Jonathan D. Suever, B.S., Ph.D.

Atlanta, Georgia • (256) 682-8627 • suever@gatech.edu • www.suever.net

Education

Doctor of Philosophy *08/2008 – 07/2013*
Georgia Institute of Technology and Emory University, Atlanta, Georgia
Wallace H. Coulter Department of Biomedical Engineering, Bioengineering Program
Dissertation: MRI Methods for Predicting Response to Cardiac Resynchronization Therapy

Bachelor of Science *08/2004 – 05/2008*
University of Alabama at Birmingham, Birmingham, Alabama
Department of Biomedical Engineering
Minor: Mathematics
University Honors, Departmental Honors, *summa cum laude*
Honors Thesis: Conformation and Free Energy Analyses of the Complex of Ca^{2+}-Bound Calmodulin and the Fas Death Domain

Research Experience

Research Scientist I *01/2015 – present*
Cardiovascular Imaging Research Lab
Center for Health Research
Geisinger Health System, Danville, Pennsylvania

Research Assistant Professor *08/2014 – 12/2014*
Cardiovascular Imaging Research Lab
Department of Pediatrics
University of Kentucky, Lexington, Kentucky

Postdoctoral Scholar *08/2013 – 07/2014*
Cardiovascular Imaging Research Lab
Department of Pediatrics
University of Kentucky, Lexington, Kentucky
PI: Brandon K. Fornwalt, M.D., Ph.D., Assistant Professor

Graduate Research Assistant *08/2008 – 07/2013*
Wallace H. Coulter Department of Biomedical Engineering
Department of Radiology and Imaging Sciences
Georgia Institute of Technology and Emory University School of Medicine, Atlanta, Georgia
PI: John N. Oshinski, Ph.D., Associate Professor

Undergraduate Research Assistant *01/2007 – 07/2008*
Department of Biomedical Engineering
University of Alabama at Birmingham, Birmingham, Alabama
PI: Yuhua Song, Ph.D., Assistant Professor

Undergraduate Research Assistant *06/2006 – 09/2006*
Wallace Tumor Institute, Comprehensive Cancer Center
University of Alabama at Birmingham, Birmingham, Alabama
PI: Andrey Frolov, M.D., Ph.D., Assistant Professor

Teaching Experience

Teaching Assistant *01/2010 – 12/2010*
Capstone Design, Wallace H. Coulter Department of Biomedical Imaging
Georgia Institute of Technology, Atlanta, Georgia
Mentored 16 small groups in the design, prototyping, and testing of various biomedical devices

Additional Relevant Experience

Image Processing Consultant *04/2013 – 07/2013*
Scientific Imaging and Visualization, LLC, Atlanta, Georgia
Developed and implemented algorithms for automated tracking of cardiac motion

Honors and Awards

- Society of Cardiovascular MRI Regional Scholarship Award, United States region *01/2014*
- Center for Muscle Biology Fall Retreat Poster Award, University of Kentucky (2nd out of 50) *11/2013*
- Gill Heart Institute Cardiovascular Research Day, poster award (2nd out of 70) *10/2013*
- American Heart Association Pre-doctoral Fellowship (Greater Southeast Affiliate), Declined *06/2010*
- Graduate Research Fellowship, National Science Foundation *05/2010*
- T32 Training Grant Trainee, National Institutes of Health *05/2009*
- President's Fellowship, Georgia Institute of Technology *08/2008*
- Engineering and University Honors from the University of Alabama at Birmingham *05/2008*
- Mr. & Mrs. Kwok-Chong Woo Grant, University of Pittsburgh *10/2007*
- Tau Beta Pi, Engineering Honor Society *08/2006*
- Jane Knight Lowe Memorial Scholarship, University of Alabama at Birmingham *08/2004*

Publications

[1] **Suever JD**, Chen Y, McDonald JM, Song Y. Conformation and free energy analyses of the complex of calcium-bound calmodulin and the Fas death domain. *Biophysical Journal*, 2008;95(12):5913–21.

[2] Fornwalt BK, Sprague WW, BeDell P, **Suever JD**, Gerritse B, Merlino JD, Fyfe DA, León AR, Oshinski JN. Agreement is poor among current criteria used to define response to cardiac resynchronization therapy. *Circulation*, 2010;121(18):1985–91.

[3] **Suever JD**, Watson PJ, Eisner RL, Lerakis S, O'Donnell RE, Oshinski JN. Time-resolved analysis of coronary vein motion and cross-sectional area. *Journal of Magnetic Resonance Imaging*, 2011;34(4):811–5.

[4] **Suever JD**, Oshinski J, Rojas-Campos E, Huneycutt D, Cardarelli F, Stillman AE, Raggi P. Reproducibility of pulse wave velocity measurements with phase contrast magnetic resonance and applanation tonometry. *The International Journal of Cardiovascular Imaging*, 2012;28(5):1141–6.

[5] Campbell IC, Weiss D, **Suever JD**, Virmani R, Veneziani A, Vito R, Oshinski JN, Taylor RW. Biomechanical modeling and morphology analysis indicates plaque rupture due to mechanical failure unlikely in atherosclerosis-prone mice. *American Journal of Physiology: Heart and Circulation Physiology*, 2013;304(3):473–86.

[6] Levit RD, Landazuri N, Phelps EA, Brown ME, Garcia A, Davis ME, Joseph G, Long R, Safley SA, **Suever JD**, Lyle AN, Weber CJ, Taylor WR. Cellular encapsulation enhances cardiac repair. *Journal of the American Heart Association*, 2013;2(5):1–11.

[7] **Suever JD**, Fornwalt BK, Neuman LR, Delfino JG, Lloyd MS, Oshinski JN. Method to create regional mechanical dyssynchrony maps from short-axis cine steady-state free-precession images. *Journal of Magnetic Resonance Imaging*, 2013;16(4):4.

[8] Timmins LH, **Suever JD**, Eshtehardi P, McDaniel MC, Oshinski JN, Samady H, Giddens DP. Framework to co-register longitudinal virtual histology-intravascular ultrasound data in the circumferential direction. *IEEE Transactions on Medical Imaging*, 2013;32(11):1989–96.

[9] Campbell IC, **Suever JD**, Timmins LH, Veneziani A, Vito RP, Virmani R, Oshinski JN, Taylor RW. Biomechanics and inflammation in atherosclerotic plaque erosion and plaque rupture: Implications for cardiovascular events in women. *PLOS ONE*, 2014;9(11).

[10] Jing L, Haggerty CM, **Suever JD**, Prakash A, Cecchin F, Skrinjar O, Geva T, Powell AJ, Fornwalt BK. Patients with repaired tetralogy of fallot suffer from intra- and inter-ventricular cardiac dyssynchrony: A cardiac magnetic resonance study. *European Heart Journal - Cardiovascular Imaging*, 2014;15(12):1333–43.

[11] **Suever JD**, Hartlage GR, Magrath RP, Iravanian S, Lloyd MS, Oshinski JN. Relationship between mechanical dyssynchrony and intra-operative electrical delay times in patients undergoing cardiac resynchronization therapy. *Journal of Cardiovascular Magnetic Resonance*, 2014;16(1):4.

[12] **Suever JD**, Wehner GW, Haggerty CM, Jing L, Hamlet MS, Binkley CM, Kramer SP, Mattingly AC, Powell DK, Bilchick KC, Epstein FH, Fornwalt BF. Simplified post-processing of cine DENSE MRI for quantification of cardiac mechanics. *Journal of Cardiovascular Magnetic Resonance*, 2014;16(94):1–10.

[13] Haggerty CM, Mattingly AC, Kramer SP, Binkley CM, Jing L, **Suever JD**, Powell DK, Charnigo RJ, Epstein FH, Fornwalt BK. Left ventricular mechanical dysfunction in diet–induced obese mice is exacerbated during inotropic stress: a cine DENSE CMR study. *Journal of Cardiovascular Magnetic Resonance*, 2015;17:75.

[14] Hartlage GR, **Suever JD**, Clement-Guinaedeau S, Strickland PT, Ghasemzadeh N, Magrath RP, Parikh A, Lerakis S, Hoskins MH, Leon AR, Lloyd MS, Oshinski JN. Prediction of response to cardiac resynchronization therapy using left ventricular pacing lead position and cardiovascular magnetic resonance–derived wall motion patterns: a prospective cohort study. *Journal of Cardiovascular Magnetic Resonance*, 2015;17:57.

[15] Wehner GJ, Grabau JD, **Suever JD**, Haggerty CM, Jing L, Powell DK, Hamlet SM, Vandsburger MH, Zhong X, Fornwalt BK. 2D cine DENSE with low encoding frequencies accurately quantifies cardiac mechanics with improved image characteristics. *Journal of Cardiovascular Magnetic Resonance*, 2015;17(1):93.

[16] Wehner GJ, **Suever JD**, Haggerty CM, Jing L, Powell DK, Hamlet SM, Grabau JD, Mojsejenko WD, Zhong X, Epstein FH, Fornwalt BK. Validation of in vivo 2D displacements from spiral cine DENSE at 3T. *Journal of Cardiovascular Magnetic Resonance*, 2015;17(1):5.

[17] Hamlet SM, Haggerty CM, D SJ, J WG, Grabau JD, Andres KN, Vandsburger MH, Powell DK, Sorrell VL, Fornwalt BK. An interactive videogame designed to improve respiratory navigator efficiency in children undergoing cardiovascular magnetic resonance study. *Journal of Cardiovascular Magnetic Resonance*, 2016;18(1):54.

[18] Jing L, Binkley CM, **Suever JD**, Umasankar N, Haggerty CM, Rich J, Wehner GJ, Hamlet SM, Powell DK, Radulescu A, Kirchner HL, Epstein FH, Fornwalt BK. Cardiac remodeling and dysfunction in childhood obesity: a cardiovascular magnetic resonance study. *Journal of Cardiovascular Magnetic Resonance*, 2016;18(1):28.

[19] Jing L, Wehner GJ, **Suever JD**, Charnigo RJ, Alhadad S, Stearns E, Mojsejenko D, Haggerty CM, Hickey K, Valente AM, Geva T, Powell AJ, Fornwalt BK. Left and right ventricular dyssynchrony and strains from cardiovasuclar magnetic resonance feature tracking do not predict deterioration of ventricular function in patients with repaired tetralogy of fallot. *Journal of Cardiovascular Magnetic Resonance*, 2016;18(1):49.

[20] Ferreira PF, Nielles-Vallespin S, Scott AD, de Silva R, Kilner PJ, Ennis DB, Auger DA, **Suever JD**, Zhong X, Spottiswoode BS, Pennell DJ, Arai AE, Firmin DN. Evaluation of the impact of strain correction on the orientation of cardiac diffusion tensors with in vivo and ex vivo porcine hearts. *Magnetic Resonance in Medicine*, 2017;79(4).

[21] Haggerty CH, **Suever JD**, Pulenthiran A, Mejia-Spiegeler A, Wehner GJ, Jing L, Charnigo RJ, Fornwalt BK, Fogel MA. Association between left ventricular mechanics and diffuse myocardial fibrosis in patients with repaired tetralogy of fallot: a cross-sectional study. *Journal of Cardiovascular Magnetic Resonance*, 2017;19(1):100.

[22] Hamlet SM, Haggerty CM, **Suever JD**, Wehner GJ, Andres KN, Powell DK, Charnigo RJ, Fornwalt BK. Using a respiratory navigator significantly reduces variability when quantifying left ventricular torsion with cardiovascular MRI. *Journal of Cardiovascular Magnetic Resonance*, 2017;19(1):25.

[23] Hamlet SM, Haggerty CM, **Suever JD**, Wehner GJ, Andres KN, Powell DK, Zhong X, Fornwalt BK. Optimal configuration of respiratory navigator gating for the quantification of left ventricular strain using spiral cine displacement encoding with stimulated echoes (DENSE) MRI. *Journal of Magnetic Resonance Imaging*, 2017; 45(3):786–794.

[24] Jing L, Nevius CD, Friday CM, **Suever JD**, Pulenthiran A, Mejia-Spiegeler A, Kirchner L, Cochran WJ, Wehner GJ, Chishti AS, Haggerty CM, Fornwalt BK. Ambulatory systolic blood pressure and obesity are independently associated with left ventricular hypertrophic remodeling in children. *Journal of Cardiovascular Magnetic Resonance*, 2017;19(1):86.

[25] Jing L, Pulenthiran A, Nevius CD, Mejia-Spiegeler A, **Suever JD**, Wehner GJ, Kirchner HL, Haggerty CM, Fornwalt BK. Impaired right ventricular contractile function in childhood obesity and its association with right and left ventricular changes: a cine DENSE cardiac magnetic resonance study. *Journal of Cardiovascular Magnetic Resonance*, 2017;19(1):49.

[26] **Suever JD**, Wehner GJ, Jing L, Powell DK, Hamlet SM, Grabau JD, Mojsejenko D, Andres KN, Haggerty CM, Fornwalt BK. Right ventricular strain, torsion, and dyssynchrony in healthy subjects using 3D spiral cine DENSE magnetic resonance imaging. *IEEE Transactions on Medical Imaging*, 2017;36(5):1076–1085.

[27] Patel A, Arbabshirani M, Fornwalt BK, **Suever JD**, Geise B, Moore G. Advanced machine learning in action: Identification of intracranial hemorrhage on computed tomography scans of the head with clinical workflow integration. *npj Digital Medicine*, 2018;1(1).

[28] Wehner GJ, Jing L, Haggerty CM, **Suever JD**, Chen J, Hamlet SM, Feindt JA, Mojsejenko WD, Fogel MA, Fornalt BK. Comparison of left ventricular strains and torsion derived from feature tracking and DENSE CMR. *Journal of Cardiovascular Magnetic Resonance*, 2018;20(1).

[29] Wehner GJ, **Suever JD**, Fielden SW, Powell DK, Hamlet SM, Vandsburger MH, Haggerty CM, Zhong X, Fornwalt B. Typical readout durations in spiral cine DENSE yield blurred images and underestimate cardiac strains at both 3.0 T and 1.5 T. *Magnetic Resonance Imaging*, 2018;54.

Conference Proceedings

[1] **Suever JD**, Chen Y, McDonald JM, Song Y. Conformation and free energy analyses of the complex of Ca^{2+} bound calmodulin and the fas death domain. Southeastern Meeting of the American Society of Biomechanics, Birmingham, Alabama. April 2008.

[2] **Suever JD**, Huneycutt D, Rojas-Campos E, Cardarelli F, Panderer A, Fielden S, Stillman AE, Raggi P, Oshinski JN. Reproducibility of aortic pulse wave velocity measurements obtained with phase contrast magnetic resonance (PCMR) and applanation tonometry. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Orlando, Florida. February 2009.

[3] **Suever JD**, Rojas-Campos E, Huneycutt D, Cardarelli F, Stillman AE, Raggi P, Oshinski JN. Reproducibility of pulse wave velocity measurements with phase contrast magnetic resonance and applanation tonometry. International Society of Magnetic Resonance in Medicine, Stockholm, Sweden. May 2010.

[4] Watson PJ, **Suever JD**, Oshinski JN. Analysis of coronary sinus motion and cross-sectional area using cine MRI. American Society of Mechanical Engineers, Summer Bioengineering Conference, Naples, Florida. June 2010.

[5] Watson PJ, **Suever JD**, Oshinski JN. Analysis of coronary vein motion: Implications for mr coronary vein venography. International Society of Magnetic Resonance in Medicine, Stockholm, Sweden. May 2010.

[6] Chan L, **Suever JD**, Fornwalt BK, Clement-Guinaedeau S, D'Andrea A, DelViscovo L, Prinzen F, Bracke F, Leon A, Delurgio D, Lloyd MS, Oshinski JN. Presence of transmural posterolateral scar by LGE MRI is associated with non-response to CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. February 2011.

[7] Clement-Guinaedeau S, Neuman L, Fornwalt BK, **Suever JD**, Brummer M, Sallee D, Parks WJ, Oshinski JN. Internal flow fraction as a potential indicator of pulmonary valve replacement in tetralogy of fallot patients. Frontiers of Biomedical Imaging Science, Nashville, Tennessee. June 2011.

[8] **Suever JD**, Janick MJ, Lerakis S, Oshinski JN. User-dependence of myocardial infarct identification using semi-automated thresholding techniques: Implications for CRT response predictions based on scar burden. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. February 2011.

[9] **Suever JD**, Watson PJ, Lerakis S, Eisner R, O'Donnell R, Oshinski JN. Characterization of coronary vein motion for coronary vein imaging. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. February 2011.

[10] **Suever JD**, Watson PJ, Oshinski JN. Coronary vein imaging is optimal during the systolic rest period in CRT patients. International Society of Magnetic Resonance in Medicine, Montreal, Quebec, Canada. May 2011.

[11] Clement-Guinaedeau S, **Suever JD**, D'Andrea A, Prinzen F, Lloyd MS, Leon AR, Oshinski JN. Left ventricular internal flow fraction from cardiac magnetic resonance images is higher in patients who respond to cardiac resynchronization therapy. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Orlando, Florida. February 2012.

[12] Hartlage GR, **Suever JD**, Magrath RP, Lerakis S, Iravanian S, Oshinski JN, Lloyd MS. Cardiovascular magnetic resonance mechanical dyssynchrony analysis and left ventricular electrical activation patterns during intrinsic conduction and right ventricular pacing. American College of Cardiology, Georgia Chapter, Annual Scientific Meeting, Lake Oconee, Georgia. November 2012.

[13] Levit R, Landazuri N, Phelps EA, Brown ME, Garcia A, Davis ME, Joseph G, Long R, Safley SA, **Suever JD**, Lyle AN, Weber CJ, Taylor WR. Cellular encapsulation of mesenchymal stem cells enhances cardiac repair in a rat model of myocardial infarction. American Heart Association Scientific Sessions, Los Angeles, California. November 2012.

[14] **Suever JD**, Fornwalt BK, Lloyd MS, Oshinski JN. A method to determine regional mechanical left ventricular dyssynchrony based on high temporal resolution short axis SSFP cine images. International Society of Magnetic Resonance in Medicine, Flow and Motion Workshop, Orlando, Florida. February 2012.

[15] **Suever JD**, Fornwalt BK, Lloyd MS, Oshinski JN. Characterization of the size and location of dyssynchronous regions in patients undergoing CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Orlando, Florida. February 2012.

[16] Timmins LH, **Suever JD**, Eshtehardi P, McDaniel MC, Samady H, Oshinski JN, Giddens DP. Correlation of longitudinal intravascular ultrasound data for the clinical assessment of coronary artery disease progression. American Society of Mechanical Engineers, Summer Bioengineering Conference, Fajardo, Puerto Rico. June 2012.

[17] Timmins LH, **Suever JD**, Eshtehardi P, McDaniel MC, Samady H, Oshinski JN, Giddens DP. Framework to co-register VH-IVUS data for regional quantification of CAD progression. International Symposium on Biomechanics in Vascular Biology and Cardiovascular Disease, Atlanta, Georgia. April 2012.

[18] Chen J, Zhou W, **Suever JD**, Oshinski JN, Garcia E. Development of a novel quantification tool to measure transmural scar border zone by resting tc-99m SPECT myocardial perfusion imaging. Society of Nuclear Medicine and Molecular Imaging Annual Meeting, Vancouver, British Columbia. June 2013.

[19] Hartlage GR, **Suever JD**, Magrath RP, Lerakis S, Iravanian S, Oshinski JN, Lloyd MS. Correlation of CMR mechanical dyssynchrony maps and intraoperative electrical activation patterns for cardiac resynchronization therapy. American College of Cardiology, San Francisco, California. March 2013.

[20] Jing L, Haggerty CM, **Suever JD**, Prakesh A, Geva T, Powell AJ, Fornwalt BK. Patients with repaired tetralogy of fallot have multiple forms of dyssynchrony in the heart: A cine magnetic resonance study. American Heart Association Scientific Sessions, Dallas, Texas. November 2013.

[21] Piccinelli M, Zhou W, Chen J, Cooke D, Oshinski JN, **Suever JD**, Quyyumi AA, Garcia EV. Automated image registration of LGE-MR imaging and tc-99m SPECT myocardial perfusion for validation of scar quantification. American Society of Nuclear Cardiology Scientific Sessions, Chicago, Illinois. September 2013.

[22] **Suever JD**, Hartlage GR, Iravanian S, Lloyd MS, Oshinski JN. Relationship between MRI-based mechanical activation delays and direct intraoperative measurements of electrical delay in patients undergoing cardiac resynchronization. Society of Cardiovascular Magnetic Resonance Scientific Sessions, San Francisco, California. February 2013.

[23] **Suever JD**, Magrath RP, Lloyd MS, Oshinski JN. Identification of the size and location of dyssynchronous regions in patients undergoing CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, San Francisco, California. February 2013.

[24] Hamlet SM, Wehner GJ, **Suever JD**, Powell D, Haggerty CM, Jing L, Zhong X, Epstein FH, Fornwalt BK. Effect of variable breath-hold positions during cardiac magnetic resonance on measures of left ventricular mechanics. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[25] Hartlage GR, **Suever JD**, Clement-Guinaedeau S, Strickland PT, Magrath RP, Lloyd MS, Oshinski JN. Presence of a CMR-based U-shaped contraction pattern and optimal LV pacing lead position determines best response to CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[26] Jing L, Haggerty CM, **Suever JD**, Prakesh A, Cecchin F, Skrinjar O, Geva T, Powell AJ, Fornwalt BK. Assessment of intra- and inter-ventricular cardiac dyssynchrony in patients with repaired tetralogy of fallot: A cardiac magnetic resonance study. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[27] Magrath RP, **Suever JD**, van der Geest RJ, Oshinski JN. Evaluation of automated contour detection to produce regional delay maps from high temporal resolution cine images in patients undergoing CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[28] **Suever JD**, Hartlage GR, Clement-Guinaedeau S, Lloyd MS, Oshinski JN. A new method for accurate localization of the LV pacing lead from fluoroscopy images to MRI images: Application to studies involving lead placement and CRT. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[29] **Suever JD**, Hartlage GR, Magrath RP, Iravanian S, Lloyd MS, Oshinski JN. Regions of latest mechanical contraction correspond to regions of latest electrical activation: An electro-mechanical coupling study in patients undergoing cardiac resynchronization therapy. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[30] **Suever JD**, Wehner GJ, Jing L, Powell D, Haggerty CM, Zhong X, Epstein FH, Fornwalt BK. Quantification of right ventricular function from short-axis displacement-encoded images. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[31] **Suever JD**, Wehner GJ, Jing L, Powell D, Haggerty CM, Zhong X, Epstein FH, Fornwalt BK. Two-dimensional estimates of left ventricular strains are significantly affected by through-plane motion. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[32] Wehner GJ, **Suever JD**, Haggerty CM, Jing L, Powell D, Zhong X, Epstein FH, Fornwalt BK. High resolution cine displacement encoding with stimulated echoes (DENSE) at 3T with navigator feedback for quantification of cardiac mechanics. Society of Cardiovascular Magnetic Resonance Scientific Sessions, New Orleans, Louisiana. January 2014.

[33] Binkley CM, Jing L, **Suever JD**, Umasankar N, Wehner GJ, Hamlet SM, Powell DK, Radulescu A, Epstein FH, Fornwalt BK. Children with obesity have cardiac remodeling and dysfunction: a cine DENSE magnetic resonance imaging study. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[34] Grabau JD, Wehner GJ, **Suever JD**, Haggerty CM, Jing L, Powell DK, Hamlet SM, Zhong X, Epstein FH, Fornwalt BK. Low encoding frequencies accurately quantify cardiac mechanics while minimizing phase wrapping in 2D cine DENSE with through–plane dephasing. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[35] Haggerty CM, Mattingly AC, Binkley CM, Kramer SP, Jing L, **Suever JD**, Powell DK, Charnigo RJ, Epstein FH, Fornwalt BK. Left ventricular mechanical dysfunction in obesity is exacerbated during inotropic stress cine DENSE CMR in mice. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[36] Hamlet SM, Andres K, Wehner GJ, **Suever JD**, Powell D, Zhong X, Epstein FH, Fornwalt BK. Patient–specific variability in breath–hold positions during cardiac magnetic resonance imaging has a negligible effect on measures of cardiac mechanics. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[37] Hamlet SM, Andres K, Wehner GJ, **Suever JD**, Powell DK, Zhong X, Epstein FH, Fornwalt BK. The effect of respiratory gating strategy on left ventricular cardiac strains with DENSE. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[38] Jing L, Friday CM, **Suever JD**, Charnigo RJ, Alhadad S, Stearns E, Mojsejenko D, Haggerty CM, Hickey K, Valente AM, Geva T, Powell AJ, Fornwalt BK. Cardiac dyssynchrony and strain do not predict deterioration of ventricular function in patients with repaired tetralogy of fallot. American Heart Association Scientific Sessions, Orlando, Florida. November 2015.

[39] Jing L, Friday CM, **Suever JD**, Umasankar N, Haggerty CM, Wehner GJ, Hamlet SM, Powell DK, Radulescu A, Kirchner HL, Epstein FH, Fornwalt BK. Obese children with concentric hypertrophy and impaired cardiac strain: a potentially high-risk subgroup identified with cardiac magnetic resonance. American Heart Association Scientific Sessions, Orlando, Florida. November 2015.

[40] Wehner GJ, **Suever JD**, Haggerty CM, Jing L, Powell DK, Hamlet SM, Grabau JD, Mojsejenko D, Zhong X, Epstein FH, Fornwalt BK. Validation of *in vivo* 2D displacements from spiral cine DENSE at 3T. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Nice, France. January 2015.

[41] Haggerty CM, Feindt JA, Mojsejenko D, Wehner GJ, **Suever JD**, Fogel MA, Fornwalt BK. Differences in left ventricular strain measurements between cine DENSE cardiac magnetic resonance and SSFP feature tracking. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Los Angeles, California. January 2016.

[42] Haggerty CM, Mejia-Spiegeler A, **Suever JD**, Wehner GJ, Fornwalt BK, Fogel MA. Association between myocardial T1-mapping and left ventricular mechanics in patients with repaired tetralogy of fallot. American Heart Association Scientific Sessions, New Orleans, Louisiana. November 2016.

[43] Hamlet SM, **Suever JD**, Grabau JD, Wehner GJ, Vandsburger MH, Andres KN, Powell DK, Sorrell VL, Fornwalt BK. An interactive videogame designed to optimize respiratory navigator efficiency in children undergoing cardiac magnetic resonance. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Los Angeles, California. January 2016.

[44] Jing L, **Suever JD**, Charnigo RJ, Alhadad S, Stearns E, Mojsejenko D, Haggerty CM, Hickey K, Valente AM, Geva T, Powell AJ, Fornwalt BK. Association of ventricular dyssynchrony and strain with cardiac function in patients with repaired tetralogy of Fallot. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Los Angeles, California. January 2016.

[45] **Suever JD**, Wehner GJ, Haggerty CM, Jing L, Powell DK, Hamlet SM, Grabau JD, Mojsejenko D, Andres K, Vandsburger MH, Fornwalt BK. Biventricular cardiac mechanics in healthy subjects using 3D spiral cine DENSE and mesh-free strain analysis. International Society of Magnetic Resonance in Medicine, Singapore. May 2016.

[46] **Suever JD**, Wehner GJ, Haggerty CM, Jing L, Powell DK, Hamlet SM, Grabau JD, Mojsejenko D, Andres K, Vandsburger MH, Fornwalt BK. Right ventricular strain, torsion and synchrony in healthy subjects using 3D spiral cine DENSE. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Los Angeles, California. January 2016.

[47] Ferreira P, Nielles-Vallespin S, de Silva R, Scott AD, Ennis D, Auger D, **Suever JD**, Zhong X, Spottiswoode B, Pennell D, Arai A, Firmin D. Study on the impact of strain correction on the secondary eigenvector of diffusion with *in vivo* and *ex vivo* porcine hearts. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[48] Haggerty CM, Mejia-Spiegeler A, **Suever JD**, Wehner GJ, Charnigo RJ, Fornwalt BK, Fogel MA. Associations between myocardial T1-mapping and left ventricular strain, strain rate, and dyssynchrony in patients with repaired tetralogy of fallot. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[49] Hamlet SM, Haggerty CM, **Suever JD**, Wehner GJ, Andres KN, Powell DK, Charnigo RJ, Fornwalt BK. Using a respiratory navigator significantly reduces variability when quantifying left ventricular torsion from CMR. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[50] Jing L, Nevius CD, Friday CM, **Suever JD**, Mejia-Spiegeler A, Wehner GJ, Chishti AS, Haggerty CM, Fornwalt BK. Association of ambulatory blood pressure and insulin resistance with cardiac remodeling in obese children. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[51] Jing L, **Suever JD**, Skrinjar O, Charnigo RJ, Valente AM, Geva T, Powell AJ, Fornwalt BK. Cardiac mechanics derived from three-dimensional feature tracking independently correlate with changes in ventricular size and function over time in patients with repaired tetralogy of fallot. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[52] Pulenthiran AA, Jing L, **Suever JD**, Wehner GJ, Nevius CD, Mejia-Spiegeler A, Haggerty CM, Fornwalt BK. Right ventricular strain from displacement encoding with stimulated echoes CMR is reduced in overweight and obese children. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[53] **Suever JD**, Wehner GJ, Jing L, Hamlet SM, Haggerty CM, Fornwalt BK. Polar processing of cine displacement encoding with stimulated echoes (DENSE) data provides more accurate quantification of cardiac mechanics than traditional cartesian analysis. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[54] Wehner GJ, Haggerty CM, **Suever JD**, Jing L, Leader JB, Fornwalt BK. Prediction of all-cause mortality from clinical CMR-derived left ventricular ejection fraction: 15 years of data from a large regional health system. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

[55] Wehner GJ, **Suever JD**, Fielden SW, Powell DK, Hamlet SM, Vandsburger MH, Haggerty CM, Zhong X, Fornwalt BK. Typical readout durations in spiral cine DENSE produce blurred images and underestimate radial strain at both 3.0T and 1.5T. Society of Cardiovascular Magnetic Resonance Scientific Sessions, Washington D.C. February 2017.

Invited Talks and Presentations

[1] **Suever JD**. Mechanical Dyssynchrony – Assessing Heart Failure and Improving Cardiac Resynchronization Therapy. Technologist Workshop, Society of Cardiovasular Magnetic Resonance Scientific Sessions, Orlando, Florida. February 2012.

[2] **Suever JD**. New method to validate *in–vivo* displacements from spiral cine DENSE at 3T . Flow and Motion Workshop, International Society for Magnetic Resonance in Medicine, Toronto, Ontario, Canada. June 2015.

[3] **Suever JD**. Update on DENSE from the Cardiac Imaging Research Laboratory . International DENSE User's Meeting, Toronto, Ontario, Canada. June 2015.

Research Support

Graduate Research Fellowship, National Science Foundation *2010 – 2013*
Title: MRI-based Methods for Prediction of Response to Cardiac Resynchronization Therapy
Goal: Develop the methodology to assess factors that determine a patient's response to cardiac resynchronization therapy (CRT) and incorporate this information into an MRI-based patient selection tool that can be used to predict response to CRT and identify the ideal pacing lead location.
Award: $90,000
Role: Principal Investigator

T32 Training Grant (T32 EB005969), National Institutes of Health *2009 – 2010*
Title: Optimizing Contrast-Enhanced Magnetic Resonance Imaging of the Coronary Veins
Goal: Develop a computational model of the intra-vascular contrast agent concentration that incorporates injection rates, cardiac physiology, molecular diffusion, and MRI acquisition timing in an effort to optimize a protocol for acquisition and visualization of coronary vein anatomy in three dimensions.
PI: Xiaoping Hu, Ph.D.
Role: Trainee

Mr. & Mrs. Kwok-Chong Woo Research Grant, University of Pittsburgh *2007 – 2008*
Title: Molecular Insight into the Apoptotic Pathway of Osteoclasts Using Molecular Dynamic Simulations
Goal: Utilize molecular dynamics simulations to observe the molecular-level interactions between CaM and various Fas mutations to better understand the function of CaM in the regulation of Fas-mediated apoptosis.
Award: $3,000
Role: Principal Investigator

Mentoring

Graduate Research Mentees

- Sean Hamlet, MS — *2013 – Present*
- Gregory Wehner, BS — *2013 – Present*
- Cassi Binkley Friday, BA — *2013 – 2015*

Undergraduate Research Mentees

- R. Patrick Magrath — *2012 – 2013*
- Leslie Chan — *2010*
- Pierre Watson — *2009 – 2010*

Scientific and Professional Activities

- Member, Tau Beta Pi Engineering Honor Society — *2006 – Present*
- Member, Society of Cardiovascular Magnetic Resonance — *2008 – Present*
- Member, International Society for Magnetic Resonance in Medicine — *2008 – Present*
- Reviewer, Manning Publications Co. — *2013 – Present*
- Reviewer, *Journal of the American College of Cardiology: Cardiovascular Imaging* — *2015 – Present*
- Reviewer, *Journal of Cardiovascular Magnetic Resonance* — *2015 – Present*
- Reviewer, *Nuclear Magnetic Resonance in Biomedicine* — *2015 – Present*