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Education

Duke University, School of Medicine, Durham, NC
M.D., (2000 - 2002, 2006 - 2007)

Duke University, Pratt School of Engineering, Durham, NC
Ph.D., Biomedical Engineering (2002 - 2005)
Advisor: Dr. Kathryn Nightingale, Ph.D.

“Imaging the mechanical properties of tissue with ultrasound: An investigation of the response of soft tissue to acoustic radiation force”

Duke University, Pratt School of Engineering, Durham, NC
B.S.E., Biomedical and Electrical Engineering (GPA 3.9/4.0, Rank 17/203, 1996 - 2000)

Research Experience

- 2008 - Present **Assistant Research Professor**, Department of Anesthesiology,
Duke University Medical Center, NC
- 2007 - Present **Assistant Research Professor**, Department of Biomedical Engineering,
Duke University, NC
- 2005 - 2007 **Research Associate**, Department of Biomedical Engineering,
Duke University, NC
- 2002 - 2005 **Research Assistant**, Department of Biomedical Engineering,
Duke University, NC
- 1999 - 2000 **NSF/ERC Undergraduate Fellow**, Department of Biomedical Engineering,
Duke University, NC
- 1998 **Research Assistant**, Department of Electrical Engineering,
Princeton University, NJ
- 1997 **Research Assistant**, Brookhaven National Laboratory,
SUNY Stony Brook, NY
- 1995 - 1997 **Research Assistant**, Garnett McKeen Labs, Long Island High Technology
Incubator, SUNY Stony Brook, NY

Awards and Honors

Featured in Anesthesiology News 37(1): "Injection Visualization Improved with Ultrasound Algorithm" (2011)

Featured in DukeMed Alumni News "The Translators" (Fall 2008)

James B. Duke Graduate Fellowship (2002-2005)

IEEE-UFFC Student Travel Award (2004)

Magna Cum Laude with Distinction (2000)

Helmholtz Undergraduate Research Award (2000)

Howard G. Clark Award, Department of Biomedical Engineering (2000)

Finalist in UF National BMES Competition (1999)

Undergraduate Research Support Grant (1999)

Phi Eta Sigma National Honor Society (1999)

Golden Key National Honor Society (1998)

Tau Beta Pi National Engineering Society (1996)

Professional Societies

Institute of Electrical and Electronics Engineers (1998 - Present)

Biomedical Engineering Society (2007 - Present)

American Institute of Ultrasound in Medicine (2007 - Present)

International Anesthesia Research Society (2008 - Present)

American Medical Association (2004 - 2007)

Teaching and Student Advising Experience

- 2010-2012 **Biomedical Electronic Measurements II** (BME154)
Professor, Department of Biomedical Engineering
- 2011-2012 **Independent Study** (BME191/192)
Undergraduate, Taylor Jordan
- 2011-2012 **Independent Study** (BME191/192)
Undergraduate, Sarah Boltuck
- 2011 **Independent Study** (BME365)
Masters, Andrew Homyk
- 2010 **Independent Study** (BME399)
Graduate, Manu Lakshmanan
- 2010 **Independent Study** (BME191)
Undergraduate, Samantha Lipman
- 2009 **Independent Study** (BME191)
Undergraduate, Samanthe Lyons
- 2009 **Biomedical Electronic Measurements I** (BME153)
Professor, Department of Biomedical Engineering
- 2009 **Design in Biotechnology** (BME227)
Project Mentor, Department of Biomedical Engineering
- 2005, 2007 **Imaging the Mechanical Properties of Tissue** (BME365)
Teaching Assistant, Department of Biomedical Engineering
- 2002 - 2003 **Devices for People with Disabilities** (BME260)
Teaching Assistant, Department of Biomedical Engineering
- 1998 **Introduction to Electronic Devices** (EE62)
Teaching Assistant, Department of Electrical Engineering
- 1997 - 2000 **Introductory Physics and Circuit Analysis** (PHY51/52, EE61)
Tutor, Departments of Physics and Electrical Engineering

Students Supervised

Undergraduate Students

2011-2012 Taylor Jordan
2011-2012 Sarah Boltuck
2009-2011 Pamela Anderson
2009-2011 Samantha Lipman
2009 Samanthe Lyons

Masters Thesis Committees

2011 Andy Homyk, M.S. Candidate (BME) [Chair]

Doctoral Thesis Committees

2010 Richard Bouchard, Ph.D. (BME)
2010 Christina Li Hsu, Ph.D. (BME)
2011 Douglas Dumont, Ph.D. (BME)
(2012) Stephanie Eyerly, Ph.D. Candidate (BME)
(2012) Veronica Rotemberg, Ph.D. Candidate (BME)

University and Professional Service

- Associate Editor, Ultrasound in Medicine and Biology (2012 - present)
- Advisory Editorial Board, Ultrasound in Medicine and Biology (2011-2012)
- Associate Editor, Medical Physics (2009 - present)
- Chair, IEEE Ultrasonics Symposium (2007, 2009, 2011)
- Scientific Abstract Reviewer, Ultrasonic Measurement and Imaging of Tissue Elasticity Conference (2009 - 2011)
- Consultant for Cerene Biomedics (2009 - 2011)
- Institutional Review Board (IRB) Member, Duke University Medical Center (2002 - 2007)
- Medical Scientist Training Program Steering Committee (2006 - present)
- Chair, Medical Scientist Training Program Mentoring Committee (2008 - present)
- Faculty Mentor, Medical Scientist Training Program Annual Retreat (2010)
- Chair, Ultrasonic Measurement and Imaging of Tissue Elasticity Conference (2007, 2008, 2010, 2011)
- Scientific Session Moderator, AIUM Annual Convention (2008 & 2009)

- Reviewer for Journal of Biomechanics, Annals of Biomedical Engineering, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, Computer Methods and Programs in Biomedicine, Physics in Medicine and Biology, Medicinal Research Reviews, BioMed Central, Ultrasound in Medicine and Biology, Ultrasonic Imaging, Ultrasonics, Physiological Measurement, Transactions on Medical Imaging, Transactions on Biomedical Engineering, Measurement Science and Technology, Journal of Gastrointestinal and Liver Diseases, Current Medical Imaging Reviews, Medical Ultrasonography, Biomedical Engineering Online, European Urology
- Grant reviewer for Technology Foundation STW (Netherlands), Great Ormond Street Hospital
- Duke University Alumni Admissions Advisory Committee (2008 - 2011)
- Duke Medicine Young Alumni Committee (2011 - present)

Invited Lectures

1. Interdisciplinary Inverse Problems (IPRPI, Troy, NY, 2004): “Imaging tissue mechanical properties using impulsive acoustic radiation force”
2. Carolina Cadaver Course (Dept. of Anesthesiology, Durham, NC, 2008), “Cutting Edge of Ultrasound Research”
3. Radiological Society of North American (RSNA 2007, Chicago, IL), 93rd Scientific Assembly and Annual Meeting Refresher Course: “Ultrasound Beamforming and Image Formation”
4. IEEE Ultrasonics Symposium (New York City, NY, 2007), Elasticity Imaging: Dynamic Approaches, short course tutorial
5. IEEE Ultrasonics Symposium (Rome, Italy, 2009), Elasticity Imaging: Dynamic Approaches, short course tutorial
6. American Institute of Ultrasound in Medicine (AIUM 2008, San Diego, CA), “Shear wave analysis: clinical implications” (with K. Nightingale)
7. Medical Scientist Training Program Annual Retreat Faculty Speaker, “Acoustic Radiation Force Impulse Imaging and Novel Ultrasonic Imaging Modalities,” 2010.
8. Radiological Society of North America (RSNA 2010, Chicago, IL), 96th Scientific Assembly and Annual Meeting Hot Topic: “Ultrasound Elastography: Is it in Our Future?”
9. Applied Inverse Problems Conference (AIPC 2011, College Station, TX): “Quantitative Shear Wave Elasticity Imaging Techniques to Noninvasively Characterize Soft Tissue Stiffness,” 2011.

10. 36th International Symposium on Ultrasonic Imaging and Tissue Characterization (Arlington, VA): Shear Wave Imaging Special Session Organizer, 2011.
11. 36th International Symposium on Ultrasonic Imaging and Tissue Characterization (Arlington, VA): “Using quantitative shear wave elasticity imaging techniques to noninvasively characterize liver fibrosis,” 2011.
12. Biomedical Engineering Seminar (Duke University, Durham, NC, 2011), “Clinical Translation of Biomedical Engineering Research”
13. IEEE Ultrasonics Symposium (Orlando, FL, 2011), Elasticity Imaging: Dynamic Approaches, short course tutorial
14. 10th International Tissue Elasticity Conference Tutorial (Arlington, TX): “Biological Foundations and Clinical Applications of Soft Tissue Elasticity Imaging,” 2011.
15. Radiological Society of North America (RSNA 2011, Chicago, IL), 97th Scientific Assembly and Annual Meeting Hot Topic: “MR Elastography and Quantitative US Elastography: Emerging Applications”

Patents

1. Nightingale KR, Trahey GE, Nightingale RW, **Palmeri ML**. “Method and apparatus for the identification and characterization of variations in tissue stiffness,” No. 6,371,912; 2002.
2. Nightingale KR, Trahey GE, Nightingale RW, **Palmeri ML**. “Method and apparatus for the identification and characterization of regions of altered stiffness,” No. 6,951,544; 2005.
3. **Palmeri ML**, Nightingale KR, Trahey GE, Frinkley KD. “Methods, systems and computer products for ultrasound shear wave velocity estimation and shear modulus reconstruction,” accepted, 2007.
4. **Palmeri ML**, MacLeod DB, Grant SA, Dahl JJ, Nightingale KR. “Ultrasound Methods, Systems and Computer Program Products for Imaging Fluids,” in review, 2009.
5. **Palmeri ML**, Rotemberg VM, Rosenzweig SJ, Nightingale KR. “Visualizing medical hardware using acoustic radiation force-based imaging,” in review, 2009.
6. Johnson GA, Howles-Banerji G, Bing K, Nightingale K, **Palmeri M**. “Method and Apparatus for Delivery of Agents Across the Blood Brain Barrier,” in review, 2010.
7. **Palmeri ML**, Lipman SL, Nightingale KR. “Acoustic Radiation Force Methods to Ultrasonically Map Injected Fluids,” in review, 2011.

Publications

1. Nightingale KR, Nightingale RW, **Palmeri ML**, Trahey GE. "A finite element model of remote palpation of breast lesions using ultrasonic acoustic radiation force: factors affecting tissue displacement," *Ultrasonic Imaging*, 22(1): 35-54, 2000.
2. Nightingale KR, **Palmeri ML**, Nightingale RW, Trahey GE. "On the feasibility of remote palpation using acoustic radiation force," *JASA*, 110(1): 625-634, 2001.
3. **Palmeri ML**, Nightingale KR. "On the thermal effects associated with acoustic radiation force impulse imaging," *IEEE UFFC*, 51(5): 551-565, 2004.
4. **Palmeri ML**, Frinkley KD, Nightingale KR. "Experimental Studies of the Thermal Effects Associated with Radiation Force Imaging of Soft Tissue," *Ultrasonic Imaging*, 26: 100-114, 2004.
5. Trahey GE, **Palmeri ML**, Bentley RC, Nightingale KR. "Acoustic Radiation Force Impulse Imaging of the Mechanical Properties of Arteries: *In vivo* and *Ex vivo* Results," *UMB*, 30(9): 1163-1171, 2004.
6. Gentry KL, **Palmeri ML**, Sachedina N, Smith SW. "Finite Element Analysis of Temperature Rise and Lesion Formation from Catheter Ultrasound Ablation Transducers," *IEEE UFFC*, 52(10): 1713-1721, 2005.
7. Fahey BJ, Nightingale KR, **Palmeri ML**, McAleavey SA, Wolf P, Trahey GE. "Acoustic radiation force impulse imaging of myocardial radiofrequency ablation: initial in vivo results," *IEEE UFFC*, 52(4): 631-641, 2005.
8. Fahey BJ, Nightingale KR, Nelson RC, **Palmeri ML**, Trahey GE. "Acoustic Radiation Force Impulse Imaging of the Abdomen: Demonstration of Feasibility and Utility," *UMB*, 31(9): 1185-1198, 2005.
9. **Palmeri ML**, Sharma AC, Bouchard RR, Nightingale RW, Nightingale KR. "A Finite-Element Method Model of Soft Tissue Response to Impulsive Acoustic Radiation Force," *IEEE UFFC*, 52(10): 1699-1712, 2005. [PMCID: 16382621]
10. **Palmeri ML**, Frinkley KD, Zhai L, Bentley RC, Ludwig K, Gottfried M, Nightingale KR. "Acoustic Radiation Force Impulse Imaging of the Gastrointestinal Tract," *Ultrasonic Imaging*, 27: 75-88, 2005.
11. Nightingale KR, **Palmeri ML**, Trahey GE. "Analysis of Factors Affecting Image Quality in Radiation Force Generated Images," *UMB*, 32(1): 61-72, 2006.
12. **Palmeri ML**, Frinkley KD, Oldenburg KG, Trahey GE, Nightingale KR. "Characterizing Acoustic Attenuation of Homogeneous Media Using Focused Impulsive Acoustic Radiation Force," *Ultrasonic Imaging*, 28: 114-128, 2006.
13. **Palmeri ML**, McAleavey SA, Fong KL, Trahey GE, Nightingale KR. "Dynamic Mechanical Response of Elastic Spherical Inclusions to Excitation by Impulsive Acoustic Radiation Force," *IEEE UFFC*, 53(11): 2065-2079, 2006.

14. **Palmeri ML**, McAleavey SA, Trahey GE, Nightingale KR. "Ultrasonic Tracking of Acoustic Radiation Force-Induced Displacements in Homogeneous Media," *IEEE UFFC*, 53(7): 1300-1313, 2006.
15. Dahl JJ, Pinton GF, **Palmeri ML**, Agrawal V, Nightingale KR, Trahey GE. "A Parallel Tracking Method for Acoustic Radiation Force Impulse Imaging," *IEEE UFFC*, 54(2): 301-312, 2006.
16. Fahey BJ, **Palmeri ML**, Trahey GE. "Frame Rate Considerations for Real-Time Abdominal Acoustic Radiation Force Impulse Imaging," *Ultrasonic Imaging*, 28: 193-210, 2006.
17. Fahey BJ, **Palmeri ML**, Trahey GE. "The Impact of Physiological Motion on Tissue Tracking During Radiation Force Imaging," *UMB*, 33(7): 1149-1166, 2007.
18. **Palmeri ML**, Wang MH, Dahl JJ, Frinkley KD, Nightingale KR. "Quantifying Hepatic Shear Modulus *In Vivo* Using Acoustic Radiation Force," *UMB*, 34(4):546-558, 2008.
19. Zhai L, **Palmeri ML**, Bouchard RR, Nightingale RW, Nightingale KR. "An integrated indenter-ARFI imaging system for tissue stiffness quantification," *Ultrasonic Imaging*, 30:95-111, 2008.
20. Bouchard RR, **Palmeri ML**, Pinton GF, Trahey GE, Streeter J, Dayton P. "Optical tracking of acoustic radiation force impulse-induced dynamics in a tissue mimicking phantom," *JASA*, 126(5):2733-2745, 2009.
21. Wang MH, **Palmeri ML**, Guy CD, Yang L, Hedlund LW, Diehl AM, Nightingale KR. "In-vivo quantification of liver stiffness in a rat model of hepatic fibrosis with acoustic radiation force," *UMB*, 35(10):1709-21, 2009.
22. Hancock HA, Smith LH, Cuesta J, Duranni AK, Angstadt M, **Palmeri ML**, Kimmel E, Frenkel V. "Investigations into pulsed-high intensity focused ultrasound enhanced delivery: Preliminary evidence for a novel mechanism," *UMB*, 35(10):1722-1736, 2009.
23. Bouchard RR, Hsu SJ, Dahl JJ, **Palmeri ML**, Trahey GE. "Image Quality, Tissue Heating, and Frame-rate Trade-offs in Acoustic Radiation Force Impulse Imaging," *IEEE UFFC*, 56(1):63-76, 2009. [PMCID: PMC2787080]
24. Bing KF, Howles GP, Qi Y, **Palmeri ML**, Nightingale KR. "Blood-brain barrier (BBB) disruption using a diagnostic ultrasound scanner and Definity in mice," *UMB*, 35(8):1298-1308, 2009.
25. Zhai L, Madden J, Foo WC, **Palmeri ML**, Mouraviev V, Polascik T, Nightingale K. "Acoustic radiation force impulse imaging of human prostates ex vivo," *UMB*, 36(4):576-588, 2010. [PMCID: PMC2857920]

26. **Palmeri ML**, Dahl JJ, MacLeod DB, Grant SA, Nightingale KR. "On the feasibility of imaging peripheral nerves using acoustic radiation force impulse imaging," *Ultrasonic Imaging*, 31:172-182, 2009. [PMCID: 19771960]
27. Wang MH, **Palmeri ML**, Rotemberg VM, Rouze NC, Nightingale KR. "Improving the robustness of time-of-flight based shear wave speed reconstruction methods using RANSAC in human liver in vivo," *UMB*, 36(5):802-813, 2010.
28. Zhai L, Madden J, Foo WC, Mouraviev V, Polascik T, **Palmeri M**, Nightingale K. "Characterizing the stiffness of human prostates using acoustic radiation force," *Ultrasonic Imaging*, 32(4):201-13, 2010.
29. Rotemberg VM, **Palmeri ML**, Rosenzweig SJ, Grant S, MacLeod D, Nightingale KR. "Acoustic Radiation Force Impulse (ARFI) Imaging-Based Needle Visualization," *Ultrasonic Imaging*, 33:1-16, 2011.
30. Bouchard RR, Hsu SJ, **Palmeri ML**, Rouze NC, Nightingale KR, Trahey GE. "Acoustic Radiation Force-Driven Assessment of Myocardial Elasticity using the Displacement Ratio Rate (DRR) Method," *UMB*, 37(7):1087-1100, 2011.
31. Rosenzweig SR, **Palmeri ML**, Nightingale KR. "GPU-based real-time small displacement estimation with ultrasound," *IEEE UFFC*, 58(2):399-405, 2011.
32. Hsu CM, **Palmeri ML**, Segars WP, Verras A, Dobbins JT. "An analysis of the mechanical parameters used for finite element compression of a high resolution 3D breast phantom," *Medical Physics*, 38(10), 2011. [PMCID: PMC3203130]
33. Rouze NC, Wang MH, **Palmeri ML**, Nightingale KR. "Robust Estimation of Time-of-Flight Shear Wave Speed Using a Radon Sum Transformation," *IEEE UFFC*, 57(12):2662-2670, 2010.
34. Anderson P, Rouze NC, **Palmeri ML**. "The Effect of Scatterer Concentration on Shear Wave Speed in Gelatin-Based Tissue Mimicking Phantoms," *Ultrasonic Imaging*, 33(2):134-142, 2011 [PMCID: PMC3128385].
35. **Palmeri ML**, Wang MH, Rouze NC, Abdelmalek M, Guy C, Moser B, Diehl AM, Nightingale KR. "Noninvasive Evaluation of Hepatic Fibrosis using Acoustic Radiation Force-Based Shear Stiffness in Patients with Nonalcoholic Fatty Liver Disease," *Journal of Hepatology*, 55(3):666-672, 2011.
36. **Palmeri ML** and Nightingale KR. "What challenges must be overcome before elasticity imaging is ready for the clinic?" *Imaging in Medicine*, 3(4):433-444, 2011. [PMCID: PMC3235674]
37. Herickhoff CD, Wilson CM, Grant GA, Britz GW, Light ED, **Palmeri ML**, Wolf PD, Smith SW. "Dual-mode IVUS Transducer for Image-Guided Brain Therapy: Preliminary Experiments," *UMB*, 37(10):1667-1676, 2011.

38. **Palmeri ML** and Nightingale KR. “Acoustic radiation force-based elasticity imaging methods,” *Interface Focus, Royal Society Publishing*, 1(4):553-564, 2011.
39. Hsu CM, **Palmeri ML**, Segars WP, Verras A, Dobbins JT. “An analysis of the mechanical parameters used for finite element compression of a high resolution 3D breast phantom,” *Virtual Journal of Biological Physics Research*, 22(7), 2011.
40. Zhai L, Polascik T, Foo W, Rosenzweig S, **Palmeri M**, Madden J, Nightingale K. “Acoustic radiation force impulse imaging of human prostates: Initial in vivo demonstration,” *UMB*, 38(1):50-61, 2012.
41. Bing KF, Rouze NC, **Palmeri ML**, Rotemberg VM, Nightingale KR. “Combined ultrasonic thermal ablation with interleaved ARFI image monitoring using a single diagnostic curvilinear array: a feasibility study,” *Ultrasonic Imaging*, in review.
42. Rotemberg V, **Palmeri M**, Nightingale R, Rouze N, Nightingale K. “Use of acoustic radiation force-based methods to assess nonlinear hepatic properties observed with increases in hepatic venous pressure,” *Physics in Medicine and Biology*, in press.
43. **Palmeri ML**, Abdelmalek MF, Nightingale KR. “The use of acoustic radiation force-based shear stiffness in non-alcoholic fatty liver disease,” *Journal of Hepatology*, in press.
44. Rouze NC, Wang MH, **Palmeri ML**, Nightingale KR. “Parameters Affecting the Resolution and Accuracy of 2D Quantitative Shear Wave Images,” *IEEE UFFC*, in review.
45. Wang MH, Byram BC, **Palmeri ML**, Rouze NC, Nightingale KR. “On the Precision of Time-of-Flight Shear Wave Speed Estimation: Initial Results using a Matrix Array and 3D Volumetric Imaging,” *IEEE UFFC*, in review.
46. Byram BC, Trahey GE, **Palmeri ML**. “Bayesian Speckle Tracking. Part I: An Implementable Perturbation to the Likelihood Function for Ultrasound Displacement Estimation,” *IEEE UFFC*, in review.
47. Byram BC, Trahey GE, **Palmeri ML**. “Bayesian Speckle Tracking. Part II: Biased Ultrasound Displacement Estimation,” *IEEE UFFC*, in review.
48. Patel V, Light E, Herickhoff C, Grant G, Britz G, Wilson C, **Palmeri M**, Smith S. “Intracranial Dual-mode IVUS and Hyperthermia Using Circular Arrays: Preliminary experiments,” *IEEE UFFC*, in review.
49. Byram B, Trahey G, **Palmeri M**. “On the Effect of Prior Probability Quality for Biased Time-Delay Estimation,” *Ultrasonic Imaging*, in review.

Abstracts, Conference Proceedings, and Posters

1. Nightingale KR, Nightingale RW, **Palmeri ML**, Trahey GE. "Finite element analysis of radiation force induced tissue motion with experimental validation," *Proceedings of 1999 IEEE Ultrasonics Symposium*, 1999.
2. **Palmeri ML**, Pullin B. "Wheelchair attached desk for Ryan," *Proceedings of RESNA 2000 Conference*, 2000.
3. Nightingale KR, **Palmeri ML**, Nightingale RW, Trahey GE. "Acoustic remote palpation: initial in vivo results," *Proceedings of the 2000 IEEE Ultrasonics Symposium*, 2000.
4. Nightingale KR, **Palmeri ML**, Soo MS, Trahey GE. "An experimental investigation of the required acoustic power for in vivo implementation of radiation force based imaging," *25th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2000.
5. Nightingale KR, McAleavey SA, Stutz DL, **Palmeri ML**, Nightingale RW, Bentley R, Trahey GE. "Acoustic radiation force impulse imaging: imaging the visco-elastic properties of tissues," *1st International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2002.
6. Nightingale KR, Soo MS, Nightingale RW, Bentley R, Stutz DL, **Palmeri ML**, Dahl JJ, Trahey GE. "Acoustic radiation force impulse imaging: remote palpation of the mechanical properties of tissue," *Proceedings of the 2002 IEEE Ultrasonics Symposium*, 2002.
7. McAleavey SA, **Palmeri ML**, Gracewski S, Trahey GE. "Ferromagnetic brachytherapy seed motion in soft tissue: models, measurements and ultrasound detection," *Proceedings of the 2002 IEEE Ultrasonics Symposium*, 2002.
8. Hsu S, **Palmeri ML**, Nightingale KR, McAleavey SA, Dahl JJ, Trahey GE. "Shear Wave Anisotropy Imaging," *Proceedings of the 2003 IEEE Ultrasonics Symposium*, 2003.
9. Pinton GF, Trahey GE, McAleavey SA, **Palmeri ML**, Nightingale KR. "ARFI imaging of the cardiovascular system," *Proceedings of the 2003 IEEE Ultrasonics Symposium*, 2003.
10. Nightingale KR, **Palmeri ML**, Bouchard RR, Trahey GE. "Acoustic radiation force impulse imaging: a parametric analysis of factors affecting image quality," *Proceedings of the 2003 IEEE Ultrasonics Symposium*, 2003.
11. **Palmeri ML**, Nightingale KR. "Thermal effects associated with acoustic radiation force impulse imaging," *Proceedings of the 2003 IEEE Ultrasonics Symposium*, 2003.
12. Stutz DL, Trahey GE, **Palmeri ML**, Bouchard R, Nightingale KR. "Measuring and modeling relaxation in viscoelastic phantoms with ARFI imaging," *28th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2003.

13. Nightingale KR, **Palmeri ML**, Fahey B, Bouchard R, Trahey GE. "Optimization of imaging parameters for ARFI imaging," *28th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2003.
14. Trahey GE, **Palmeri ML**, Gallippi CM, Stutz DL, Nightingale KR. "ARFI imaging of the dynamic artery," *28th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2003.
15. Nightingale KR, **Palmeri ML**, Stutz DL, Fahey BJ, Bouchard RR, Trahey GE. "Optimization of imaging parameters for acoustic radiation force impulse imaging," *28th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2003.
16. **Palmeri ML**, Nightingale KR. "Thermal effects of acoustic radiation force impulse imaging," *28th International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2003.
17. **Palmeri ML**, Trahey GE, Nightingale KR. "Imaging tissue mechanical properties using impulsive acoustic radiation force," *Duke University Medical Scientist Training Program Annual Symposium*, 2004.
18. Nightingale KR, Soo MS, **Palmeri ML**, Congdon AN, Frinkley KD, Trahey GE. "Imaging tissue mechanical properties using impulse acoustic radiation force," *Proceedings of the 2004 IEEE International Symposium on Biomedical Imaging*, 2004.
19. Nightingale KR, **Palmeri ML**, Congdon AN, Frinkley KD, Fahey BJ, Soo MS, Trahey GE. "Imaging the mechanical properties of tissue using acoustic radiation force: Demonstration of clinical applications of ARFI imaging," *American Institute of Ultrasound in Medicine*, 2004.
20. **Palmeri ML**, Frinkley KD, Zhai L, Bentley R, Ludwig K, Gottfried M, Nightingale KR. "Acoustic Radiation Force Impulse (ARFI) Imaging of the Gastrointestinal Tract," *Proceedings of the 2004 IEEE Ultrasonics Symposium*, 2004.
21. Gentry KL, **Palmeri ML**, Sachedina N, Smith SW. "Finite Element Analysis of Temperature Rise from an Integrated 3D Intracardiac Echo and Ultrasound Ablation Transducer," *Proceedings of the 2004 IEEE Ultrasonics Symposium*, 2004.
22. Nightingale KR, Soo MS, **Palmeri ML**, Congdon AC, Frinkley KD, Trahey GE. "Imaging tissue mechanical properties using impulsive acoustic radiation force," *ISBI*, 2004.
23. Nightingale KR, **Palmeri ML**, Congdon AN, Frinkley KD, Trahey GE. "Acoustic Radiation Force Impulse (ARFI) imaging: Characterizing the mechanical properties of tissue using their transient response to localized force," *Acoustic Society of America*, 2004.

24. **Palmeri ML**, Congdon AN, Frinkley KD, Nightingale KR. "Dynamics of soft tissue in response to impulsive acoustic radiation force with clinical applications," *3rd International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2004.
25. Fahey BJ, **Palmeri ML**, Trahey GE. "ARFI for real-time observation of lesion development during RF ablation procedures," *Proceedings of the 2005 SPIE Conference on Medical Imaging*, 2005.
26. Sharma A, Trahey GE, Frinkley KD, Soo MS, **Palmeri ML**, Nightingale KR. "Image processing and data acquisition optimization for Acoustic Radiation Force Impulse imaging of in vivo breast masses," *Proceedings of the 2005 SPIE Conference on Medical Imaging*, 2005.
27. Nightingale KR, **Palmeri ML**, Gallippi CM, Congdon AN, Trahey GE. "Ultrasonic imaging of the mechanical properties of tissues using localized, transient acoustic radiation force," *2005 IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2005.
28. **Palmeri ML**, Nightingale KR. "Ultrasonic displacement tracking in Acoustic Radiation Force Impulse (ARFI) Imaging," *Duke University Medical Scientist Training Program Annual Symposium*, 2005.
29. Zhai L, Bouchard R, **Palmeri M**, Nightingale R, Nightingale K. "A combined indenter/ARFI imaging system," *Proceedings of the 2005 IEEE Ultrasonics Symposium*, 2005.
30. Frinkley K, **Palmeri M**, Nightingale K. "Spatio-temporal heating patterns using a commercial, diagnostic ultrasound system," *Proceedings of the 2005 IEEE Ultrasonics Symposium*, 2005.
31. Trahey GE, Pinton GF, **Palmeri ML**, Bouchard RR, Dahl JJ. "Issues in real-time acoustic radiation force impulse imaging," *4th International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2005.
32. Fahey BJ, **Palmeri ML**, Trahey GE. "The impact of physiological motion on abdominal acoustic radiation force impulse imaging," *4th International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2005.
33. **Palmeri ML**, McAleavey SA, Trahey GE, Nightingale KR. "Ultrasonic Tracking of Acoustic Radiation Force-Induced Displacement in Homogeneous Media," *4th International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2005.
34. **Palmeri ML**, Nightingale KR. "Acoustic Radiation Force Impulse (ARFI) Imaging," *Duke University Medical Scientist Training Program Annual Symposium*, 2006.

35. Zhai L, **Palmeri ML**, Bouchard RR, Nightingale RW, Nightingale, KR. "An FEM model of an integrated indenter/ARFI imaging system," *31st International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2006.
36. Nightingale K, **Palmeri M**, Zhai L, Frinkley K, Dahl J, Trahey G. "Acoustic Radiation Force Impulse (ARFI) Imaging: Exploring the Potential for Modulus Quantification," *SIAM Conference on Financial Mathematics and Engineering*, 2006.
37. Nightingale K, Zhai L, Dahl J, Frinkley K, **Palmeri M**. "Shear Wave Velocity Estimation using Acoustic Radiation Force Impulsive Excitation in Liver In Vivo," *Proceedings of the 2006 IEEE Ultrasonics Symposium*, 2006.
38. Dahl J, Bouchard R, **Palmeri M**, Agrawal V, Trahey G. "Parallel Tracking and Other Methods for Real-Time ARFI Imaging Systems," *Proceedings of the 2006 IEEE Ultrasonics Symposium*, 2006.
39. **Palmeri M**, Frinkley K, Oldenburg K, Nightingale K. "Characterizing Acoustic Attenuation Using Focused Impulsive Acoustic Radiation Force," *Proceedings of the 2006 IEEE Ultrasonics Symposium*, 2006.
40. Nightingale K, Frinkley K, Zhai L, Trahey G, Palmeri M. "Toward Liver Fibrosis Staging with Impulsive Acoustic Radiation Force," *5th International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2006.
41. **Palmeri M**, McAleavey S, Fong K, Trahey G, Nightingale K. "Dynamic Mechanical Response of Elastic Spherical Inclusions to Acoustic Radiation Force Excitation," *5th International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity*, 2006.
42. **Palmeri M**, Dahl J, Frinkley K, Zhai L, Wang M, Nightingale K. "Quantifying Hepatic Shear Modulus *In vivo* Using Acoustic Radiation Force," *Duke University Medical Scientist Training Program Annual Symposium*, 2007.
43. Nightingale K, Fahey B, Hsu S, Frinkley K, Dahl J, **Palmeri M**, Zhai L, Pinton G, Trahey G. "On the potential for guidance of ablation therapy using acoustic radiation force impulse imaging," *ISBI*, 2007.
44. Trahey G, Dahl J, **Palmeri M**, Nightingale K. "Radiation force imaging: challenges and opportunities," Keynote Address, *2007 SPIE Conference on Medical Imaging*, 2007.
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Active External Funding

1. Real-time Visualization of Injected Regional Anesthetics using Ultrasonic Decorrelation Methods. *Coulter Translation Research Foundation* (PI).
2. Characterization of brain shear properties for blast modeling. *Office of Naval Research* (Co-PI).
3. Quantifying Liver Fibrosis with Acoustic Radiation Force. *National Institutes of Health* (Investigator).
4. Radiation Force Imaging of Prostate Cancer and Guidance of Biopsy Procedures. *National Institutes of Health* (Investigator).
5. Quantifying Cervical Softness with Elasticity Imaging. *National Institutes of Health* (Co-PI).