

David P Bradway

david.bradway@gmail.com

Birthplace and Date: Canton, Ohio, 1 February 1982

INTERESTS

Front-end development, visualization, data hacking, and signal processing
Engineering role at cleantech startup Plotwatt in mid-to-late 2014

WORK EXPERIENCE

Technical University of Denmark (Kongens Lyngby, Denmark)

Postdoctoral Researcher, 2013 - present

- ▶ Developed OpenCL software for processing 3-D Doppler ultrasound data on the GPU
- ▶ Presenting work at conferences, doing clinical feasibility study, and working to publish results

Duke University (Durham, NC, USA)

Research and Teaching Assistant, 2005 - 2013

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

Siemens Healthcare (Issaquah, WA, USA)

Research Intern, 2008

- ▶ Worked within a busy team in a large, bureaucratic corporate environment
- ▶ Learned version control and automated build systems

EDUCATION

Duke University (Durham, NC, USA)

Ph.D. in Biomedical Engineering, May 2013

The Ohio State University (Columbus, OH, USA)

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

RELEVANT COURSE WORK

Digital Signal Processing
Circuits and Instrumentation
Image Processing and Analysis
Systems and Signals
Statistical Signal Processing
C/C++ Programming

HONORS AND ACTIVITIES

Whitaker International Program Scholar (2013)

National Science Foundation Graduate Research Fellow (2005 - 2008)

Goldwater Research Scholar (2004 - 2005)

Organized engineering design and build trip to Honduran orphanage (2004)

SKILLS

Fluent in several languages and technologies: C/C++, OpenCL, Matlab, MS Office
Used several more on projects: PHP, Ruby, Rails, Perl, Python, LabVIEW, flavors of SQL, HTML
Ability to teach self: for cover letter project learned Javascript (CanvasJS) and RWD CSS
Previous focus on signal and image processing, scientific programming and computing, simulation, experimental design, and statistical analysis
Self-motivated execution of a high-level plan with nominal oversight
Strong verbal communication, data visualization and presentation display skills
Successful writer of fellowships, scholarships, and grant applications

INTERESTS

TED5000 owner. Plotwatt user. Neurio backer. MS Hohm & Google PowerMeter ex-user
Creating tools to close feedback loops, to measure, effect change, and automate it
Personal 'hacking' in mobile/embedded systems: Arduino, Raspberry Pi, Android
Machine learning so computers help us make better informed decisions
Influencing and studying behavior. Economics, the Nudge Unit, Dan Ariely's work

REFEREED PUBLICATIONS:

1. BJ Fahey, RC Nelson, SJ Hsu, DP Bradway, DM Dumont, GE Trahey. In vivo guidance and assessment of liver radio-frequency ablation with acoustic radiation force elastography. *Ultrasound Med Biol.* 2008 Oct; 34(10):1590-1603.
2. BJ Fahey, RC Nelson, DP Bradway, SJ Hsu, DM Dumont, GE Trahey. In vivo visualization of abdominal malignancies with acoustic radiation force elastography. *Phys Med Biol.* 2008 Jan; 53(1):279-93.
3. BJ Fahey, RC Nelson, DP Bradway, SJ Hsu, DM Dumont, GE Trahey. Radiation force elastography of abdominal tumors. *Physics in Medicine and Biology*, 2008
4. KR Nightingale, ML Palmeri, L Zhai, KD Frinkley, M Wang, JJ Dahl, BJ Fahey, SJ Hsu, DP Bradway, GE Trahey. Impulsive acoustic radiation force: imaging approaches and clinical applications. *The Journal of the Acoustical Society of America*, 2008. vol. 123, issue 5, p. 3792
5. KR Nightingale, ML Palmeri, JJ Dahl, DP Bradway, SJ Hsu, RR Bouchard, SJ Rosenzweig, V Rotemberg, M Wang, L Zhai. Elasticity Imaging with Acoustic Radiation Force: Methods and Clinical Applications. *Japanese journal of medical ultrasonics.* 36. 116, 2009
6. PD Wolf, SA Eyerly, DP Bradway, DM Dumont, TD Bahnson, KR Nightingale, and GE Trahey. Near real time evaluation of cardiac radiofrequency ablation lesions with intracardiac echocardiography based acoustic radiation force impulse imaging. *J. Acoust. Soc. Am.* Volume 129, Issue 4, pp. 2438-2438, 2011
7. SA Eyerly, TD Bahnson, JI Koontz, DP Bradway, DM Dumont, GE Trahey, PD Wolf. 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.* 1 November 2012, volume 9 issue 11 Pages 1855-1862
8. PJ Hollender, DP Bradway, PD Wolf, R Goswami, GE Trahey. "Intracardiac Acoustic Radiation Force Impulse (ARFI) and Shear Wave Imaging in Pigs with Focal Infarctions". *Transactions on Ultrasonics, Ferroelectrics, and Frequency Control.* In Press
9. V Patel, JJ Dahl, DP Bradway, JR Doherty, S Smith. Acoustic Radiation Force Impulse Imaging (ARFI) on an IVUS Circular Array. *Ultrasonic Imaging*

NON-REFEREED PROCEEDINGS

1. DP Bradway, SJ Hsu, BJ Fahey, JJ Dahl, TC Nichols, GE Trahey. Transthoracic Cardiac Acoustic Radiation Force Impulse Imaging: A Feasibility Study. *IEEE Ultrasonics Symposium (IUS)*, 2007
2. BJ Fahey, RC Nelson, SJ Hsu, DP Bradway, DM Dumont, GE Trahey. In Vivo Acoustic Radiation Force Impulse Imaging of Abdominal Lesions. *IEEE Ultrasonics Symposium (IUS)*, 2007
3. DP Bradway, BJ Fahey, RC Nelson, GE Trahey. ARFI imaging of abdominal ablation and liver lesion biopsy. *International Symposium on Ultrasonic Imaging and Tissue Characterization*, 2009

4. DB Husarik, RC Nelson, DP Bradway, BJ Fahey, KR Nightingale, GE Trahey. First Clinical Experience with Sonographic Elastography of the Liver Using Acoustic Radiation Force Impulse (ARFI) Imaging. RSNA 2009
5. RC Nelson, DP Bradway, BJ Fahey, GE Trahey. Future Application of Ultrasound: Acoustic Radiation Force Impulse (ARFI) Imaging. AIUM 2009
6. DP Bradway, BJ Fahey, RC Nelson, GE Trahey. Recent Clinical Results of Acoustic Radiation Force Impulse Imaging of Abdominal Ablation. International Tissue Elasticity Conference 2009
7. SJ Hsu, DP Bradway, RR Bouchard, PJ Hollender, PD Wolf, GE Trahey. Parametric pressure-volume analysis and acoustic radiation force impulse imaging of left ventricular function. IEEE Ultrasonics Symposium (IUS), 2010
8. DP Bradway, SJ Hsu, PD Wolf, GE Trahey. Acoustic Radiation Force Impulse Imaging of Acute Myocardial Ischemia and Infarct. International Symposium on Ultrasonic Imaging and Tissue Characterization, 2010
9. DP Bradway, SJ Hsu, PD Wolf, GE Trahey. Transthoracic Acoustic Radiation Force Impulse Imaging of Cardiac Function. International Tissue Elasticity Conference 2010
10. PJ Hollender, RR Bouchard, SJ Hsu, DP Bradway, PD Wolf, GE Trahey. Intracardiac measurements of elasticity using Acoustic Radiation Force Impulse (ARFI) methods: Temporal and spatial stability of shear wave velocimetry. IEEE Ultrasonics Symposium (IUS), 2010
11. DP Bradway, SJ Rosenzweig, JR Doherty, D Hyun, GE Trahey. Recent Results and Advances in Transthoracic Cardiac Acoustic Radiation Force Impulse Imaging. International Symposium on Ultrasonic Imaging and Tissue Characterization, 2011
12. BC Byram, DM Gianantonio, DP Bradway, D Hyun, M Jakovljevic, AL Crowley, HW Kim, M Parker, R Kim, R Judd, GE Trahey. Direct in vivo Myocardial Infarct Visualization Using 3D Ultrasound and Passive Strain Contrast. International Tissue Elasticity Conference 2011
13. BC Byram, DP Bradway, M Jakovljevic, D Gianantonio, D Hyun, AL Crowley, H Kim, L Van Assche, M Parker, R Kim, R Judd, G Trahey. Direct In Vivo Myocardial Infarct Visualization Using 3D Ultrasound and Passive Strain Contrast. IEEE Ultrasonics Symp. 2011
14. DP Bradway, PJ Hollender, R Goswami, PD Wolf, GE Trahey. Transthoracic Cardiac Acoustic Radiation Force Impulse Imaging: in vivo Feasibility, Methods, and Initial Results. International Symposium on Ultrasonic Imaging and Tissue Characterization, 2012
15. PJ Hollender, DP Bradway, R Goswami, PD Wolf, GE Trahey. Acoustic radiation force techniques for imaging cardiac infarct in vivo: methods and initial results, International Symposium on Ultrasonic Imaging and Tissue Characterization, 2012
16. DP Bradway, PJ Hollender, R Goswami, PD Wolf, GE Trahey. Feasibility and Safety of Transthoracic Cardiac Acoustic Radiation Force Impulse Imaging Methods. 2012 IEEE Ultrasonics Symposium.
17. SA Eyerly, T Bahnson, J Koontz, DP Bradway, DM Dumont, GE Trahey, PD Wolf. Confirmation of Cardiac Radiofrequency Ablation Treatment Using Intra-Procedure Acoustic Radiation Force Impulse Imaging, 2012 IEEE Ultrasonics Symposium
18. PJ Hollender, DP Bradway, PD Wolf, Robi Goswami, Gregg Trahey. Intracardiac ARF-driven Shear Wave Velocimetry to Estimate Regional Myocardial Stiffness and Contractility in Pigs with Focal Infarctions. 2012 IEEE Ultrasonics Symposium
19. R Goswami, DP Bradway, J Kisslo, GE Trahey. Novel Application of Acoustic Radiation Force Impulse Imaging in Transthoracic Echocardiography. 2013 American College of Cardiology 62nd Annual Scientific Session
20. V Patel, JJ Dahl, DP Bradway, JR Doherty, S Smith. Acoustic Radiation Force Impulse Imaging (ARFI) on an IVUS Circular Array. 2013 IEEE UFFC Symposium
21. DP Bradway, MJ Pihl, A Krebs, BG Tomov, CS Kjaer, SI Nikolov, JA Jensen. Real-time GPU implementation of transverse oscillation vector velocity flow imaging. 2014 SPIE Medical Imaging