
Resume Documentation

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David Pierson Bradway

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DAVID PIERSON BRADWAY

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Birthplace: Canton, Ohio

Birthdate: 1 February 1982

1.1 Objective

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

1.2 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 presentation, 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 automated build systems

1.3 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.

1.4 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

1.5 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)

1.6 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 RST
- 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

1.7 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
- Understanding behavior and decision making: Behavioral Economics, the Nudge Unit, Dan Ariely’s work

1.8 Publications

1.8.1 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.

1.8.2 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.