David Pierson Bradway, Ph.D.

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Biomedical Engineering
Duke University
Durham, NC 27708 USA

Objective

- Career in research, visualization, data acquisition, and signal processing
- Engineering, research and development role in academia or industry, Autumn 2014

Work Experience

- **Duke University** (Durham, NC, USA)

  Research Scientist, 2014 - present

- **Technical University of Denmark (DTU)** (Kongens Lyngby, Denmark)

  Postdoctoral Researcher, 2013 - 2014

  - Developed OpenCL software for processing 3-D Doppler ultrasound data on the GPU
  - Presented onference abstract, poster, and proceedings
  - Pursuing pre-clinical feasibility study and peer-reviewed article

- **Duke University** (Durham, NC, USA)

  Graduate Research and Teaching Assistant, 2005 - 2013

  - PhD project using ultrasound to noninvasively measure the heart's mechanical properties
  - Reviewed scientific literature, formulated and carried out research plan
  - Organized and conducted out pre-clinical trials at Duke University Medical Center
  - Presented results at conferences, published proceedings and co-authored articles

- **Siemens Healthcare** (Issaquah, WA, USA)

  Graduate Student Research Intern, 2008

  - Worked within a research team in a multinational corporation
  - Added multiple focal zone ARFI excitation option in research mode of Acuson S2000 ultrasound scanner
  - Learned version control and IDE tools

Education

- **Duke University** (Durham, NC, USA)

  Ph.D. in Biomedical Engineering, May 2013.

- **The Ohio State University (OSU)** (Columbus, OH, USA)

  B.S. in Electrical and Computer Engineering, June 2005.

Honors and Activities

- Whitaker International Program Scholar (2013)
- National Science Foundation Graduate Research Fellow (2005-2008)
- Goldwater Research Scholar (2004-2005)
- Founded engineering community service group at Ohio State (2003)
- Organized engineering design and build trip to Honduran orphanage (2004)

Skills

- Expert in signal and imaging processing programming: Matlab, Python, LabVIEW
- Working knowlegde of other tools and languages: C/C++, OpenCL, R, Mathematica, MS Office
- Picked up for small web projects: PHP, Ruby/Rails, Perl, flavors of SQL, HTML5, Javascript, Git, and reStructuredText
- Strong focus on problem solving, signal and image analysis, scientific computing, and experimental design
- Self-motivated execution of a high-level plan with nominal oversight
- Strong written and verbal communication, and data visualization display skills
- Successful writer of fellowships, scholarships, and grants

Interests

- Tracking Energy efficiency: TED5000 owner, Plotwatt user, Neurio backer, MS Hohm & Google PowerMeter ex-user
- Creating tools to close feedback loops: measure data, effect change, and automate it
- Personal 'hacking' in mobile and embedded systems: Arduino, Raspberry Pi, Android
- Behavioral Economics and decision making: the UK's 'Nudge Unit', the work of Dan Ariely

Journal Articles [1–10]

Abstracts and Proceedings [11–32]

References

1. Fahey BJ, Nelson RC, Bradway DP, Hsu SJ, Dumont DM, et al. (2008) In vivo visualization of abdominal malignancies with acoustic radiation force elastography. Physics in medicine and biology 53: 279–93. doi:10.1088/0031-9155/53/1/020

2. Fahey BJ, Nelson RC, Hsu SJ, Bradway DP, Dumont DM, et al. (2008) In vivo guidance and assessment of liver radio-frequency ablation with acoustic radiation force elastography. Ultrasound in medicine & biology 34: 1590–603. doi:10.1016/j.ultrasmedbio.2008.03.006

3. Nightingale K, Palmeri M, Zhai L, Frinkley K, Wang M, et al. (KR) Impulsive acoustic radiation force: imaging approaches and clinical applications. The Journal of the Acoustical Society of America 123: 3792. Available: http://scitation.aip.org/content/asa/journal/jasa/123/5/10.1121/1.2935460.

4. NIGHTINGALE K, PALMERI M, DAHL J, BRADWAY D, HSU S, et al. (2009) Elasticity imaging with acoustic radiation force: Methods and clinical applications. Japanese journal of medical ultrasonics 36: 116.

5. Wolf PD, Eyerly SA, Bradway DP, Dumont DM, Bahnson TD, et al. (2011) Near real time evaluation of cardiac radiofrequency ablation lesions with intracardiac echocardiography based acoustic radiation force impulse imaging. The Journal of the Acoustical Society of America 129: 2438. Available: http://scitation.aip.org/content/asa/journal/jasa/129/4/10.1121/1.3587978.

6. Eyerly SA, Bahnson TD, Koontz JI, Bradway DP, Dumont DM, et al. (2012) Intracardiac acoustic radiation force impulse imaging: A novel imaging method for intraprocedural evaluation of radiofrequency ablation lesions. Heart rhythm: the official journal of the Heart Rhythm Society 9: 1855–1862. doi:10.1016/j.hrthm.2012.07.003

7. Hollender P, Bradway D, Wolf P, Goswami R, Trahey G (2013) Intracardiac acoustic radiation force impulse (ARFI) and shear wave imaging in pigs with focal infarctions. IEEE transactions on ultrasonics, ferroelectrics, and frequency control 60: 1669–1682. Available: http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=6573445.

8. Hollender P, Bradway D, Wolf P, Goswami R, Trahey G (2013) Intracardiac Acoustic Radiation Force Impulse (ARFI) and Shear Wave Imaging in Pigs with Focal Infarctions. IEEE transactions on ultrasonics, ferroelectrics, and frequency control in press.

9. Patel V, Dahl JJ, Bradway DP, Doherty JR, Lee SY, et al. (2014) Acoustic Radiation Force Impulse Imaging (ARFI) on an IVUS Circular Array. Ultrasonic Imaging 36: 98–111. doi:10.1177/0161734613511595

10. Eyerly SA, Bahnson TD, Koontz JI, Bradway DP, Dumont DM, et al. (2014) Contrast in Intracardiac Acoustic Radiation Force Impulse Images of Radiofrequency Ablation Lesions. Ultrasonic Imaging 36: 133–148. doi:10.1177/0161734613519602

11. Hsu SJ, Bradway DP, Fahey BJ, Trahey GE (2007) Transthoracic Acoustic Radiation Force Impulse Imaging of the Cardiac Cycle. In: Ultrasonic measurement and imaging of tissue elasticity.

12. Bradway DP, Hsu SJ, Fahey BJ, Dahl JJ, Nichols TC, et al. (2007) 6B-6 Transthoracic Cardiac Acoustic Radiation Force Impulse Imaging: A Feasibility Study. Ieee. pp. 448–451. Available: http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4409694.

13. Fahey BJ, Nelson RC, Hsu SJ, Bradway DP, Dumont DM, et al. (2007) 6B-4 In Vivo Acoustic Radiation Force Impulse Imaging of Abdominal Lesions. In: 2007 iEEE ultrasonics symposium proceedings. Ieee. pp. 440–443. Available: http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4409692.

14. Bradway DP, Fahey BJ, Nelson RC, Trahey GE (2009) ARFI imaging of abdominal ablation and liver lesion biopsy. In: International symposium on ultrasonic imaging and tissue characterization, 2009. Available: http://uitc-symposium.org/2009_abstracts.pdf.

15. Husarik D, Nelson RC, Bradway DP, Fahey BJ, Nightingale KR, et al. (2009) First Clinical Experience with Sonographic Elastography of the Liver Using Acoustic Radiation Force Impulse (ARFI) Imaging. In: RSNA. Available: http://rsna2009.rsna.org/search.

16. Nelson RC, Bradway DP, Fahey BJ, Trahey GE (2009) Future Application of Ultrasound: Acoustic Radiation Force Impulse (ARFI) Imaging. In: AIUM. Available: http://www.aium.org/loginRequired/membersOnly/proceedings/2009.pdf.

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18. Hsu SJ, Bradway DP, Bouchard RR, Hollender PJ, Wolf PD, et al. (2010) Parametric pressure-volume analysis and acoustic radiation force impulse imaging of left ventricular function. In: 2010 iEEE international ultrasonics symposium. Ieee. pp. 698–701. Available: http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=5935661.

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