David Pierson Bradway

david.bradway@gmail.com
Birthplace: Canton, Ohio
Birthdate: 1 February 1982

Objective

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

Work Experience

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

Postdoctoral Researcher, 2013 - present

- Developed OpenCL software for processing 3-D Doppler ultrasound data on the GPU
- Conference presentaion, poster, abstracts, and proceedings accepted
- 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
- Developed feature for research mode of Acuson S2000 ultrasound scanner
- Learned version control and IDE management

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.

Relevant Course Work

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

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

Publications

JOURNAL ARTICLES

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.
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.
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.
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.
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.
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.

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. August, 2013.

V Patel, JJ Dahl, DP Bradway, JR Doherty, SY Lee, SW Smith. Acoustic Radiation Force Impulse Imaging (ARFI) on an IVUS Circular Array. Ultrason Imaging. April, 2014 36: 98-111.

SA Eyerly, TD Bahnson, JI Koontz, DP Bradway, DM Dumont, GE Trahey, PD Wolf. Contrast in Intracardiac Acoustic Radiation Force Impulse Images of Radiofrequency Ablation Lesions. Ultrason Imaging. April, 2014. 36: 133-148.

ABSTRACTS AND PROCEEDINGS

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.

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.

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.

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.

RC Nelson, DP Bradway, BJ Fahey, GE Trahey. Future Application of Ultrasound: Acoustic Radiation Force Impulse (ARFI) Imaging. AIUM 2009.

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.

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.

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.

DP Bradway, SJ Hsu, PD Wolf, GE Trahey. Transthoracic Acoustic Radiation Force Impulse Imaging of Cardiac Function. International Tissue Elasticity Conference 2010.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.