
35. Sijia Guo, Yun Jing and X.N. Jiang*, Tissue ablation using multi-frequency high-intensity focused ultrasound, *IEEE Transaction on Ultrasonics, Ferroelectrics, and Frequency Control*, 60, pp. 1699-1707 (2013).
36. Xiang, N.*, Escolano, J. Navarro, J. and Yun Jing, Investigation on the effect of aperture sizes and receiver positions in coupled rooms, *J. Acoust. Soc. Am.*, 133, pp. 3975-3985 (2013).
37. Yun Jing*, Jonathan Cannata, and Tianren Wang, Experimental verification of time-domain nonlinear acoustical holography, *J. Acoust. Soc. Am.*, 133, pp. 2533-2540 (2013).
38. Yun Jing*, Jun Xu, and Nickolas Fang, Numerical study of a near-zero-index acoustic metamaterials, *Physics Letters A*, 376, pp. 2834-2837, 2012.
39. Yun Jing*, Tianren Wang, and G.T. Clement, A k-space method for moderately nonlinear wave propagation, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* , 2012; 59, pp. 1664-1673.
40. Yun Jing*, On the use of an absorption layer for the angular spectrum approach, *J. Acoust. Soc. Am.*, 131, 2012, pp. 999-1002.
41. Yun Jing*, F. Can Meral and Greg Clement, Time-reversal transcranial ultrasound beam focusing using a k-space method, *Physics in Medicine and Biology*, 57, 2012, pp.901-917.
42. Chang-sheng Mei, Lawrence P. Panych, Jing Yuan, Nathan J. McDannold, Lisa H. Treat, Yun Jing, Bruno Madore*, Combining two-dimensional spatially selective RF excitation, parallel imaging, and UNFOLD for accelerated MR thermometry imaging, *Magnetic Resonance in Medicine*, 66, 2011, pp. 112-122.
43. Yun Jing* and Greg Clement, On the use of Gegenbauer reconstructions for shock wave propagation modeling, *J. Acoust. Soc. Am.*, 130, 2011, pp. 1115-1124.
44. Yun Jing*, Du Shen and Greg Clement, Verification of the Westervelt equation for focused transducers, *IEEE Transactions on UFFC*, 58, 2011, pp. 1097-1101.
45. Yun Jing and Greg Clement*, Evaluation of a wave vector frequency domain method for nonlinear wave propagation, *J. Acoust. Soc. Am.*, 129, 2011, pp. 32-46.

46. Yun Jing* and Edward Larsen and Ning Xiang, One-dimensional transport equation models for sound energy propagation in long spaces: Theory, *J. Acoust. Soc. Am.*, 127, 2010, pp. 2312-2322.
47. Yun Jing* and Ning Xiang, One-dimensional transport equation models for sound energy propagation in long spaces: simulations and experimental results, *J. Acoust. Soc. Am.*, 127, 2010, pp. 2323-2331.
48. Ning Xiang*, Yun Jing and Alex Bockman, Investigation of acoustically coupled enclosures using a diffusion equation model, *J. Acoust. Soc. Am.*, 126, 2009, pp. 1187-1198.
49. Yun Jing and Ning Xiang*, Visualization of sound energy across coupled rooms using a diffusion equation model, *J. Acoust. Soc. Am. Express Letters*, 124, 2008, pp. EL360-365.
50. Yun Jing and Ning Xiang*, On boundary conditions for the diffusion equation in room-acoustic prediction: Theory, simulations, and experiments, *J. Acoust. Soc. Am.*, 123, 2008, pp. 145-153.
51. Yun Jing and Ning Xiang*, A modified diffusion equation for room-acoustic prediction (L), *J. Acoust. Soc. Am.*, 121, 2007, pp. 3284-3287.
52. Xiao Chen, Zhizhuai Zhu, Yun Jing, Shuai Dong, Jun-Ming Liu* Magnetization oscillation in a nanomagnet driven by a self-controlled spin-polarized current: nonlinear stability analysis, *Physical Review B* 76 (5), 054414, 2007.
53. Yun Jing*, Jin Chen, Xiao Chen, and Xun Gong, Frequency shift of thickness-shear vibrations of AT-cut Quartz Resonators due to a liquid layer with the electrode stiffness considered, *IEEE Transaction on Ultrasonics, Ferroelectrics, and Frequency control*, 2007, pp. 1290-1292.
54. Yun Jing*, Jin Chen, and Xun Gong, Stress-Induced Frequency Shifts in Rotated Y-cut Langasite Resonators with Electrodes Considered, *IEEE Transaction on Ultrasonics, Ferroelectrics, and Frequency Control*, 2007, pp. 906-909.
55. Yun Jing, Xun Gong*, and et. al., Influence of Electrodes on Force Frequency Characteristics of Rotated Y-cut Quartz Resonators, *Japanese Journal of Applied Physics*, 2006, pp. 9167-9171.

7. Invited Talk/Seminars

1. Numerical modeling of ultrasound propagation in heterogeneous media using a mixed domain method, ASA meeting, Victoria, Canada, 2018.
2. Noise reduction using metamaterials and metasurfaces, ASA meeting, Victoria, Canada, 2018.
3. Acoustic wave propagation: numerical modeling and its control via acoustic metamaterial/metasurface, invited seminar, University of Texas at Austin, 2018.
4. Acoustic Metasurfaces, Huazhong University of Science and Technology, invited seminar, School of Optical and Electronic Information, Wuhan, China, 2018.
5. Modeling of acoustic wave propagation, invited seminar, Department of Earth and Space Sciences, Southern University of Science and Technology, China, 2018.
6. Acoustic wave propagation: numerical modeling and its control via acoustic metamaterial/metasurface, invited seminar, College of Aerospace Engineering, Chongqing University, China, 2018.
7. Acoustic wave propagation: numerical modeling and its control via acoustic metamaterial/metasurface, invited seminar, Institut Langevin, Paris, France, 2018
8. Asymmetrical sound transmission through acoustic metasurfaces, IUTAM Symposium "Acoustic/Elastic Metamaterials, Their Design and Application", Beijing, China, 2018.

9. Asymmetrical sound transmission through acoustic metasurfaces, META 2018, Marseille, France.
10. High intensity focused ultrasound based thrombolysis using multiple frequency excitation, International symposium of frontier acoustics, Shenzhen, China, 2017.
11. Acoustic metamaterials and metasurfaces, invited seminar, Southeast University, China, 2017.
12. Ultrathin Acoustic Metasurface-Based Schroeder Diffuser, META 2017, Seoul, Korea, 2017.
13. Asymmetric sound transmission, invited seminar, School of Physics, Tongji University, 2017.
14. Acoustic metamaterials and metasurfaces, invited seminar, Material Science Department at Johns Hopkins Univ., 2016.
15. Membrane-type acoustic metamaterials, invited seminar, School of Physics, Nanjing University, 2015
16. Acoustic metamaterials for cancelling out bones, Brain workshop, Focused ultrasound surgery foundation, Charlottesville, Virginia, 2015
17. Ultrasound-Triggered Regulation of Blood Glucose Levels Using Injectable Nano-Network, invited talk, Wuhan University International Forum for Interdisciplinary Sciences and Engineering, Wuhan, China, 2014
18. On the use of fast marching methods for transcranial beam focusing, ASA meeting, Providence, Rhode Island, 2014
19. Transient nonlinear acoustical holography, ASA meeting, San Francisco, CA, 2013
20. Medical application of nonlinear wave vector frequency domain modeling, ASA meeting, Kansas City, MO, 2012.
21. Room acoustics modeling using the diffusion and transport equation models, *Proc. The 9th International Symposium on Modern Acoustics*, Nanjing, China.
22. Visualization of sound energy flows across coupled-volume system, Proc. InterNoise, Ottawa, Canada.