MUYINATU A. LEDIJU BELL, *Ph.D.*

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EDUCATION / TRAINING

Johns Hopkins University, Baltimore, MD, USA
Postdoctoral Fellow, 2012-present

Duke University, Durham, NC, USA
Ph.D., Biomedical Engineering, 2012

Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, UK
Visiting Scholar, Joint Department of Physics, 2009-2010

Massachusetts Institute of Technology, Cambridge, MA, USA
B.S., Mechanical Engineering, 2006

HONORS AND AWARDS

2015	Best Presentation Award, NSF Computational Sensing and Medical Robotics REU (awarded to student for work that I independently supervised)
2015	Best Paper Award Honorable Mention, IEEE International Conference on Advanced Robotics
2015	NIH K99/R00 Pathway to Independence Award, **$163,494** (K99 direct costs)
2014	Travel Award, FASEB MARC Postdoc Preparation Institute: Career Transitions
2013-2015	UNCF/Merck Postdoctoral Fellowship, **$92,000**
2013-2014	Ford Foundation Postdoctoral Fellowship, **$41,500**
2012	NextProf Faculty Development Workshop at University of Michigan
2012	Travel Award, IEEE International Symposium on Biomedical Imaging, Barcelona, Spain
2011-2012	UNCF/Merck Graduate Research Dissertation Fellowship, **$63,000**
2009-2010	Whitaker International Fellowship to conduct research in the UK, **$46,685**
2008	Travel Award, IEEE International Ultrasonics Symposium, Beijing, China
2008-2011	NIH Research Supplement to Promote Diversity, **$65,707** (direct costs)
2008	NSF Graduate Research Fellowship Honorable Mention
2006-2008	NIH Medical Imaging Training Grant
2006-2011	Duke Endowment Fellowship, **$16,000**
2006	GEM Fellowship (declined award)
2006	Hanson Place Black Achievers' Award
2005	Xerox Technical Minority Scholarship
2005	MIT Ilona Karmel Prize in Engineering Writing
2004	Inducted into Pi Tau Sigma, Mechanical Engineering Honor Society
2004	Tau Beta Pi, Engineering Honor Society (declared academically eligible)

SPONSORED RESEARCH GRANTS

NIH K99/R00 EB018994 $163,494 direct costs* Role: PI

Coherence-Based Photoacoustic Image Guidance of Transsphenoidal Surgeries

To build, test, and validate a prototype system for avoiding the deadly risk of carotid artery injury during surgeries to remove pituitary tumors using coherence-based photoacoustics

*__Note:__ Funding awarded for mentored (K99) phase will be followed by up to $249,000 per year in direct costs for 3-year independent (R00) phase

RESEARCH EXPERIENCE

2012-present

Postdoctoral Fellow, Johns Hopkins University, Baltimore, MD
Engineering Research Center for Computer-Integrated Surgical Systems and Technology,
Whiting School of Engineering, and Johns Hopkins Medical Institutions

Designed, fabricated, and tested novel photoacoustic imaging light delivery methods (e.g. interstitial, transperineal, transurethral) to improve prostate cancer detection and treatment, culminating with validation studies in phantom, *ex vivo* and *in vivo* canine prostates - Spearheaded *in vivo* human and animal studies to evaluate photoacoustic detection of brachytherapy seeds for treating prostate cancer and robotic placement of ultrasound probes for monitoring radiation therapy and measuring tissue elasticity - Managed a team of graduate students to investigate photoacoustic imaging with smaller, safer, less expensive pulsed laser diodes and coherence-based beamforming for improved image quality - Performed 3D Monte Carlo simulations of light propagation to predict optical profiles in biological tissues for transcranial and prostate photoacoustic imaging - Developing robot-based navigational systems for photoacoustic-guided surgery (Mentors & Clinical Collaborators: Emad Boctor, Peter Kazanzides, Danny Song, John Wong)

2006-2012

Graduate Research Assistant, Duke University, Durham, NC
Department of Biomedical Engineering

Laid theoretical foundations, developed the mathematical framework, implemented the first short-lag spatial coherence (SLSC) beamformer to improve ultrasound image quality, and tested it in phantom, simulations, and clinical cardiac data - Programmed and conducted clinical studies with a research-based Verasonics® ultrasound imaging system to improve endocardial border visualization in cardiology patients at the Duke University Medical Center - Analyzed sources of acoustic clutter noise in ultrasonic imaging, resulting in the development of novel clutter reduction and image processing methods (Advisor: Gregg E. Trahey)

2009-2010

Academic Visitor & Whitaker International Fellow, Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, UK
Joint Department of Physics

Implemented 3D speckle tracking with data from a 4D ultrasound system to identify minimum volume acquisition rates for ultrasound guidance of intensity-modulated radiation therapy - Initiated and won funding to support this international collaboration (Advisor: Jeffrey C. Bamber)

2002-2006

Undergraduate Research Assistant, Massachusetts Institute of Technology, Cambridge, MA
Departments of Mechanical Engineering and Materials Science and Engineering

Calculated analytical expressions derived from thermodynamic principles to describe skin heating and blood perfusion of a finger in contact with a temperature-based probe for testing endothelial dysfunction - Utilized the Surface Evolver simulation package to study the motion of an optical fiber due to solder wetting on a range of solder pad geometries (Advisors: Adam C. Powell, IV, H. Frederick Bowman)

TEACHING EXPERIENCE

2013

Course Instructor, Johns Hopkins University, Baltimore, MD
Department of Computer Science

Designed the syllabus, prepared lecture material, and graded assignments and exams for an accelerated course entitled “Introduction to Medical Imaging”, offered during the intersession period at Johns Hopkins University

2015

Course Instructor, Udemy, San Francisco, CA
Massive Open Online Course
Developed videos and interactive lectures for online course “Intro to Medical Imaging”

2014

Course Instructor, Johns Hopkins University, Baltimore, MD
Department of Biomedical Engineering
Co-developed and significantly contributed to the foundation of an elective course entitled “Ultrasound Imaging: Theory and Applications” for the imaging core curriculum in the BME Department - Responsible for designing and delivering lecture materials, managing student projects, creating homework and test problems, and recruiting teaching assistants - Evaluation scores exceeded JHU BME department mean and median
Course evaluation mean ± std and median: 4.40±0.89 and 5.00 out of 5 (best)
Instructor evaluation mean ± std and median: 4.60±0.55 and 5.00 out of 5 (best)

2013

Course Instructor, Johns Hopkins University, Baltimore, MD
Department of Computer Science
Designed the syllabus, prepared lecture material, and graded assignments and exams for an accelerated course entitled “Introduction to Medical Imaging”, offered during the intersession period at Johns Hopkins University

2012

Guest Lecturer, Duke University, Durham, NC
Department of Biomedical Engineering
Taught lecture entitled “Introduction to Short-lag Spatial Coherence (SLSC) Imaging: A Novel Ultrasound Beamforming Approach” to students enrolled in the Advanced Methods in Ultrasound Imaging graduate-level course

2010

Guest Lecturer, Institute of Cancer Research and Royal Marsden Hospital, Sutton, Surrey, UK
Joint Department of Physics
Taught hands-on lecture and demonstration entitled “Elastography Basics” to students from King's College London enrolled in Physics of Medical Imaging course

2008-2009

Mentor and Science Coach, Duke University, Durham, NC
Building Opportunities and Overtures in Science and Technology (BOOST) Program
Mentored two minority sixth-grade girls for 4-6 hours a week for one year to improve the scientific performance of these underrepresented, female, and economically disadvantaged students and increase their preparedness for science education - Designed stimulating hands-on activities, led scientific experiments, fed their intuition and curiosity, and guided and encouraged them as they explored self-selected topics of interest, culminating with a year-end science exposition to family and friends

2007-2008

Laboratory Instructor and Teaching Assistant, Duke University, Durham, NC
Department of Biomedical Engineering
Led hands-on experiments for the laboratory component of the “Introduction to Biomechanics” undergraduate-level course for two semesters - Responsible for reviewing lecture material, introducing parallel laboratory assignments, holding regular office hours,

and grading laboratory reports

2006

Resident Tutor, Massachusetts Institute of Technology, Cambridge, MA
Women's Technology Program (WTP) in Mechanical Engineering
Taught a lecture entitled “Introduction to Mechanical Design” to twenty talented rising high-school seniors in the inaugural mechanical engineering branch of WTP - Assisted with coursework development, class instruction, and nightly homework

2006

Reading Tutor, Cambridge Community Center, Cambridge, MA
ReachOut Reading Program
Tutored a local third-grade student in reading, writing, and language arts once a week for one year

INDUSTRY EXPERIENCE

Summer 2005

Medtronic, Inc., Minneapolis, MN
Neurological Division
Investigated the top manufacturing defect in neurological stimulation leads and presented possible solutions to the engineering design team, resulting in potential savings of approximately $1M

Summer 2004

Medtronic, Inc., Minneapolis, MN
Cardiac Rhythm Management Division
Assisted with four projects in the areas of concept product design and testing, finite element analyses of the stresses on cardiac leads inserted *in vivo,* and mechanical solutions to histological slicing

Summer 2003

United Technologies, Pratt & Whitney, Hartford, CT
Mechanical Design Intern
Performed mechanical engineering design and drafting tasks to reduce the weight of the F135 engine on the F-35 joint strike fighter plane

INTELLECTUAL PROPERTY

1. **Bell MAL**, Boctor EM, Kazanzides PK, Method and System for Transcranial Photoacoustic Imaging for Guiding Skull Base Surgeries, U.S. Patent Application filed, February 2, 2015.
2. Dahl JJ, **Bell MAL**, Trahey GE, Method and Apparatus for Van-Cittert Zernike Imaging, Duke University, U.S. Patent Application Number 13/638,996, filed March 30, 2011. Patent Pending.

INVITED TALKS

1. **Bell MAL,** Early Career Spotlight at the 3rd Annual Academic Research and Leadership Symposium co-located with the NSBE National Convention, Boston, MA, March 25, 2016
2. **Bell MAL,** *Light, Sound, Action: Advancing Photoacoustic Systems Toward Clinical Ubiquity by Integrating Optics*, *Acoustics and Robotics*. The George Washington University, Washington, DC. April 29, 2015
3. **Bell MAL,** *Light, Sound, Action: Advancing Photoacoustic Systems Toward Clinical*

Ubiquity by Integrating Optics, Acoustics and Robotics. University of California San Diego, San Diego, CA, March 17, 2015
4. **Bell MAL**, *Toward Clinical Implementation of Photoacoustic Imaging Systems with Short-lag Spatial Coherence Beamforming*. Washington University in St. Louis, St. Louis, MO, March 3, 2015
5. **Bell MAL**, *Light, Sound, Action: Toward Clinical Ubiquity of Photoacoustic Systems by Integrating Optics, Acoustics and Robotics*. Johns Hopkins University, LCSR/ERC Seminar Series, Baltimore, MD, February 18, 2015
6. **Bell MAL**, *Engineering and Innovation in Medicine with Ultrasound and Photoacoustic Technology*. Project Scientist Academy: Empowering Girls Aged 4-12 with an Aptitude, Talent and Passion for STEM, Charlotte, NC, USA, August 1, 2013 & August 8, 2014
7. **Bell MAL**, *Short-Lag Spatial Coherence (SLSC) Beamforming of Ultrasound and Photoacoustic Images*. University of Maryland, College Park, MD, February 26, 2014
8. **Bell MAL**, *Short-Lag Spatial Coherence (SLSC) Beamforming of Ultrasound and Photoacoustic Images*. Arizona State University, Tempe, AZ, USA, January 29, 2014
9. Wong J, **Bell MAL,** Sen HT, Forbang RT, Iordachita I, Lachaine M, Kazanzides P, *Integrated on-board CBCT-US imaging system for soft tissue IGRT and real-time intrafraction monitoring*. AAPM, Indianapolis, IN, USA August 4-8, 2013.
10. **Bell MAL**, *Short-Lag Spatial Coherence (SLSC) Imaging: A Novel Method for Processing Ultrasound Data*. Merck & Co., Inc., Rahway, NJ, USA, September 27, 2012
11. **Bell MAL**, *Recent Advances in Ultrasound: Short-Lag Spatial Coherence (SLSC) Imaging and In Vivo Liver Tracking with a 2D Matrix Array*. Boston University, Boston, MA, USA, June 25, 2012
12. **Bell MAL**, *Advances in Ultrasound Imaging: Short-Lag Spatial Coherence (SLSC) Beamforming and In Vivo Liver Tracking with a 2D Matrix Array*. Johns Hopkins University, Baltimore, MD, USA, June 14, 2012
13. **Bell MAL**, *Short-Lag Spatial Coherence (SLSC) Imaging: A Novel Beamforming Method for Ultrasound Images*. Madrid, Spain, May 14, 2012
14. **Lediju MA**, *The Story of One Biomedical Engineer*. Wallington SDA Group, Wallington, Surrey, UK, May 22, 2012
15. **Lediju MA**, *On the Road to Success*. Lee High School, Raleigh, NC, USA, January 2007

PUBLICATIONS & PRESENTATIONS

Peer-Reviewed Journal Articles

1. Kang HJ, **Bell MAL**, Guo X, Boctor EM. Spatial angular compounding of photoacoustic images, *IEEE Transactions on Medical Imaging* (accepted)
2. **Bell MAL**, Kumar S, Kuo L, Sen HT, Iordachita I, Kazanzides P. Toward standardized ultrasound-based elasticity measurements with robotic force control, *IEEE Transactions on Biomedical Engineering* (in press)
3. **Bell MAL**, Dahl JJ, Trahey GE. Resolution and contrast characteristics of short-lag spatial coherence images, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 62(7):1265, 2015 **[featured on cover]**
4. **Bell MAL**, Ostrowski AK, Li K, Kazanzides P, Boctor EM. Localization of transcranial targets for photoacoustic-guided endonasal surgeries, *Photoacoustics,* 3(2):78-87, 2015
5. De Luca V, Benz T, Kondo S, Koenig L, Luebke D, Rothluebbers S, Somphone O, Allaire S, **Bell MAL**, Chung D, Cifor A, Grozea C, Guenther M, Jenne J, Kipshagen T, Kowarschik M, Navab N, Ruehaak J, Schwaab J, Tanner C. The 2014 liver ultrasound

tracking benchmark, *Physics in Medicine and Biology,* 60(14):557, 2015
6. **Bell MAL**, Guo X, Song DY, Boctor EM. Transurethral light delivery for prostate photoacoustic imaging, *Journal of Biomedical Optics*, 20(3):036002, 2015
7. **Bell MAL**, Kuo N, Song DY, Kang J, Boctor EM. *In vivo* visualization of prostate brachytherapy seeds with photoacoustic imaging, *Journal of Biomedical Optics,* 19(12):126011, 2014.
8. **Bell MAL**, Sen HT, Iordachita I, Kazanzides P, Wong J. *In vivo* reproducibility of robotic probe placement for a novel ultrasound-guided radiation therapy system, *Journal of Medical Imaging*, 1(2):025001, 2014.
9. **Bell MAL**, Kuo N, Song DY, Boctor EM. Short-lag spatial coherence beamforming of photoacoustic images for enhanced visualization of prostate brachytherapy seeds, *Biomedical Optics Express,* 4(10): 1964-1977*,* 2013.
10. **Bell MAL**, Goswami R, Kisslo JA, Dahl JJ, Trahey GE. Short-lag spatial coherence (SLSC) imaging of cardiac ultrasound data: Initial clinical results, *Ultrasound in Medicine and Biology*, 39(10):1861–74. 2013.
11. **Bell MAL**, Byram BC, Harris EJ, Evans PM, Bamber JC. *In vivo* liver tracking with a high volume rate 4D ultrasound scanner and a 2D matrix array probe, *Physics in Medicine and Biology,* 57(5):1359-74. 2012.
12. Dahl JJ, Hyun D, **Lediju MA**, Trahey GE. Lesion detectability in diagnostic ultrasound with short-lag spatial coherence imaging. *Ultrasonic Imaging* 33(2):119-133. 2011.
13. **Lediju MA**, Trahey GE, Byram BC, Dahl JJ. Spatial coherence of backscattered echoes: Imaging characteristics, *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 58(7):1377-88. 2011.
14. **Lediju MA**, Pihl MJ, Hsu SJ, Dahl JJ, Gallippi CM, Trahey GE. A motion-based approach to abdominal clutter reduction. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* 56(11):2437-49. 2009. **[featured on cover]**
15. **Lediju MA**, Pihl MJ, Hsu SJ, Dahl JJ, Trahey GE. Quantitative assessment of the magnitude, impact, and spatial extent of ultrasonic clutter. *Ultrasonic Imaging* 30(3):151-168. 2008.

Articles in Preparation and/or Review

16. Sen HT, **Bell MAL**, Zhang Y, Ding K, Wong J, Iordachita I, Kazanzides P, System integration and in-vivo testing of a robot for ultrasound guidance and monitoring during radiotherapy, *IEEE Transactions on Biomedical Engineering* (in review)
17. Zhang H, **Bell MAL**, Guo X, Kang HJ, Boctor EM. Synthetic aperture-based photoacoustic image re-beamforming using beamformed ultrasound data, *Biomedical Optics Express* (in preparation)
18. Su L, Iordachita I, Zhang Y, Lee J, Ng SK, Jackson J, Hooker T, Wong J, Herman JM, Sen HT, Kazanzides P, **Bell MAL**, Yang C, and Ding K, Arm-Bridge System for Real-time Ultrasound Monitoring in Pancreatic Cancer Stereotactic Body Radiation Therapy, *Medical Physics* (in preparation)
19. Zhang HK, **Bell MAL**, Guo X, Kang HJ, Boctor EM, Synthetic aperture-based photoacoustic image re-beamforming using radiofrequency (RF) data, *Biomedical Optics Express* (in preparation)

Conference Proceedings & Associated Presentations

1. **Bell MAL**, Dagle AB, Kazanzides P, Boctor EM. Experimental Assessment of Energy Requirements and Tool Tip Visibility for Photoacoustic-Guided Endonasal Surgery, *Proceedings of SPIE Photonics West*, San Francisco, CA, February 13-17, 2016.

2. Sen HT, **Bell MAL**, Zhang Y, Ding K, Wong J, Iordachita I, Kazanzides P, System integration and preliminary in-vivo experiments of a robot for ultrasound guidance and monitoring during radiotherapy, *Proceedings of the 2015 IEEE 17th International Conference on Advanced Robotics,* Istanbul, Turkey, July 27-31, 2015. **[this paper received 2nd place for Best Paper Award -- i.e., Honorable Mention]**
3. Kim S, Kang HJ, Cheng A, **Bell MAL**, Boctor EM, Kazanzides P. Photoacoustic image guidance for robot-assisted skull base surgery, *Proceedings of IEEE International Conference on Robotics and Automation*, Seattle, WA, May 26-30, 2015.
4. **Bell MAL**, Ostrowski AK, Li K, Kazanzides P, Boctor EM. Quantifying bone thickness, light transmission, and contrast interrelationships in transcranial photoacoustic imaging, *Proceedings of SPIE Photonics West*, San Francisco, CA, February 7-12, 2015.
5. **Bell MAL**, Guo X, Kang HJ, Boctor EM. Improved contrast in laser-diode-based photoacoustic images with short-lag spatial coherence beamforming, *Proceedings of the 2014 IEEE International Ultrasonics Symposium*, Chicago, IL, September 3-6, 2014.
6. **Bell MAL**, Sen HT, Iordachita I, Kazanzides P. Force-controlled ultrasound robot for consistent tissue pre-loading: Implications for acoustic radiation force elasticity imaging, *Proceedings of the 2014 IEEE International Conference on Biomedical Robotics and Biomechatronics*, São Paulo, Brazil, August 12-15, 2014.
7. **Bell MAL**, Sen HT, Iordachita I, Kazanzides P, Wong J. In vivo reproducibility of robotic probe placement for an integrated US-CT image-guided radiotherapy system, *Proceedings of SPIE Medical Imaging*, San Diego, CA, February 16-20, 2014.
8. **Bell MAL**, Ostrowski AK, Kazanzides P, Boctor EM. Feasibility of transcranial photoacoustic imaging for interventional guidance of endonasal surgeries, *Proceedings of SPIE Photonics West*, San Francisco, CA, February 1-6, 2014.
9. **Bell MAL**, Song DY, Boctor EM. Coherence-based photoacoustic imaging of brachytherapy seeds implanted in a canine prostate, *Proceedings of SPIE Medical Imaging*, San Diego, CA, February 16-20, 2014.
10. **Bell MAL**, Kuo N, Kang J, Song DY, Boctor EM. *In vivo* photoacoustic imaging of prostate brachytherapy seeds, *Proceedings of SPIE Photonics West*, San Francisco, CA, February 1-6, 2014.
11. **Bell MAL**, Guo X, Song DY, Boctor EM. Photoacoustic imaging of brachytherapy seeds in an *ex vivo* prostate with transurethral light delivery, *Proceedings of SPIE Photonics West*, San Francisco, CA, February 1-6, 2014.
12. Kang HJ, **Bell MAL**, Guo X, Taylor RH, Boctor EM. Freehand spatial-angular compounding of photoacoustic images, *Proceedings of SPIE Medical Imaging*, San Diego, CA, February 16-20, 2014.
13. Sen HT, **Bell MAL**, Iordachita I, Wong J, Kazanzides P, A Cooperatively Controlled Robot for Ultrasound Monitoring of Radiation Therapy**,** *Proceedings of the 2013 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Tokoyo, Japan, November 3-8, 2013.
14. Dahl JJ, Bottenus N, **Bell MAL**, Cook M, Coherent Flow Imaging: A Power Doppler Imaging Technique Based on Backscatter Spatial Coherence, *Proceedings of the 2013 IEEE Joint UFFC, EFTF, PFM Symposium*, Prague, Czech Republic, July 21-25, 2013.
15. **Bell MAL**, Goswami R, Dahl JJ, Trahey GE. Improved Visualization of Endocardial Borders with Short-Lag Spatial Coherence (SLSC) Imaging of Fundamental and Harmonic Ultrasound Data*, Proceedings of the 2012 IEEE International Ultrasonics Symposium*, Dresden, Germany, October 7-10, 2012.
16. **Bell MAL,** Goswami R, Trahey GE. Clutter Reduction in Echocardiography with Short-Lag Spatial Coherence (SLSC) Imaging*, Proceedings of the 2012 IEEE International*

Symposium on Biomedical Imaging, Barcelona, Spain, May 2-5, 2012.

17. **Bell MAL**, Dahl JJ, Trahey GE. Comparative Resolution and Tracking Performance in B-mode and Short-Lag Spatial Coherence (SLSC) Imaging*, Proceedings of the 2011 IEEE International Ultrasonics Symposium*, Orlando, FL, October 18-21, 2011.
18. Dahl JJ , Pinton GF, **Lediju MA**, Trahey GE. A Novel Imaging Technique Based on the Spatial Coherence of Backscattered Waves: Demonstration in the Presence of Acoustical Clutter*, Proceedings of SPIE Medical Imaging*, Orlando, FL, February 12-17, 2011.
19. **Lediju MA**, Trahey GE, Jakovlijevic M, Byram BC, Dahl JJ. Short-Lag Spatial Coherence Imaging*, Proceedings of the 2010 IEEE International Ultrasonics Symposium*, San Diego, CA, October 11-14, 2010.
20. **Lediju MA**, Byram BC, Harris EJ, Evans PM, Bamber JC. 3D Liver Tracking Using a Matrix Array: Implications for Ultrasonic Guidance of IMRT*, Proceedings of the 2010 IEEE International Ultrasonics Symposium*, San Diego, CA, October 11-14, 2010.
21. **Lediju MA**, Byram BC, Trahey GE. Sources and Characterization of Clutter in Cardiac B-mode Images*, Proceedings of the 2009 IEEE International Ultrasonics Symposium*, Rome, Italy, September 20-23, 2009.
22. Dahl JJ, Pinton GF, **Lediju MA**, Trahey GE. Simulation and Experimental Analysis of Ultrasonic Clutter in Fundamental and Harmonic Imaging*, Proceedings of SPIE Medical Imaging 2009*, Orlando, FL, February 7-12, 2009.
23. **Lediju MA**, Pihl MJ, Hsu SJ, Dahl JJ, Gallippi CM, Trahey GE. Magnitude, origins, and reduction of abdominal ultrasonic clutter*, Proceedings of the 2008 IEEE International* Ultrasonics Symposium, Beijing, China, November 2-5, 2008.

Refereed Conference Abstracts & Associated Presentations

1. Sen HT, Kazanzides P, **Bell MAL**, Iordachita I, Wong J, Ding K, A Robotic System for Ultrasound-Guided Patient Setup and Real-Time Treatment Monitoring, 18th International Conference on the Use of Computers in Radiation Therapy, London, UK, June 27-30, 2016.
2. Sen HT, Ding K, Cheng A, **Bell MAL**, Wong J, Iordachita I, and Kazanzides P, A Cooperatively-Controlled Robot for Ultrasound-Guided Radiation Therapy, NCIGT and NIH Image Guided Therapy Workshop, Bethesda, MD, March 15-16, 2016.
3. Zhang Y, Su L, Lee J, Hooker T, Ng SK, Iordachita I, Wong J, Herman J, Sen HT, Kazanzides P, **Bell MAL**, Ding K, Planning Feasibility Study of Ultrasound Guided Stereotactic Radiation Therapy (SBRT) on CyberKnife for Pancreatic Cancer, *American Society for Radiation Oncology (ASTRO) 57th Annual Meeting,* San Antonio, TX, October 18-21, 2015.
4. Su L, Zhang Y, Lee J, Ng SK, Iordachita I, Jackson J, Wong J, Herman J, Sen HT, Hooker T, Kazanzides P, **Bell MAL**, Ding K, Stereotactic Body Radiation Therapy Planning for Pancreas Cancer Under Real Time Ultrasound Monitoring, *American Society for Radiation Oncology (ASTRO) 57th Annual Meeting,* San Antonio, TX, October 18-21, 2015.
5. Ng SK, Armour E, Su L, Zhang Y, Iordachita I, Wong J, Sen HT, Kazanzides P, **Bell MAL**, Ding K. Evaluation of Fiducial Markers for Ultrasound and X-Ray Images Used for Motion Tracking in Pancreas SBRT, *AAPM 57th Annual Meeting and Exhibition*, Anaheim, CA, July 12-16, 2015.
6. Su L, O'Shea T, Ng SK, Zhang Y, Iordachita I, Wong J, Harris E, Bamber J, Sen HT, Kazanzides P, **Bell MAL**, Ding K. Real-Time Ultrasound Monitoring with Speckle Tracking in Abdominal Stereotactic Body Radiation Therapy, *AAPM 57th Annual Meeting*

and Exhibition, Anaheim, CA, July 12-16, 2015.

7. **Bell MAL**, Guo X, Kuo NP, Song DY, Boctor EM. Comparison of light delivery methods for photoacoustic imaging of prostate brachytherapy seeds, *40th International Symposium on Ultrasonic Imaging and Tissue Characterization*, Arlington, VA, June 22-24, 2015.
8. Ding K, Zhang Y, Sen H, **Bell MAL**, Goldstein S, Kazanzides P, Iordachita I, Wong J. Towards Integrated CT and Ultrasound Guided Radiation Therapy Using A Robotic Arm with Virtual Springs, *AAPM 56th Annual Meeting and Exhibition*, Austin, TX, July 20-24, 2014.
9. **Bell MAL**, Boctor EM, Kuo N, Kang J, Song DY. Photoacoustic imaging for improved visualization of prostate brachytherapy seeds, *American Radium Society*, St. Thomas, U.S. Virgin Islands, April 26-29, 2014.
10. **Bell MAL**, Kang HJ, Guo X, Song DY, Boctor EM. Real-time transurethral photoacoustic imaging of prostate brachytherapy seeds, *39th International Symposium on Ultrasonic Imaging and Tissue Characterization*, Arlington, VA, June 9-11, 2013.
11. Kang HJ, **Bell MAL**, Guo X, Cheng A, Tavakoli B, Boctor EM. Flexible software framework for acquiring pre-beamformed photoacoustic RF data in real time, *39th International Symposium on Ultrasonic Imaging and Tissue Characterization*, Arlington, VA, June 9-11, 2013.
12. **Bell MAL**, Sen HT, Kazanzides P, Iordachita I, Forbang RT, Lachaine M, Wong J, Repeatability of Robotic Placement of Ultrasound Probes for An Integrated US-CT Approach to Image-Guided Radiotherapy, *AAPM 55th Annual Meeting and Exhibition*, Indianapolis, IN, August 4-8, 2013.
13. **Bell MAL**, Sen HT, Kazanzides P, Iordachita I, Boctor EM, Wong J, *Feasibility of robotic placement of imaging and model ultrasound probes for combined US-CT image-guided radiotherapy*, Joint Workshop: Technology for Innovation in Radiation Oncology, Bethesda, MD, June 13-14, 2013.
14. **Bell MAL**, Sen HT, Kazanzides P, Iordachita I, Wong J, Boctor EM, *Reproducibility of tissue deformations with robot-assisted placement of an ultrasound probe***,** 38th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2013.
15. Kang H**, Bell MAL,** Guo X, Taylor RH, Boctor EM, *Freehand spatial-angular compounding of photoacoustic images,* 38th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2013.
16. Kuo N, **Bell MAL,** Boctor EM, *Prototype system and preliminary comparison of beamforming algorithms for photoacoustic imaging of prostate brachytherapy seeds*, 38th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2013.
17. Guo X, Etienne-Cummings R, Kang H, **Bell MAL**, Boctor EM, *Localizing surgical tools with an ultrasound-based active reflector-tracking system*, 38th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2013.
18. Trahey GE, **Bell MAL**, Jakovljevic M, Hyun D, Dahl JJ, *Comparison of delay-and-sum and coherence beamforming methods,* 38th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2013.
19. **Bell MAL,** Goswami R, Trahey GE. *Clutter reduction in in-vivo cardiac images with Short-Lag Spatial Coherence (SLSC) imaging.* 37th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 11-13, 2012.
20. **Lediju MA**, Dahl JJ, Trahey GE. *Comparative resolution measurements in B-mode and Short-Lag Spatial Coherence images.* 36th International Symposium on Ultrasonic

Imaging and Tissue Characterization, Arlington, VA, June 13-15, 2011.

21. **Lediju MA**, Byram BC, Trahey GE*. Preliminary investigation of clutter in cardiac images.* 34th International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, June 10-12, 2009.
22. **Lediju MA**, Pihl MJ, Hsu SJ, Dahl JJ, Gallippi CM, Trahey GE. *Ultrasonic clutter: Magnitude, impact on lesion detection, effect of harmonic imaging, and characterization of origins.* 33rd International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, May 14-16, 2008.
23. Dahl JJ, **Lediju MA**, Pihl MJ, Hsu SJ, Gallippi CM, Trahey GE. *Clutter reduction methods from compression of tissue,* Sixth International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity, Santa Fe, New Mexico, November 2-5, 2007.
24. **Lediju MA**, Pihl MJ, Hsu SJ, Dahl JJ, Gallippi CM, Trahey GE. *Investigations into clutter reduction methods in abdominal ultrasonic imaging.* 32nd International Symposium on Ultrasonic Imaging and Tissue Characterization, Arlington, VA, May 16-18, 2007.

PROFESSIONAL MEMBERSHIPS

2014-2015	Institute of Electrical and Electronics Engineers (IEEE)
2014-2015	SPIE, Early Career Member
2013, 2015	Biomedical Engineering Society, Early Career Member
2013	American Association of Physicists in Medicine, Junior Member
2008, 2012	IEEE, Student Member
2012-2013	IEEE Engineering in Medicine and Biology Society, Student Member
2008-2012	IEEE Women in Engineering, Student Member
2008, 2012	IEEE Ultrasonics, Ferroelectrics, and Frequency Control, Student Member
2008-2010	SPIE, Student Member

JOURNAL ARTICLE REVIEWER

Biomedical Optics Express - IEEE Transactions on Medical Imaging - IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control - Journal of Biomedical Optics - Journal of Applied Remote Physics - Medical Physics - Photoacoustics - Physics in Medicine and Biology

LEADERSHIP AND SERVICE

Postdoctoral Fellow, Johns Hopkins University

2015-2016	President, Johns Hopkins Homewood Postdoctoral Association
2015	NSF Review Panel – ECCS Communication, Circuits, and Sensing-Systems
2015	Mentored Alicia B. Dagle through the NSF Computational Sensing and Medical Robotics Summer Research Experience for Undergraduates (REU) Program **[Best Project & Final Presentation Award, awarded to student for work that I independently supervised]**
2015	Session Chair, Ultrasonic Imaging and Tissue Characterization (UITC) Symposium, Photoacoustics
2014-2015	Social Co-Chair, Johns Hopkins Homewood Postdoc Association Executive Board
2014-2015	Co-organizer, Medical Imaging and Computer-Assisted Interventions (MICCAI) Challenge on Liver Ultrasound Tracking
2013, 2014	Mentored Anastasia K Ostrowski through the NSF REU program for two summers

Graduate Student, Duke University

2012 Selected to recruit graduate students to Duke University at the 38th National Convention for the National Society of Black Engineers (NSBE), Pittsburgh, PA, resulting in 53 students signing up to be contacted by the admissions office

2006-2012 Immanuel Temple SDA Soup Kitchen Ministry

2007-2012 Young Adult Ministry Leader, Immanuel Temple SDA

2006-2012 Member, Duke University Bouchet Society – An organization that supports the academic, professional, and social development of underrepresented minority graduate students in the STEM fields

2007-2008 Public Relations Chairperson, Duke University Bouchet Society – Organized and promoted events such as the Celebration of Black History Month Poster Session and Seminar Series

Undergraduate Student, Massachusetts Institute of Technology

2002-2006 Member, Biomedical Engineering Society (BMES), MIT Student Chapter

2003-2004 Vice President of Publicity, BMES MIT Student Chapter

2004-2006 Editor, *The BioTECH,* Newsletter of BMES MIT Student Chapter

2002-2006 Member, MIT Black Students' Union (BSU)

2004-2005 Treasurer, MIT BSU

2002-2006 Member, National Society of Black Engineers, MIT Student Chapter