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GENERAL INFORMATION

Current Position

Mr. & Mrs. Bruce Donnellan & Family Endowed Professor, Department of Electrical and Computer Engineering
Professor, Department of Psychology
Director, Auburn University Magnetic Resonance Research Imaging Center
Auburn University
Co-Director, Alabama Advanced Imaging Consortium

Research Interests

Ultra-high field magnetic resonance imaging (MRI), cardiovascular MRI, image analysis, image processing, deformable motion estimation, computed tomography, biomedical imaging, computer/robot vision, modeling/estimation of multi-dimensional stochastic processes, inverse problems, mathematical modeling and simulation, data visualization.

EDUCATION

B.S. 1985, Electrical Engineering, Auburn University (Summa Cum Laude)
M.S. 1990, Electrical Engineering, Auburn University
Ph.D. 1994, Electrical and Computer Engineering, The Johns Hopkins University

EMPLOYMENT

Electrical Engineer, IBM Corporation, 1985-1986.
Marketing Representative, IBM Corporation, 1986-1988.
Teaching/Research Assistant, Auburn University, 1989-1990.
Member of Summer Staff, Johns Hopkins University Applied Physics Laboratory, 1990.
Teaching/Research Assistant, The Johns Hopkins University, 1990-1994.
Assistant Professor, Auburn University, Electrical Engineering Department, 1994-1999.
Associate Professor, Auburn University, Electrical and Computer Engineering Department, 1999 – 2006.
Professor, Auburn University, Electrical and Computer Engineering Department, 2006 – present.
Director, Auburn University Magnetic Resonance Research Imaging Center, 2009 – present.
Ed and Peggy Reynolds Family Endowed Professor, Electrical and Computer Engineering Department, 2010 – 2015.

Professor, Courtesy Joint Appointment, Department of Psychology, 2011 – present.
Co-Director, Alabama Advanced Imaging Consortium, 2015 – present
Mr. & Mrs. Bruce Donnellan & Family Endowed Professor, Electrical and Computer Engineering Department, 2016 – present.

HONORS AND AWARDS

Central Bank Scholarship, 1985.
IEEE Signal Processing Society 1996 Young Author Best Paper Award (Image and Multidimensional Signal Processing Area).
Auburn University Panhellenic Council Outstanding Professor, Winter Quarter 1999.
Outstanding Faculty Member 1999-2000, Department of Electrical and Computer Engineering, Auburn University
Outstanding Faculty Member 1999-2000, College of Engineering, Auburn University
Fred H. Pumphrey Outstanding Teaching Award, 1999-2000, College of Engineering, Auburn University
Walker Merit Teaching Award, 2000-2001.
Ed and Peggy Reynolds Family Endowed Professorship, 2010
B.F Hoerlein Memorial Faculty Research Award (Joint Award with Ray Dillon), 2013.
Mr. & Mrs. Bruce Donnellan & Family Endowed Professor, 2016

PROFESSIONAL ACTIVITIES

Editorial Boards

Associate Editor, SPIE Journal of Electronic Imaging (2004-2010).
Associate Editor, IEEE Transactions on Image Processing (2005-2008).

Technical Committees

Member, IEEE Bio Imaging and Signal Processing (BISP) Technical Committee (2007-2010)

Conference Organization

Session Chair, 16th Southern Biomedical Engineering Conference
Session Chair, 2002 IEEE International Symposium on Biomedical Imaging
Session Chair, 10th Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) 2002
Session Chair, Computational Imaging II Conference, SPIE Electronic Imaging (EI) 2004
Publications Chair, 2004 IEEE International Symposium on Biomedical Imaging
Track Chair (Cardiac Imaging), 2004 IEEE Engineering in Medicine and Biology Society Conference
Program Committee, Computational Imaging II Conference, SPIE Electronic Imaging (EI) 2004
Program Committee, Computational Imaging III Conference, SPIE Electronic Imaging (EI) 2005
Session Chair, Computational Imaging III Conference, SPIE Electronic Imaging (EI) 2005
Steering Committee, IEEE International Symposium on Biomedical Imaging (2005 - 2006)
Program Committee, Computational Imaging IV Conference, SPIE Electronic Imaging (EI) 2006
Program Committee, 2006 IEEE International Symposium on Biomedical Imaging
Technical Program Chair, 2007 IEEE International Symposium on Biomedical Imaging

NIH Study Sections

- Special Emphasis Panel for Review of Applications for National Centers of Biomedical Computing-ZRG1 BST-A(55)R, May 26-27, 2004.
- Bioengineering Partnership Study Section, Special Emphasis Panel/Scientific Review Group 2005/10 ZRG1 SBIB-J (50) (R) June 13, 2005.
- Member, NIH Small Business Medical Imaging Study Section, (2007-2017).
- Temporary Member, NIH Imaging Technology Development (ITD), February 12-13, 2019.
- Member, Bioengineering, Technology, and Surgical Sciences (BTSS) / Surgery, Anesthesiology and Trauma (SAT)
- Member Conflict Study Section August 6 and November 1 2019.

NSF Panels

- Smart Cities and Smart Health Preliminary Proposal Panel (NSF 19-503 ERC Competition), February 27-28, 2019.

Journal, Conference, and Textbook Reviewing

Reviewer for IEEE Transactions on Medical Imaging

Reviewer for IEEE Transactions on Image Processing

Reviewer for IEEE Transactions on Industrial and Electronic Systems

Book reviewer for McGraw-Hill and McGraw-Hill/Irwin.

Reviewer for the IEEE Industrial Electronics Conference (IECON) 1995-1999.

Reviewer for CDC'96

Member of the 1997 IEEE International Conference on Image Processing (ICIP'97) Program Committee

Reviewer for the Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) 1997-2004.

Professional Society Memberships

Member of IEEE

Member of IEEE Signal Processing Society

Member of IEEE Engineering in Medicine and Biology Society

Member of the International Society for Magnetic Resonance in Medicine (ISMRM)

UNIVERSITY COMMITTEES

College of Engineering Graduate Faculty Membership Committee

University Academic Honesty Committee

Chair, University Library Committee

University Campus Planning Committee

University Scholarship Committee

PUBLICATIONS

Refereed Journals

1. T.S. Denney Jr. and M.E. Greene, "On State Estimation for an Orbiting Single Tether System," *IEEE Trans. on Aerospace and Electronic Systems*, vol. 27, no. 4, pp. 689-695, July, 1991.
2. M.E. Greene and T.S. Denney Jr., "Real-Time Estimator for Control of an Orbiting Single Tether System," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 27, no. 6, pp. 880-883, November, 1991.
3. T.S. Denney Jr. and J.L. Prince, "Optimal Brightness Functions for Optical Flow Estimation of Deformable Motion," *IEEE Transactions on Image Processing*, vol. 3, no. 2, pp. 178-191, March, 1994. **IEEE Signal Processing Society 1996 Young Author Best Paper Award (Image and Multidimensional Signal Processing Area)**
4. T.S. Denney Jr. and J.L. Prince, "A Frequency Domain Performance Analysis of Horn and Schunck's Optical Flow Algorithm for Deformable Motion," *IEEE Transactions on Image Processing*, vol. 4, no. 9, pp. 1324-1327, September, 1995.
5. T.S. Denney Jr. and J.L. Prince, "Reconstruction of 3-D Left Ventricular Motion from Planar Tagged Cardiac MR Images: An Estimation Theoretic Approach," *IEEE Transactions on Medical Imaging*, pp. 625-636, December 1995. PubMed PMID: 18215867
6. T.S. Denney Jr. and E.R. McVeigh, "Model-Free Reconstruction of Three-Dimensional Myocardial Strain from Planar Tagged MR Images," *Journal of Magnetic Resonance Imaging*, vol. 7, no. 9, pp. 799-810, September/October, 1997. PubMed PMID: 9307904
7. J.D. Warren*, T.S. Denney Jr., and C.E. Savrda, "MATLAB Algorithm for Grayscale Analysis of Carbonate Cyclicity: Example Application to Demopolis Chalk (Creataceous, Alabama)," *Computers in the Geosciences*, vol. 24, no. 10, pp 923-931, 1998.
8. T.D. Nguyen*, S.J. Reeves, and T.S. Denney, Jr., "Optimal pulse shape for estimating positions of superimposed pulses," *IEEE Transactions on Signal Processing*, vol.47, no. 1, pp. 210-213, Jan. 1999.
9. T.S. Denney Jr., "Estimation and detection of myocardial tags in MR images without user defined myocardial contours," *IEEE Transactions on Medical Imaging*, vol. 18, no. 4, pp. 330-344, April 1999.
10. Z. Han* and T.S. Denney Jr., "A New Method for Brownian Motion Interpolation," *IEEE Transactions on Signal Processing*, vol. 47, no.11, pp. 3159-3163, Nov. 1999.
11. J. Declerck, T.S. Denney Jr., W. O'Dell, C. Ozturk, E.R. McVeigh, "Left ventricular motion reconstruction from planar tagged MR images: a comparison," *Physics in Medicine and Biology*, vol. 45, no. 6, pp. 1611-1632, June, 2000. PubMed PMID: 10870714
12. Z. Han* and T.S. Denney Jr., "Incremental Fourier Interpolation of 2-D Fractional Brownian Motion," *IEEE Transactions on Industrial Electronics*, vol. 48, no. 5., pp 920-925, Oct. 2001.
13. T. D. Nguyen*, S. J. Reeves, and T.S. Denney Jr., "Optimal Magnetic Resonance Tagged Images for Heart Wall Motion Estimation," *IEEE Transactions on Image Processing*, v. 12, n. 5, pp 524-532, May, 2003.

* Graduate Student

14. T.S. Denney Jr., B.L. Gerber, and L. Yan*, "Unsupervised Reconstruction of Three-Dimensional Left Ventricular Strain from Parallel Tagged Cardiac Images," *Magnetic Resonance in Medicine*, v49, n4, pp.743-754 April 2003. PubMed PMID: 12652546
15. D. Xiang* and T.S. Denney Jr, "3D Myocardial Strain Strain Reconstruction From Tagged MRI Using a Cylindrical B-spline Model," *IEEE Transactions on Medical Imaging*, v23, n7, pp 861-867 July 2004.
16. D. Xiang* and T.S. Denney Jr, "Combined Tag Tracking and Strain Reconstruction From Tagged Cardiac MR Images Without User-Defined Myocardial Contours," *Journal of Magnetic Resonance Imaging*, v21, n1, pp. 12-22, January 2005.
17. T.S. Denney Jr. and S.J. Reeves, "Bayesian Image Reconstruction From Fourier-Domain Samples Using Prior Edge Information," *Journal of Electronic Imaging*, v14, n4, October-December 2005, pp. 043009-1 to 043009-11.
18. J. Li* and T.S. Denney Jr., "Left Ventricular Motion Reconstruction From Planar-Tagged Magnetic Resonance Images With A Prolate Spheroidal B-Spline Model," *Physics in Medicine and Biology*, v51, n3, Feb 2006, pp 517-537.
19. M.S. Kirugulige*, H.V. Tippur and T. S. Denney Jr. Measurement of transient deformations using digital image correlation method and high-speed photography: Application to dynamic fracture," *Applied Optics*. v48, n22, Aug 2007, pp 5083-5096.
20. Denney Jr., T.S., Nagaraj, H.M., Lloyd, S.G., Aban, I, Corros, C., Seghatol-Eslami, F., Dell'Italia, L.J., Gupta, H., "Primary mitral regurgitation does not cause left ventricular dyssynchrony," *American Journal of Cardiology*, v100 n4 Aug 2007 707-711. PubMed PMID: 17697833
21. Ruzsics B, Surányi P, Kiss P, Brott BC, Litovsky S, Denney TS Jr, Aban I, Lloyd SG, Simor T, Elgavish GA, Gupta H., "Myocardial strain in sub-acute peri-infarct myocardium," *International Journal of Cardiovascular Imaging*. v25, n2, Feb 2009, pp 151-159.
22. Pat B, Killingsworth C, Denney T, Zheng J, Powell P, Tillson M, Dillon AR, Dell'Italia LJ., "Dissociation between cardiomyocyte function and remodeling with beta-adrenergic receptor blockade in isolated canine mitral regurgitation," *American Journal of Physiology Heart and Circulatory Physiology*, v295, n6, pp H2321-2327, Dec. 2008.
23. Zheng, J, Chen, Y, Pat, B, Dell'Italia, A, Tillson, M, Dillon, AR, Powell, P, Shi, K, Shah, Denney, TS, Husain, A, Dell'Italia, LJ, "Microarray identifies extensive downregulation of noncollagen extracellular matrix and profibrotic growth factor genes in chronic isolated mitral regurgitation in the dog," *Circulation*, v119, n15, pp 2086-2095, April 2009.
24. Feng, W*, Nagaraj, H, Gupta, H, Lloyd, SG, Aban, I, Perry, GJ, Calhoun, DA, Dell'Italia, LJ, Denney Jr, TS "A dual propagation contours technique for semi-automated assessment of systolic and diastolic cardiac function by CMR", *Journal of Cardiovascular Magnetic Resonance*, v11, n1, August 2009. PubMed PMID: 19674481
25. Ahmed, M, Sanagala, T, Denney, TS, Inusah, S, McGiffin, D, Knowlan, D, O'Rourke, R, Dell'Italia, LJ, "Mitral valve prolapse with a late-systolic regurgitant murmur may be associated with significant hemodynamic consequences," *The American Journal of the Medical Sciences*, v338 n2, pp 113-5, August, 2009. PubMed PMID: 19561453
26. Ahmed M, Gladden JD, Litovsky S, McGiffin D, Gupta H, Lloyd S, Denney T, Dell'Italia LJ. Myofibrillar degeneration, oxidative stress and post surgical systolic dysfunction in patients with isolated mitral regurgitation and pre surgical left ventricular ejection fraction >

* Graduate Student

- 60%. *Journal of the American College of Cardiology*, v55 n7, pp671-679, February 2010. PubMed PMID: 20170794
27. Gaddam K, Corros C, Pimenta E, Ahmed M, Denney T, Aban I, Inusah S, Gupta H, Lloyd SG, Oparil S, Husain A, Dell'Italia LJ, Calhoun DA, "Rapid reversal of left ventricular hypertrophy and intracardiac volume overload in patients with resistant hypertension and hyperaldosteronism: a prospective clinical study," *Hypertension*, v55, n5, 1137-1142, March 29, 2010. PubMed PMID: 20351345
28. Venkatesh, BA*, Gupta, H., Lloyd, S.G. Dell'Italia, L.J., Denney Jr., T.S., "3D left ventricular strain from unwrapped harmonic phase measurements," *Journal of Magnetic Resonance Imaging*, v31 n4, pp 854-862, April 2010. PubMed PMID: 20373429
29. Pat B, Killingsworth C, Denney T, Tillson M, Dillon SR, Husain A, Dell'Italia LJ. "Mast cell stabilizer worsens left ventricular function and cardiomyocyte function and calcium homeostasis in dogs with isolated mitral regurgitation." *Journal of Cardiac Failure*, v16 n9, pp769-776, September 2010. PubMed PMID: 20797601
30. Pat B, Killingsworth C, Shi K, Zheng J, Powell P, Chen Y, Walcott G, Ahmed M, Desai R, Gladden JD, Wei CC, Hase N, Kobayashi T, Granzier H, Denney T, Tilson M, Dillon AR, Husain A, Dell'Italia LJ. "Chymase inhibition improves LV and isolated cardiomyocyte contractility in dogs with isolated mitral regurgitation." *Circulation*, v122 n15 pp1488-1495, October 2010. PubMed PMID: 20876440
31. Venkatesh BA*, Schiros CG*, Gupta H, Lloyd SG, Dell'Italia LJ, Denney Jr. TS, "Three-dimensional plus time biventricular strain from tagged MR images by phase-unwrapped harmonic phase," *Journal of Magnetic Resonance Imaging*, v34 n4 pp799-810, October 2011. **Finalist for the W.S. Moore Young Investigator Award for Clinical Science, International Society for Magnetic Resonance in Medicine, 2011.** PubMed PMID: 21769965
32. Gladden JD, Ahmed MI, Litovsky SH, Schiros CG*, Lloyd SG, Gupta, H, Denney Jr. TS, Darley-Usmar V, McGiffin DC, Dell'Italia LJ, "Oxidative stress and myocardial remodeling in chronic mitral regurgitation," *American Journal of the Medical Sciences*, v342 n2, pp114-9, August 2011.
33. Ahmed MI, Desai RV, Gaddam KK, Ambale B, Agarwal S, Inusah S, Lloyd SG, Denney TS, Calhoun DA, Gupta H, "Relation of Torsion and Myocardial Strains to Left Ventricular Ejection Fraction in Hypertension," *JACC Cardiovasc Imaging*, v5 n3 p273-81, March 2012. PubMed PMID: 22421172
34. Schiros, CG*, Dell'Italia, LJ, Gladden, JD, Aban, I, Gupta, H, Lloyd, SG, McGiffin, DC, Perry, G, Denney Jr, TS, Ahmed, MI, "Magnetic Resonance Imaging with Three-Dimensional Analysis of Left Ventricular Remodeling in Isolated Mitral Regurgitation—Implications beyond Dimensions," *Circulation*, v125 n19, pp 2334-42, May 2012. PubMed PMID: 22496130
35. Ahmed MI, Aban, I, Lloyd SG, Gupta H, Howard G, Inusah S, Peri K, Robinson J, Smith P, McGiffin DC, Schiros, CG*, Denney Jr TS, Dell'Italia LJ, "A Randomized Controlled Phase IIb Trial of β_1 -Receptor Blockade for Chronic Degenerative Mitral Regurgitation," *J Am Coll Cardiol*, v60 n9, pp833-8, August 2012. PubMed PMID: 22818065
36. Dillon, AR, Dell'Italia, LJ, Tillson, M, Killingsworth, C, Denney, T, Hathcock, J, Botzman, L, "Left ventricular remodeling in preclinical experimental mitral regurgitation of dogs," *J Vet Cardiol*, v14 n1, pp73-92, March 2012. PubMed PMID: 22386719

* Graduate Student

37. Schiros, CG*, Ahmed, M, Sanagala, T, Zha, W, McGiffin, D, Bamman, M, Gupta, H, Lloyd, SG, Denney Jr, TS, Dell'Italia, LJ, "Importance of 3-Dimensional Geometric Analysis in the Assessment of the Athlete's Heart," *American Journal of Cardiology*, v111 n7, pp 1067-72, April 2013. PubMed PMID: 23332597
38. Schiros CG*, Gladden JD, Clark D 3rd, Gupta H, Lloyd SG, McGiffin DC, Ahmed MI, Aban I, Dell'Italia LJ, Perry G, Denney TS Jr. Response to letter regarding article, "Magnetic Resonance Imaging With 3-Dimensional Analysis Of Left Ventricular Remodeling In Isolated Mitral Regurgitation: Implications Beyond Dimensions". *Circulation*. v127 n7, pp e462, February 2013.
39. Jia H, Pustovyy OM, Waggoner P, Beyers RJ, Schumacher J, Wildey C, Barrett J, Morrison E, Salibi N, Denney TS, Vodyanoy VJ, Deshpande G. "Functional MRI of the olfactory system in conscious dogs." *PLoS One*. 2014 Jan 23;9(1):e86362 .
40. Kyathanahally SP, Jia H, Pustovyy OM, Waggoner P, Beyers R, Schumacher J, Barrett J, Morrison EE, Salibi N, Denney TS, Vodyanoy VJ, Deshpande G. "Anterior-posterior dissociation of the default mode network in dogs." *Brain Structure and Function*. Jan 8 2014. PubMed PMID: 24399180
41. Zheng J, Yancey DM, Ahmed MI, Wei CC, Powell PC, Shanmugam M, Gupta H, Lloyd SG, McGiffin DC, Schiros CG*, Denney TS Jr, Babu GJ, Dell'Italia LJ. "Increased sarcolipin expression and adrenergic drive in humans with preserved left ventricular ejection fraction and chronic isolated mitral regurgitation," *Circ Heart Fail*. 2014 Jan;7(1):194-202. PubMed PMID: 24297688
42. Gray-Edwards HL, Salibi N, Josephson EM, Hudson JA, Cox NR, Randle AN, McCurdy VJ, Bradbury AM, Wilson DU, Beyers RJ, Denney TS, Martin DR. "High resolution MRI anatomy of the cat brain at 3Tesla." *J Neurosci Methods*. 2014 Apr 30;227:10-7, PubMed PMID: 24525327
43. McCurdy VJ, Johnson AK, Gray-Edwards HL, Randle AN, Brunson BL, Morrison NE, Salibi N, Johnson JA, Hwang M, Beyers RJ, Leroy SG, Maitland S, Denney TS, Cox NR, Baker HJ, Sena-Esteves M, Martin DR. Sustained normalization of neurological disease after intracranial gene therapy in a feline model. *Sci Transl Med*. 2014 Apr 9;6(231):231ra48. PubMed PMID: 24718858
44. Gupta H, Schiros CG*, Denney Jr. T, "Modified Treatment Approach Using Cardiovascular Disease Risk Calculator for Primary Prevention," *PLoS One*. August 13, 2014. PubMed PMID: 25119719
45. Schiros CG*, Desai RV, Ambale Venkatesh B, Gaddam KK, Agarwal S, Lloyd SG, Calhoun DA, Denney, Jr. TS, Dell'Italia LJ, Gupta H, "Left Ventricular Torsion Shear Angle Volume Analysis in Patients with Hypertension: a Global Approach for LV Diastolic Function," *J Cardiovasc Magn Reson*, 2014 Sep 26;16(1):70. PubMed PMID: 25316384
46. Schiros CG*, Ahmed MI, McGiffin DC, Zhang X, Lloyd SG, Aban, I, Denney Jr, TS, Dell'Italia LJ, Gupta H, "Mitral Annular Kinetics, Left Atrial, and Left Ventricular Diastolic Function Post Mitral Valve Repair in Degenerative Mitral Regurgitation." *Frontiers in Cardiovascular Medicine*. 2015; 2:31. PMID: 26664902.
47. Zha W*, Schiros CG*, Reddy G, Feng W, Denney TS Jr., Lloyd SG, Dell'Italia LJ and Gupta H (2015) Improved right ventricular performance with increased tricuspid annular excursion in athlete's heart. *Front. Cardiovasc. Med*. 2015, 2:8, pp1-9.

* Graduate Student

48. Gupta A, Schiros CG*, Gaddam KK, Aban I, Denney TS, Lloyd SG, Oparil S, Dell'Italia LJ, Calhoun DA, Gupta H. "Effect of spironolactone on diastolic function in hypertensive left ventricular hypertrophy." *J Hum Hypertens*. 2014 Sep 18. PubMed PMID: 25231508
49. Wells JM, Iyer AS, Rahaghi FN, Bhatt SP, Gupta H, Denney TS, Lloyd SG, Dell'Italia LJ, Nath H, Estepar RS, Washko GR, Dransfield MT. "Pulmonary artery enlargement is associated with right ventricular dysfunction and loss of blood volume in small pulmonary vessels in chronic obstructive pulmonary disease." *Circ Cardiovasc Imaging*. 2015 Apr;8(4).
50. Schiros CG*, Denney TS Jr, Gupta H. "Interaction analysis of the new pooled cohort equations for 10-year atherosclerotic cardiovascular disease risk estimation: a simulation analysis." *British Medical Journal Open*. 2015 May 3;5(4):e006468. 2015 May 3;5(4):e006468.
51. Reyhan M, Wang Z, Li M*, Kim HJ, Gupta H, Lloyd SG, Dell'Italia LJ, Denney T, Ennis DB. "Left ventricular twist and shear in patients with primary mitral regurgitation." *J Magn Reson Imaging*. 2014 Nov 19.
52. Mouli S, Nanayakkara G, AlAlasmari A, Eldoumani H, Fu X, Berlin A, Lohani M, Nie B, Arnold RD, Kavazis A, Smith F, Beyers R, Denney T, Dhanasekaran M, Zhong J, Quindry J, Amin R. The role of frataxin in doxorubicin-mediated cardiac hypertrophy. *Am J Physiol Heart Circ Physiol*. 2015 Sep;309(5):H844-59
53. Gray-Edwards HL, Brunson BL, Holland M, Hespel AM, Bradbury AM, McCurdy VJ, Beadlescomb PM, Randle AN, Salibi N, Denney TS, Beyers RJ, Johnson AK, Voyles ML, Montgomery RD, Wilson DU, Hudson JA, Cox NR, Baker HJ, Sena-Esteves M, Martin DR. "Mucopolysaccharidosis-like phenotype in feline Sandhoff disease and partial correction after AAV gene therapy." *Molecular Genetics and Metabolism*. 2015 Sep-Oct;116(1-2):80-7.
54. Jia H, Pustovyy OM, Wang Y, Waggoner P, Beyers RJ, Schumacher J, Wildey C, Morrison E, Salibi N, Denney TS, Vodyanoy VJ, Deshpande G. "Enhancement of Odor-Induced Activity in the Canine Brain by Zinc Nanoparticles: A Functional MRI Study in Fully Unrestrained Conscious Dogs." *Chem Senses*. 2016; 41(1):53-67.
55. Sharifov OF, Schiros CG, Aban I, Denney TS, Gupta H. Diagnostic Accuracy of Tissue Doppler Index E/e' for Evaluating Left Ventricular Filling Pressure and Diastolic Dysfunction/Heart Failure With Preserved Ejection Fraction: A Systematic Review and Meta-Analysis. *J Am Heart Assoc*. 2016 Jan 25;5(1). pii:e002530. doi: 10.1161/JAHA.115.002530. PubMed PMID: 26811160.
56. George B, Denney T Jr, Gupta H, Dell'Italia L, Aban I. Applying A Spatiotemporal Model for Longitudinal Cardiac Imaging Data. *Ann Appl Stat*. 2016 Mar;10(1):527-548. Epub 2016 Mar 25. PubMed PMID: 27087884
57. Davis MT, Daniel TA, Witte TK, Beyers RJ, Willis JZ, Wang Y, Denney TS Jr, Katz JS, Salibi N, Deshpande G. Demonstration and validation of a new pressure-based MRI-safe pain tolerance device. *J Neurosci Methods*. 2016 Jul 1. pii: S0165-0270(16)30154-6. doi: 10.1016/j.jneumeth.2016.07.001. [Epub ahead of print] PubMed PMID: 27378028.
58. Gupta H, Schiros CG, Sharifov OF, Jain A, Denney TS Jr. "Impact of clinical input variable uncertainties on ten-year atherosclerotic cardiovascular disease risk using new pooled cohort equations." *BMC Cardiovasc Disord*. 2016 Aug 31;16(1):165. doi: 10.1186/s12872-016-0352-x. PubMed PMID: 27582043

59. Ahmed MI, Guichard JL, Rajasekaran NS, Ahmad S, Mariappan N, Litovsky S, Gupta H, Lloyd SG, Denney TS, Powell PC, Aban I, Collawn JF, Davies JE, McGiffin DC, Dell'Italia LJ. "Disruption of desmin-mitochondrial architecture in patients with regurgitant mitral valves and preserved ventricular function." *J Thorac Cardiovasc Surg*. 2016 Oct;152(4):1059-1070.e2. doi: 10.1016/j.jtcvs.2016.06.017. PubMed PMID: 27464577
60. Robinson JL, Baxi M, Katz JS, Waggoner P, Beyers R, Morrison E, Salibi N, Denney TS, Vodyanoy V, Deshpande G. Characterization of Structural Connectivity of the Default Mode Network in Dogs using Diffusion Tensor Imaging. *Sci Rep*. 2016 Nov 25;6:36851. PubMed PMID: 27886204
61. Qin X, Riegler J, Tiburcy M, Zhao X, Chour T, Ndoye B, Nguyen M, Adams J, Ameen M, Denney TS Jr, Yang PC, Nguyen P, Zimmermann WH, Wu JC. Magnetic Resonance Imaging of Cardiac Strain Pattern Following Transplantation of Human Tissue Engineered Heart Muscles. *Circ Cardiovasc Imaging*. 2016 Nov;9(11). PubMed PMID: 27903535.
62. Dretsch MN, Wood KH, Daniel TA, Katz JS, Deshpande G, Goodman AM, Wheelock MD, Wood KB, Denney TS Jr, Traynham S, Knight DC. Exploring the Neurocircuitry Underpinning Predictability of Threat in Soldiers with PTSD Compared to Deployment Exposed Controls. *Open Neuroimag J*. 2016 Oct 31;10:111-124.eCollection 2016. PubMed PMID: 27867434.
63. Dretsch MN, Lange RT, Katz JS, Goodman A, Daniel TA, Deshpande G, Denney TS, Iverson GL, Robinson JL. Examining Microstructural White Matter in Active Duty Soldiers with a History of Mild Traumatic Brain Injury and Traumatic Stress. *Open Neuroimag J*. 2017 Sep 6;11:46-57. doi: 10.2174/1874440001711010046. eCollection 2017. PubMed PMID: 28979609.
64. Li M, Gupta H, Lloyd SG, Dell'Italia LJ, Denney TS Jr. A graph theoretic approach for computing 3D+time biventricular cardiac strain from tagged MRI data. *Med Image Anal*. 2017 Jan 11;35:46-57. PMID: 27318591.
65. Ballmann C, Denney TS, Beyers RJ, Quindry T, Romero M, Amin R, Selsby JT, Quindry JC. Lifelong quercetin enrichment and cardioprotection in Mdx/Utrn^{+/-} mice. *Am J Physiol Heart Circ Physiol*. 2017 Jan 1;312(1):H128-H140. PubMed PMID: 27836895.
66. Ballmann C, Denney T, Beyers RJ, Quindry T, Romero M, Selsby JT, Quindry JC. Long-term dietary quercetin enrichment as a cardioprotective countermeasure in mdx mice. *Exp Physiol*. 2017 Feb 13. 102(6):635-649 PubMed PMID: 28192862.
67. Parages FM, Denney TS, Gupta H, Lloyd SG, Dell'Italia LJ, Brankov JG, "Estimation of Left Ventricular Motion from Cardiac Gated Tagged MRI Using an Image-Matching Deformable Mesh Model," *IEEE Transactions on Radiation and Plasma Medical Sciences*, 2017 March, 1(2): 147-157.
68. Rangaprakash D, Deshpande G, Daniel TA, Goodman AM, Robinson JL, Salibi N, Katz JS, Denney TS Jr, Dretsch MN. Compromised hippocampus-striatum pathway as a potential imaging biomarker of mild-traumatic brain injury and posttraumatic stress disorder. *Hum Brain Mapp*. 2017 Jun; 38(6):2843-2864. PubMed PMID: 28295837.
69. Gray-Edwards HL, Regier DS, Shirley JL, Randle AN, Salibi N, Thomas SE, Latour YL, Johnston J, Golas G, Maguire AS, Taylor AR, Sorjonen DC, McCurdy VJ, Christopherson PW, Bradbury AM, Beyers RJ, Johnson AK, Brunson BL, Cox NR, Baker HJ, Denney TS, Sena-Esteves M, Tiftt CJ, Martin DR. Novel Biomarkers of Human GM1 Gangliosidosis Reflect the Clinical Efficacy of Gene Therapy in a Feline Model. *Mol Ther*. 2017 Apr 5;25(4):892-903. PubMed PMID: 28236574.

70. Deshpande, R., Dretsch, M.N., Yan, W., Katz, J.S., Denney, T.S., Deshpande, G. (2017). Hemodynamic response function parameters obtained from resting-state functional MRI data in soldiers with trauma. *Data in Brief*, 14, 558-562, PMID: 28861454.
71. Dretsch MN, Daniel TA, Goodman AM, Katz JS, Denney T, Deshpande G, Robinson JL. Differential neural activation when voluntarily regulating emotions in service members with chronic mild traumatic brain injury. *Appl Neuropsychol Adult*. 2017 Sep 19:1-13. PubMed PMID: 28925716.
72. Rangaprakash D, Dretsch MN, Yan W, Katz JS, Denney TS Jr, Deshpande G. Hemodynamic variability in soldiers with trauma: Implications for functional MRI connectivity studies. *Neuroimage Clin*. 2017 Jul 25;16:409-417. PubMed PMID: 28879082.
73. Sharifov OF, Schiros CG, Aban I, Perry GJ, Dell'italia LJ, Lloyd SG, Denney TS Jr, Gupta H. Left Ventricular Torsion Shear Angle Volume Approach for Noninvasive Evaluation of Diastolic Dysfunction in Preserved Ejection Fraction. *J Am Heart Assoc*. 2017 Dec 29;7(1). pii: e007039. doi: 10.1161/JAHA.117.007039. PubMed PMID:29288156.
74. Rangaprakash D, Dretsch MN, Venkataraman A, Katz JS, Denney TS Jr, Deshpande G. Identifying disease foci from static and dynamic effective connectivity networks: Illustration in soldiers with trauma. *Hum Brain Mapp*. 2018 Jan;39(1):264-287. doi: 10.1002/hbm.23841. Epub 2017 Oct 23. PubMed PMID:29058357.
75. Zhao X, Rangaprakash D, Denney TS Jr, Katz JS, Dretsch MN, Deshpande G. Identifying neuropsychiatric disorders using unsupervised clustering methods: Data and code. *Data in Brief*. 2018 Feb 2;22:570-573. doi:10.1016/j.dib.2018.01.080. PubMed PMID: 30627610.
76. Gray-Edwards HL, Randle AN, Maitland SA, Benatti HR, Hubbard SM, Canning PF, Vogel MB, Brunson BL, Hwang M, Ellis LE, Bradbury AM, Gentry AS, Taylor AR, Wooldridge AA, Wilhite DR, Winter RL, Whitlock BK, Johnson JA, Holland M, Salibi N, Beyers RJ, Sartin JL, Denney TS, Cox NR, Sena-Estevés M, Martin DR. Adeno-Associated Virus Gene Therapy in a Sheep Model of Tay-Sachs Disease. *Hum Gene Ther*. 2018 Mar;29(3):312-326. doi: 10.1089/hum.2017.163. PubMed PMID: 28922945.
77. Ramaihgari B, Pustovyy OM, Waggoner P, Beyers RJ, Wildey C, Morrison E, Salibi N, Katz JS, Denney TS, Vodyanoy VJ, Deshpande G. Zinc Nanoparticles Enhance Brain Connectivity in the Canine Olfactory Network: Evidence From an fMRI Study in Unrestrained Awake Dogs. *Front Vet Sci*. 2018 Jul 2;5:127. doi:10.3389/fvets.2018.00127. PubMed PMID:30013977.
78. Zhao X, Rangaprakash D, Yuan B, Denney TS Jr, Katz JS, Dretsch MN, Deshpande G. Investigating the Correspondence of Clinical Diagnostic Grouping With Underlying Neurobiological and Phenotypic Clusters Using Unsupervised Machine Learning. *Front Appl Math Stat*. 2018 Sep;4. pii: 25. doi:10.3389/fams.2018.00025. PubMed PMID: 30393630.
79. Gupta A, Sharifov OF, Lloyd SG, Tallaj JA, Aban I, Dell'italia LJ, Denney TS Jr, Gupta H. Novel Noninvasive Assessment of Pulmonary Arterial Stiffness Using Velocity Transfer Function. *J Am Heart Assoc*. 2018 Sep 18;7(18):e009459. doi:10.1161/JAHA.118.009459. PubMed PMID: 30371198.
80. Shrader SM, Jung S, Denney TS, Smith BF. Characterization of Australian Labradoodle dystrophinopathy. *Neuromuscul Disord*. 2018 Nov;28(11):927-937. doi:10.1016/j.nmd.2018.08.008. Epub 2018 Aug 29. PubMed PMID: 30286978.
81. E.M. Thomas, E.H. Middlebrooks, R.A. Popple, V. Sung, H. Walker, A. Nicholas, F. Skidmore, J.B. Fiveash, T. Denney, M. Bolding, B.L. Guthrie, M. Bredel, "Pilot Trial of

- Frameless Virtual Cone Stereotactic Radiosurgical Thalamotomy and Advanced Functional Connectivity Parcellation of the Thalamus for Intractable Tremor," *Int J Radiat Oncol Biol Phys*, Volume 102, Issue 3, Supplement, November 1, 2018, Pages e478–e479. DOI: <https://doi.org/10.1016/j.ijrobp.2018.07.1368>.
82. Thompkins AM, Ramaiahgari B, Zhao S, Gotoor SSR, Waggoner P, Denney TS, Deshpande G, Katz JS. Separate brain areas for processing human and dog faces as revealed by awake fMRI in dogs (*Canis familiaris*). *Learn Behav*. 2018 Dec;46(4):561-573. doi: 10.3758/s13420-018-0352-z. PubMed PMID: 30349971.
 83. Reid MA, Salibi N, White DM, Gawne TJ, Denney TS, Lahti AC. 7T Proton Magnetic Resonance Spectroscopy of the Anterior Cingulate Cortex in First-Episode Schizophrenia. *Schizophr Bull*. 2019 Jan 1;45(1):180-189. doi:10.1093/schbul/sbx190. PubMed PMID: 29385594.
 84. Dretsch MN, Daniel TA, Goodman AM, Katz JS, Denney T, Deshpande G, Robinson JL. Differential neural activation when voluntarily regulating emotions in service members with chronic mild traumatic brain injury. *Appl Neuropsychol Adult*. 2019 Jan-Feb;26(1):76-88. doi: 10.1080/23279095.2017.1362406. Epub 2017 Sep 19. PubMed PMID: 28925716.
 85. Butts B, Calhoun DA, Denney TS Jr, Lloyd SG, Gupta H, Gaddam KK, Aban I, Oparil S, Sanders PW, Patel R, Collawn JF, Dell'Italia LJ. Plasma xanthine oxidase activity is related to increased sodium and left ventricular hypertrophy in resistant hypertension. *Free Radic Biol Med*. 2019 Jan 26;134:343-349. doi:10.1016/j.freeradbiomed.2019.01.029. [Epub ahead of print] PubMed PMID: 30695690.
 86. Dretsch MN, Rangaprakash D, Katz JS, Daniel TA, Goodman AM, Denney TS, Deshpande G. Strength and Temporal Variance of the Default Mode Network to Investigate Chronic Mild Traumatic Brain Injury in Service Members with Psychological Trauma. *J Exp Neurosci*. 2019 Mar 18;13:1179069519833966. doi:10.1177/1179069519833966. eCollection 2019. PubMed PMID: 30911222
 87. Sharifov OF, Denney TS Jr, Prabhu SD, Lloyd SG, Gupta H. Impact of medical therapy for cardiovascular disease on left ventricular diastolic properties and remodeling. *Int J Cardiol Heart Vasc*. 2019 May 8;23:100365. PubMed PMID: 31111086.
 88. Rangaprakash D, Dretsch MN, Katz JS, Denney TS Jr, Deshpande G. Dynamics of Segregation and Integration in Directional Brain Networks: Illustration in Soldiers With PTSD and Neurotrauma. *Front Neurosci*. 2019 Aug 23;13:803. PubMed PMID: 31507353.
 89. Lanka P, Rangaprakash D, Dretsch MN, Katz JS, Denney TS Jr, Deshpande G. Supervised machine learning for diagnostic classification from large-scale neuroimaging datasets. *Brain Imaging Behav*. 2019 Nov 5. PubMed PMID: 31691160.
 90. Sharifov OF, Denney TS Jr, Wells JM, Payne GA, Gulati S, Gupta H, Dransfield MT, Lloyd SG. Velocity Transfer Function In The Right Pulmonary Artery And Impaired Cardiopulmonary Reserve In COPD. *Int J Chron Obstruct Pulmon Dis*. 2019 Dec 2;14:2753-2757. PubMed PMID: 31819407.
 91. Gray-Edwards HL, Maguire AS, Salibi N, Ellis LE, Voss TL, Diffie EB, Koehler J, Randle AN, Taylor AR, Brunson BL, Denney TS, Beyers RJ, Gentry AS, Gross AL, Batista AR, Sena-Esteves M, Martin DR. 7T MRI Predicts Amelioration of Neurodegeneration in the Brain after AAV Gene Therapy. *Mol Ther Methods Clin Dev*. 2019 Dec 24;17:258-270. PubMed PMID: 31970203.
 92. Syed MA, Yang Z, Rangaprakash D, Hu X, Dretsch MN, Katz JS, Denney TS Jr, Deshpande G. DisConICA: a Software Package for Assessing Reproducibility of Brain

- Networks and their Discriminability across Disorders. *Neuroinformatics*. 2020 Jan;18(1):87-107. PubMed PMID: 31187352.
93. Mueller C, Lin JC, Thannickal HH, Daredia A, Denney TS, Beyers R, Younger JW. No evidence of abnormal metabolic or inflammatory activity in the brains of patients with rheumatoid arthritis: results from a preliminary study using whole-brain magnetic resonance spectroscopic imaging (MRSI). *Clin Rheumatol*. 2020 Jan 30. PubMed PMID: 32002761.
 94. Anz AW, Edison J, Denney TS, Branch EA, Walz CR, Brock KV, Goodlett MD. 3-T MRI mapping is a valid in vivo method of quantitatively evaluating the anterior cruciate ligament: rater reliability and comparison across age. *Skeletal Radiol*. 2020 Mar;49(3):443-452. PubMed PMID: 31482257.
 95. Proessl FS, Dretsch MN, Connaboy C, Lovalekar M, Dunn-Lewis C, Canino MC, Sterczala AJ, Deshpande G, Katz J, Denney T, Flanagan SD. Structural Covariance Network Disruptions in Military Personnel with Mild Traumatic Brain Injury and Post-Traumatic Stress Disorder. *J Neurotrauma*. 2020 Apr 28. PMID: 32340548.
 96. Mahmud SZ, Gladden LB, Kavazis AN, Motl RW, Denney TS, Bashir A. Simultaneous Measurement of Perfusion and T₂* in Calf Muscle at 7T with Submaximal Exercise using Radial Acquisition. *Sci Rep*. 2020 Apr 14;10(1):6342. PMID: 32286372; PMCID: PMC7156440.
 97. Bashir A, Zhang J, Denney TS. Creatine kinase rate constant in the human heart at 7T with 1D-ISIS/2D CSI localization. *PLoS One*. 2020 Mar 19;15(3):e0229933. PMID: 32191723; PMCID: PMC7081998.
 98. Butts B, Ahmed MI, Bajaj NS, Cox Powell P, Pat B, Litovsky S, Gupta H, Lloyd SG, Denney TS, Zhang X, Aban I, Sadayappan S, McNamara JW, Watson MJ, Ferrario CM, Collawn JF, Lewis C, Davies JE, Dell'Italia LJ. Reduced Left Atrial Emptying Fraction and Chymase Activation in Pathophysiology of Primary Mitral Regurgitation. *JACC Basic Transl Sci*. 2020 Jan 22;5(2):109-122. PMID: 32140620; PMCID: PMC7046515.
 99. Lanka P, Rangaprakash D, Gotoor SSR, Dretsch MN, Katz JS, Denney TS Jr, Deshpande G. MALINI (Machine Learning in NeuroImaging): A MATLAB toolbox for aiding clinical diagnostics using resting-state fMRI data. *Data Brief*. 2020 Jan 31;29:105213. PMID: 32090157; PMCID: PMC7025186.
 100. Sharifov OF, Murphy JM, Perry GJ, Tallaj J, Denney TS Jr, Prabhu SD, Gupta H, Lloyd SG. Echocardiographic diagnosis of left ventricular diastolic dysfunction: Impact of coronary artery disease. *Echocardiography*. 2020 Dec 14. PMID: 33319426.
 101. Lanka P, Rangaprakash D, Dretsch MN, Katz JS, Denney TS Jr, Deshpande G. Supervised machine learning for diagnostic classification from large-scale neuroimaging datasets. *Brain Imaging Behav*. 2020 Dec;14(6):2378-2416. PMID: 31691160; PMCID: PMC7198352.
 102. Gawne TJ, Overbeek GJ, Killen JF, Reid MA, Kraguljac NV, Denney TS, Ellis CA, Lahti AC. A multimodal magnetoencephalography 7 T fMRI and 7 T proton MR spectroscopy study in first episode psychosis. *NPJ Schizophr*. 2020 Sep 4;6(1):23. PMID: 32887887; PMCID: PMC7473853.
 103. Proessl F, Dretsch MN, Connaboy C, Lovalekar M, Dunn-Lewis C, Canino MC, Sterczala AJ, Deshpande G, Katz JS, Denney TS, Flanagan SD. Structural Connectome Disruptions in Military Personnel with Mild Traumatic Brain Injury and Post-Traumatic Stress Disorder. *J Neurotrauma*. 2020 Oct 1;37(19):2102-2112. PMID: 32340548.

104. Sharifov OF, Murphy JM, Perry GJ, Tallaj J, Denney TS Jr, Prabhu SD, Gupta H, Lloyd SG. Echocardiographic diagnosis of left ventricular diastolic dysfunction: Impact of coronary artery disease. *Echocardiography*. 2021 Feb;38(2):197-206. PMID: 33319426.
105. Thompkins AM, Lazarowski L, Ramaiahgari B, Gotoor SSR, Waggoner P, Denney TS, Deshpande G, Katz JS. Dog-human social relationship: representation of human face familiarity and emotions in the dog brain. *Anim Cogn*. 2021 Mar;24(2):251-266. PMID: 33598770.
106. Fu X, Eggert M, Yoo S, Patel N, Zhong J, Steinke I, Govindarajulu M, Turumtay EA, Mouli S, Panizzi P, Beyers R, Denney T, Arnold R, Amin RH. The Cardioprotective Mechanism of Phenylaminoethyl Selenides (PAESe) Against Doxorubicin-Induced Cardiotoxicity Involves Frataxin. *Front Pharmacol*. 2021 Apr 12;11:574656. PMID: 33912028; PMCID: PMC8072348.
107. Aryal SR, Siddiqui M, Sharifov OF, Coffin MD, Zhang B, Gaddam KK, Gupta H, Denney TS Jr, Dell'Italia LJ, Oparil S, Calhoun DA, Lloyd SG. Spironolactone Reduces Aortic Stiffness in Patients With Resistant Hypertension Independent of Blood Pressure Change. *J Am Heart Assoc*. 2021 Sep 7;10(17):e019434. PMID: 34459249; PMCID: PMC8649301.
108. Skidmore FM, Monroe WS, Hurt CP, Nicholas AP, Gerstenecker A, Anthony T, Jololian L, Cutter G, Bashir A, Denny T, Standaert D, Disbrow EA. The emerging postural instability phenotype in idiopathic Parkinson disease. *NPJ Parkinsons Dis*. 2022 Mar 18;8(1):28. doi: 10.1038/s41531-022-00287-x. PMID: 35304493; PMCID: PMC8933561.
109. Ahmed MI, Andrikopoulou E, Zheng J, Ulasova E, Pat B, Kelley EE, Powell PC, Denney TS Jr, Lewis C, Davies JE, Darley-Usmar V, Dell'Italia LJ. Interstitial Collagen Loss, Myocardial Remodeling, and Function in Primary Mitral Regurgitation. *JACC Basic Transl Sci*. 2022 Sep 14;7(10):973-981. doi: 10.1016/j.jacbs.2022.04.014. PMID: 36337921; PMCID: PMC9626893.
110. Taghian T, Gallagher J, Batcho E, Pullan C, Kuchel T, Denney T, Perumal R, Moore S, Muirhead R, Herde P, Johns D, Christou C, Taylor A, Passler T, Pulaparthi S, Hall E, Chandra S, O'Neill CA, Gray-Edwards H. Brain Alterations in Aged OVT73 Sheep Model of Huntington's Disease: An MRI Based Approach. *J Huntingtons Dis*. 2022 Sep 29. doi: 10.3233/JHD-220526. Epub ahead of print. PMID: 36189602.
111. Butts B, Brown JA, Denney TS Jr, Ballinger S, Lloyd SG, Oparil S, Sanders P, Merriman TR, Gaffo A, Singh J, Kelley EE, Calhoun DA, Dell'Italia LJ. Racial Differences in XO (Xanthine Oxidase) and Mitochondrial DNA Damage-Associated Molecular Patterns in Resistant Hypertension. *Hypertension*. 2022 Apr;79(4):775-784. doi: 10.1161/HYPERTENSIONAHA.121.18298. Epub 2022 Feb 15. PMID: 35164526.
112. Gamble FN, Aufan MR, Sharifov OF, Williams LJ, Reighard S, Calhoun DA, Gupta H, Dell'Italia LJ, Denney TS Jr, Lloyd SG. Diastolic function: modeling left ventricular untwisting as a damped harmonic oscillator. *Physiol Meas*. 2022 Mar 7;43(2):10.1088/1361-6579/ac4e6e. doi: 10.1088/1361-6579/ac4e6e. PMID: 35073533; PMCID: PMC9066283.
113. Kaddoumi A, Denney TS Jr, Deshpande G, Robinson JL, Beyers RJ, Redden DT, Praticò D, Kyriakides TC, Lu B, Kirby AN, Beck DT, Merner ND. Extra-Virgin Olive Oil Enhances the Blood-Brain Barrier Function in Mild Cognitive Impairment: A Randomized Controlled Trial. *Nutrients*. 2022 Dec 1;14(23):5102. doi: 10.3390/nu14235102. PMID: 36501136; PMCID: PMC9736478.

114. Moozhan Nikpanah, MD, William R. Willoughby, PhD, Adrienne E. Campbell-Washburn, PhD, Thomas S. Denney Jr, PhD, Ashkan A Malayeri, MD, Larry ver Hoef, MD, Kristin K Porter, MD, PhD Low Versus Ultra-High Field MRI: How to Select Your MRI Fleet. Supplement to *Applied Radiology*. 2023;52(1):28-41.
115. Mahmud SZ, Denney TS, Bashir A. Non-contrast estimate of blood-brain barrier permeability in humans using arterial spin labeling and magnetization transfer at 7 T. *NMR Biomed*. 2023 Jan 17:e4908. PMID: 36650646.
116. Zheng J, Li Y, Billor N, Ahmed MI, Fang YD, Pat B, Denney TS, Dell'Italia LJ. Understanding post-surgical decline in left ventricular function in primary mitral regurgitation using regression and machine learning models. *Front Cardiovasc Med*. 2023 Apr 21;10:1112797. PMID: 37153472; PMCID: PMC10160646.
117. Carmichael OT, Singh M, Bashir A, Russell AM, Bolding M, Redden DT, Storrs J, Willoughby WR, Howard-Claudio C, Hsia DS, Kimberly RP, Gray ME, Ravussin E, Denney TS. Harmonized Multisite MRI-Based Quantification of Human Liver Fat and Stiffness: A Pilot Study. *J Magn Reson Imaging*. 2023 May 29. PMID: 37246446.
118. Mahmud SZ, Denney TS, Bashir A. Feasibility of spinal cord imaging at 7 T using rosette trajectory with magnetization transfer preparation and compressed sensing. *Sci Rep*. 2023 May 31;13(1):8777. PMID: 37258697; PMCID: PMC10232418.
119. Aufan MR, Jost ZT, Miller NJ, Sharifov OF, Gupta H, Perry GJ, Wells JM, Denney TS Jr, Lloyd SG. Electrocardiogram to Determine Mitral and Aortic Valve Opening and Closure. *Cardiovasc Eng Technol*. 2023 Jun;14(3):447-456. PMID: 36971975.
120. Sharifov OF, Denney TS Jr, Girard AA, Gupta H, Lloyd SG. Coronary artery disease is associated with impaired atrial function regardless of left ventricular filling pressure. *Int J Cardiol*. 2023 Sep 15;387:131102. PMID: 37257514; PMCID: PMC10527465.
121. Anz AW, Jordan SE, Ostrander RV 3rd, Branch EA, Denney TS, Cohen A, Andrews JR. Augmentation of ACL Autograft Reconstruction With an Amnion Collagen Matrix Wrap and Bone Marrow Aspirate Concentrate: A Pilot Randomized Controlled Trial With 2-Year Follow-up. *Orthop J Sports Med*. 2023 Nov 17;11(11):23259671231210035. PMID: 38021297; PMCID: PMC10656805.
122. Girard AA, Denney TS, Gupta H, Dell'Italia LJ, Calhoun DA, Oparil S, Sharifov OF, Lloyd SG. Spironolactone improves left atrial function and atrioventricular coupling in patients with resistant hypertension. *Int J Cardiovasc Imaging*. 2023 Dec 20. PMID: 38123867.
123. Mahmud SZ, Denney TS, Bashir A. High-resolution proton metabolic mapping of the human brain at 7 T using free induction decay rosette spectroscopic imaging. *NMR Biomed*. 2024 Jan;37(1):e5042. PMID: 37767769.

Invited Papers

1. T.S. Denney Jr., "Estimation and Identification," *The CRC Industrial Electronics Handbook*, ed. J. David Irwin, 1995.
2. T.S. Denney Jr., "Automated Tag Detection," *Measurement of Cardiac Deformation from MRI: Physical and Mathematical Models*, eds. A.A Amini and J.L. Prince, Kluwer Academic Publishers, 2001.

Refereed Article-Length Papers in Conference Proceedings

3. T.S. Denney Jr. and J.L. Prince, "3D Displacement Field Reconstruction from Planar Tagged Cardiac MR Images," *IEEE Workshop on Biomedical Image Analysis*, Seattle, June 1994.
4. T.S. Denney Jr., "Identification of Myocardial Tags in Tagged MR Images Without Prior Knowledge of Myocardial Contours," *XVth International Conference on Information Processing in Medical Imaging*, Poultney, Vermont, June 9-13, 1997.
5. L. Yan and T.S. Denney Jr., "2-D Motion Estimation of Left Ventricle from Tagged MR Images Using Edge-Preserving Regularization," *Proceedings of the 1998 IEEE Workshop on Biomedical Image Analysis*, June, 1998.
6. Li M, Gupta H, Lloyd SG, Dell'Italia LJ, Denney Jr. TS, "3D+time Left Ventricular Strain by Unwrapping Harmonic Phase with Graph Cuts," *MICCAI*, Boston, Massachusetts, September 2014. PubMed PMID: 25485426
7. Sinha S, Zhou Y, Denney TS, Zhang J, Automated Semantic Segmentation of Cardiac Magnetic Resonance Images with Deep Learning. *19th IEEE International Conference on Machine Learning and Applications*, December 14-17, Miami, Florida.

Conference Proceedings

1. T.S. Denney Jr. and M.E. Greene, "Modeling and Simulation of the Tether Dynamics Explorer (TDE) Series Tension Sensor," *The Twenty-Second Southeastern Symposium on System Theory, Cookeville Tennessee*, pp. 359-362, March 11-13, 1990.
2. Q.E. Dolecek, K. Moorjani, B.F. Kim, T.J. Tilley, and T.S. Denney Jr., "Personal Visualization System: Applications in Research and Engineering," *Visualization 1990 Conference*, Oct. 1990.
3. T.S. Denney Jr. and J.L. Prince, "On Optimal Brightness Functions for Optical Flow," *Proceedings of the 1992 Conference on Acoustics, Speech, and Signal Processing*, San Francisco, IEEE 92CH3103-9, pp. III-257-260, March 23-26, 1992.
4. T.S. Denney Jr. and J.L. Prince, "On Non-parametric Optimal Brightness Functions for Optical Flow," *Proceedings of the 1993 Conference on Information Sciences and Systems*, The Johns Hopkins University, March 24-26, 1993.
5. T.S. Denney Jr. and J.L. Prince, "Optimal Brightness Patterns for 2-D Optical Flow," *Proceedings of the 1993 Conference on Acoustics, Speech, and Signal Processing*, Minneapolis, April, 1993.
6. J.L. Prince, T.S. Denney Jr. and E.R. McVeigh, "Cardiac Motion Analysis Using MR Tagging and Optical Flow," *The Whitaker Foundation Biomedical Engineering Research Conference*, Snowbird, Utah, July 30 - August 1, 1993.
7. T.S. Denney Jr. and J.L. Prince, "A Frequency Domain Analysis of Optical Flow Performance," Abstract and Poster Session, *IEEE Eighth Workshop on Image and Multidimensional Signal Processing*, Cannes, France, September 8-10 1993.
8. T.S. Denney Jr. and J.L. Prince, "New Results on the Performance of Optical Flow for Deformable Motion," *Proceedings of the 1994 Conference on Information Sciences and Systems*, Princeton University, March 1994.
9. T.S. Denney Jr. and J.L. Prince, "3D Displacement Field Reconstruction on an Irregular Domain from Planar Tagged Cardiac MR Images," *Proceedings of the IEEE Workshop on Non-rigid and Articulate Motion*, Austin, TX, pp. 172-177, November, 1994.

10. T.S. Denney Jr., J.L. Prince, E.R. McVeigh, M.J. Lopez, "Optimal Tag Pattern Validation Using Magnetic Resonance Imaging," *Proceedings of the First IEEE International Conference on Image Processing*, Austin, TX, pp. 881-885, November, 1994.
11. T.S. Denney Jr., "On Estimating 3-D Incompressible Motion," *Proceedings of the Second IEEE International Conference on Image Processing*, Washington, DC, pp. 492-495, October, 1995.
12. T.S. Denney Jr., "Estimation of Left Ventricular Displacement from Magnetic Resonance Phase Contrast and Tagging Data," *Proceedings of the Ninth Image and Multidimensional Signal Processing Workshop*, Belize City, Belize, March 3-6, 1996.
13. T.S. Denney Jr. and E.R. McVeigh, "Model-Free Reconstruction of 3-D Myocardial Strain from Planar Tagged MR Images: Precision and Spatial Resolution," *Proceedings of the 16th Southern Biomedical Engineering Conference*, Biloxi, Mississippi, April 4-6, 1997.
14. T.S. Denney Jr., "Segmentation of Myocardial Magnetic Resonance (MR) Tags Without Prior Knowledge of Myocardial Contours," *Fifth Meeting of the International Society for Magnetic Resonance in Medicine*, Vancouver, Canada, April 12-18, 1997.
15. Warren, J.D., Denney, T.S., Jr., and Savrda, C.E., Application of a grayscale image analysis program in cyclostratigraphic studies of the Demopolis Chalk (Upper Cretaceous, Alabama): *GSA Annual Meeting Abstracts with Programs*, vol. 29, no. 6, p. A-413, 1997.
16. Warren, J.D., Denney, T.S., Jr, and Savrda, C.E., Digital image analysis as a tool for geochemical approximation and climatic interpretation: Upper Cretaceous (Campanian-Maastrichtian) Demopolis Chalk: *GSA 46th Annual Southeastern Section Abstracts with Programs*, vol. 29, no. 3, p. 77, 1997.
17. L. Yan and T.S. Denney Jr., "2-D Motion Estimation of Left Ventricle from Tagged MR Images Using Edge-Preserving Regularization," *Proceedings of the 1998 SPIE Medical Imaging Conference*.
18. T.D. Nguyen, S.J. Reeves, and T.S. Denney, Jr., "Optimal pulse shape for estimating positions of superimposed pulses," *Proceedings of the 1998 International Conference on Acoustics, Speech, and Signal Processing*, Seattle, WA, 1998.
19. L. Yan and T.S. Denney Jr., "Unsupervised Estimation of Left Ventricular Displacement from MR Tagged Images Using Markov Random Field Edge Priors," *Proceedings of the 1998 International Conference on Image Processing*, Chicago, IL, 1998.
20. T.D. Nguyen, S.J. Reeves, and T.S. Denney, Jr., "New magnetic resonance tagging technique for directly measuring the strain tensor of the in vivo human heart," *Proceedings of the 1998 International Conference on Image Processing*, Chicago, IL, 1998.
21. Z. Han and T.S. Denney Jr., "Interpolation of 2-D fractional Brownian motion using first order increments," *Proceedings of the 1998 International Conference on Image Processing*, Chicago, IL, 1998.
22. T.S. Denney, Jr., "Unsupervised Reconstruction of 3-D Left-Ventricular Strain from MRI data," *The Whitaker Foundation Biomedical Engineering Research Conference*, August 1998.
23. Moss, AG, Morgan, DD, and Denney, TS, "Harmonic analysis of ciliary motion with a confocal microscope," *HSEMB '99*.
24. Morrison, EE, Denney, TS, Vodyanoy, V, "Morphology, M physiology and image analysis of the peripheral canine olfactory system," *1999 ONDCP International Technology Symposium*.

25. J. Declerck, T.S. Denney Jr., W. O'Dell, C. Ozturk, E.R. McVeigh, "Left ventricular motion reconstruction from planar tagged MR images: a comparison," *1999 Meeting of the International Society of Magnetic Resonance in Medicine*.
26. T.S. Denney, Jr., "Unsupervised Reconstruction of 3-D Left-Ventricular Strain from MRI data," *The Whitaker Foundation Biomedical Engineering Research Conference*, August 1999.
27. T.S. Denney Jr and L. Yan, "Unsupervised reconstruction of left ventricular strain from planar tagged cardiac MR images," *Proceedings of the 8th Meeting of the International Society of Magnetic Resonance in Medicine*, Denver CO, USA, 2000.
28. T.S. Denney Jr, "Automated Tag Line Tracking In Tagged White Blood Images," *Proceedings of the 9th Meeting of the International Society of Magnetic Resonance in Medicine*, Glasgow, Scotland, 2001.
29. Walsh, E.G. Denney, T., Johnson, V.Y., Newcomer, B.R., "Imaging of Regional Muscle Strain and Displacement Using Force-Referenced RF Tagged MR Imaging," *Proceedings Of The 1st ESMRM/ISMRM Workshop On Non-Invasive Assessment Of Muscle Function*, Marseille, France. October, 2001.
30. T.S. Denney Jr., B.L. Gerber, and L. Yan, "Validation of Unsupervised Reconstruction of Left Ventricular Strain from Tagged MRI" *10th Meeting of the International Society for Magnetic Resonance in Medicine*, Honolulu, Hawaii, May 2002.
31. D. Xiang and T.S. Denney Jr, "3D Myocardial Strain Strain Reconstruction From Tagged MRI Using a Cylindrical B-spline Model," submitted to *IEEE International Symposium on Biomedical Imaging*, Washington, DC, July 2002.
32. T.S. Denney Jr. and S.J. Reeves, "MR spectroscopic image reconstruction using structural information from anatomical MR images," *Electronic Imaging 2003*, Santa Clara, CA, January, 2003.
33. T.S. Denney Jr and D. Xiang, "Rapid 3D LV Strain Reconstruction from Tagged Cardiac MR Images," *11th Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Ontario, Canada, July 2003.
34. Deng, X and Denney Jr, TS, Optimizing Knot Positions for Multidimensional B-spline Models, *Proceedings of Electronic Imaging 2004, Computational Imaging II Conference*, San Jose, California, January 2004.
35. Deng, X and Denney Jr, TS, Combined Tag Tracking and Myocardium Motion Reconstruction from Planar Tagged MR Image Data Without User-Defined Myocardial Contours, *Proceedings of the 2004 International Symposium on Biomedical Imaging (ISBI'04)*, Washington, DC, April, 2004.
36. Morrison, EE, Wang, K, Dennis, JC, Josephson E., Denney Jr., TS, Vodyanoy, VJ, "Canine Olfaction: Structure and Function," *Olfactory Symposium*, Dstl, Ministry of Defense, Seven Oaks UK, 2004.
37. Bertus, M, Denney, T, Godbey, J and Hinkelmann, C, "Historical Speculative Bubbles: Evidence from the Futures Market," *Financial Management Association* Fall 2004.
38. Parmar, M, Reeves, SJ and Denney Jr., TS, Bayesian Edge-preserving Color Image Reconstruction from Color Filter Array Data, *Proceedings of Electronic Imaging 2005, Computational Imaging III Conference*, San Jose, California, January 2005.
39. Morrison, EE, Wang, K, Dennis, JC, Josephson E., Denney Jr., TS, Vodyanoy, VJ, "Canine Olfaction: Structure and Function," *International Seminar on Detection Dogs*, Kircadine Scotland 2005.

40. Bertus, M, Denney, T, Godbey, J and Hinkelmann, C, "Historical Speculative Bubbles: Evidence from the Futures Market," *Eastern Financial Association* Spring 2005.
41. Bertus, M, Denney, T, Godbey, J and Hinkelmann, C, "Noise, Bubbles and Equity Prices: Evidence from the Stock Index Futures Market," *Midwest Financial Association Annual Meeting*, Milwaukee, WI, March 2005. **Voted Most Outstanding Paper in Derivatives.**
42. J. Li and T.S. Denney Jr., "Evaluation of B-Spline Cardiac Deformation Models for Tagged MRI," *13th Meeting of the International Society for Magnetic Resonance in Medicine*, Miami, Florida, May 2005.
43. Wang, K, Denney Jr, TS, Vodyanoy, VJ, and Morrison, EE, "Construction of Volume Meshes from Computed Tomography Data," *27th IEEE EMBS Annual International Conference*, Shanghai, China September 2005.
44. Wang, K, Denney Jr, TS, Vodyanoy, VJ, and Morrison, EE, "Numerical Simulation of Air Flow in the Human Nasal Cavity," *27th IEEE EMBS Annual International Conference*, Shanghai, China September 2005.
45. Wang, K, Denney Jr, TS, Vodyanoy, VJ, and Morrison, EE, "Application Hierarchical Spline-Based Image Registration to Human Nasal Cavity Reconstruction" *2005 Annual Fall Meeting of the Biomedical Engineering*.
46. Li, J, Davis, C, and Denney Jr., TS, "Determining Tag Line Correspondences in Tagged Cardiac MR Images With Deterministic Annealing," *2006 International Symposium on Biomedical Imaging*, April 2006.
47. Davis, C, Li, J, and Denney Jr., TS, "Bandpass Filtering for Tracking Tag Lines in Tagged Cardiac MR Images," *2006 International Symposium on Biomedical Imaging*, April 2006.
48. Li, T and Denney Jr., TS, "Breath-Hold Image Misalignment Correction in Cardiac MRI Using Short-axis and Long-Axis LV Contour Information," *14th Meeting of the International Society for Magnetic Resonance in Medicine*, May 2006.
49. Morrison, EE, Dennis, J, Josephson, E, Denney Jr., TS, Wang, K, and Vodyanoy, V, "Canine Olfaction," *International Explosives Detection Canine Conference*, Las Vegas, Nov 2006.
50. Gupta, H, Denney Jr., T.S., Lloyd, S.G., Calhoun, D.A., Zoghbi, G.J., Corros, C., Nagaraj, H., Dell'Italia, L.J. , "Effects of loading conditions on the left ventricular mechanics," *Society for Cardiovascular Magnetic Resonance Tenth Annual Scientific Sessions*, Rome, Italy, Feb 2007.
51. Nagaraj, H, Denney Jr., T.S., Lloyd, S.G., Chichi Aban, Cecilia Corros, Louis J. Dell'italia, Gupta, H, "Does mitral regurgitation cause left ventricular dyssynchrony?," *Society for Cardiovascular Magnetic Resonance Tenth Annual Scientific Sessions*, Rome, Italy, Feb 2007.
52. Ruzsics, B. Suranyi, P., Kiss, P., Denney, Jr., T.S., Litovsky, S.H., Brott, B.C. Simor, T. Lloyd, S.G., Elgavish, G.A., Gupta, H, "Complex MRI evaluation of porcine reperfused myocardial infarction using a multi-modality approach," *Society for Cardiovascular Magnetic Resonance Tenth Annual Scientific Sessions*, Rome, Italy, Feb 2007.
53. Gupta, H., Denney Jr., T.S.,Lloyd, S.G., Calhoun, D.A., Zoghbi, G.J., Corros, C., Nagaraj, H.M. Dell'Italia, L.J., "Effects of loading conditions on left ventricular mechanics," *Society for Cardiovascular Magnetic Resonance Tenth Annual Scientific Sessions*, Rome, Italy, Feb 2007.
54. Corros, C., Gupta, H, Denney Jr. ,T.S., Dell'Italia, L.J., and Lloyd, S.G., "Comparison of methods of quantification of left atrial volumes by cardiovascular magnetic resonance,"

- Society for Cardiovascular Magnetic Resonance Tenth Annual Scientific Sessions*, Rome, Italy, Feb 2007.
55. Nagaraj, H, Denney Jr., T.S., Lloyd, S.G., Aban, C, Corros, C, Dell'Italia, L.J., Gupta, H, "Does mitral regurgitation cause left ventricular dyssynchrony?" *American College of Cardiology 56th Annual Scientific Session*, March 2007.
 56. Nagaraj, H, Denney Jr., T.S., Lloyd, S.G., Aban, C, Corros, C, Dell'Italia, L.J., Gupta, H, "Effect of volume overload on left ventricular torsion and extracellular matrix." *American College of Cardiology 56th Annual Scientific Session*, March 2007.
 57. AR Dillon, DM Tillson, J Hathcock, T Denney, C Killingsworth, LJ Dell'Italia, "Cardiac remodeling and hypertrophy in experimental mitral valve disease," *2007 American College of Veterinary Internal Medicine Forum*, June 6-9, Seattle Washington.
 58. Parmar, M., Reeves, S.J., Denney Jr., T.S., "Bayesian restoration of color images using a non-homogenous cross-channel prior," *International Conference on Image Processing (ICIP) 2007*, San Antonio, Texas, September, 2007.
 59. Feng, W., Gupta, H., Lloyd, S., Dell'Italia, L., Denney Jr., T., "Myocardial Contour Propagation in Cine Cardiac MRI," *15th Meeting of the International Society for Magnetic Resonance in Medicine*, May 2007.
 60. Hosakote M Nagaraj, Thomas S Denney, Jr, Steven G Lloyd, David Calhoun, Inmaculada Aban, Cecilia Corros, Gilbert J Zoghbi, Gilbert J Perry, Louis J Dell'Italia, and Himanshu Gupta, "Effect of Volume Overload on Left Ventricular Torsion and Extra Cellular Matrix," Abstract 964, *American Heart Association Scientific Sessions 2007*, Circulation 116: II_190-c-191II.
 61. Gupta, H, Feng, W, Lloyd, SG, Sanagala, T, Dell'Italia, LJ, Denney Jr., TS, "Diastolic function evaluation using a novel method for quantification of cine myocardial deformation analysis (cMDA) based on non-rigid registration," *Society for Cardiovascular Magnetic Resonance*, Los Angeles, CA, Feb 2008.
 62. Gupta H, Feng W, Nagaraj HM, Dell'Italia LJ, Denney Jr. TS, Lloyd SG, "Assessment of semi-automated cardiac time volume curves and comparison with cine myocardial deformation analysis (cMDA) derived diastolic cardiac indices in pressure and volume overload conditions," *Society for Cardiovascular Magnetic Resonance*, Los Angeles, CA, Feb 2008.
 63. Ambale, B, Lloyd, SG, Denney Jr., TS, Dell'Italia, LJ, Benza, R, Gupta, H, "3D Right Ventricular Strain and Geometry in Pulmonary Hypertension and Normals," *16th Meeting of the International Society for Magnetic Resonance in Medicine*, May 2008.
 64. Ambale, B, Denney Jr., TS, Lloyd, SG, Dell'Italia, LJ, Gupta, H, "Measuring 3D left ventricular strain from unwrapped harmonic phase," *2008 International Symposium on Biomedical Imaging*, Paris, France, April 2008.
 65. Feng, W, Denney Jr., TS, Lloyd, SG, Dell'Italia, LJ, Gupta, H, "Contour regularized left ventricular strain analysis from cine MRI," *2008 International Symposium on Biomedical Imaging*, Paris, France, April 2008.
 66. Ahmed MI, Gladden JD, Litovsky S, Inusah S, Gupta H, Lloyd SG, Denney T, McGiffin D, Dell'Italia LJ., "Chronic organic mitral regurgitation results in marked myofibrillar degeneration and oxidative stress with post-surgical left-ventricular impairment despite pre-surgical left-ventricular ejection fraction > 60%," *American Heart Association Scientific Sessions*, New Orleans, LA, November, 2008.

67. Amabale, B, Gupta, H, Lloyd, SG, Dell'Italia, LJ, and Denney Jr., TS, "Comparison of 2D and 3D torsion measured from tagged cardiac MRI," *17th Meeting of the International Society for Magnetic Resonance in Medicine*, May 2009.
68. Feng, W, Denney Jr., TS, Lloyd, SG, Dell'Italia, LJ, Gupta, H, "Polar-Regularized Left Ventricular Strain Analysis from Cine MRI Using Non-rigid Registration," *17th Meeting of the International Society for Magnetic Resonance in Medicine*, May 2009.
69. Feng, W, Reeves, SJ, Denney Jr, TS, Lloyd, SG, Dell'Italia, LJ, Gupta, H, "A new consistent image registration formulation with a B-spline deformation model," *IEEE International Symposium on Biomedical Imaging: From Nano to Macro, 2009. ISBI '09*, pp:979 - 982, June 28 2009-July 1 2009.
70. Ambale, B, Denney Jr, TS, Gupta, H, Lloyd, SG, Dell'Italia, LJ, "3D left ventricular strain by phase unwrapping: A simulated annealing based branch-cut placement method," *IEEE International Symposium on Biomedical Imaging: From Nano to Macro, 2009. ISBI '09*, pp:466 - 469, June 28 2009-July 1 2009.
71. Parages, FM, Wernick, MN, Denney Jr, TS, Brankov, JG, "Deformable mesh model of cardiac motion from tagged MRI data," *IEEE International Symposium on Biomedical Imaging: From Nano to Macro, 2009. ISBI '09*, pp:213 - 216, June 28 2009-July 1 2009.
72. Brankov, JG, Parages, FM, Wernick, MN, Yang, Y, Denney Jr., TS, "Estimation of myocardium deformation by simultaneous use of tagged and untagged gated cardiac MRI," *Nuclear Science Symposium/Medical Imaging Conference (NSS/MIC)*, 2009.
73. Seibert AM, Gladden JD, Butler M, Desai RV, Lloyd SG, Gupta H, Denney TS, Aqel RA, Dell'Italia LJ, Ahmed MI. Left ventricular strain is reduced in remote non-diseased myocardial segments following myocardial infarction in patients with type-2 diabetes mellitus. Abstract. *American Heart Association Scientific Sessions*, Orlando, FL, November, 2009.
74. Desai RV, Ahmed MI, Gladden JD, Inusah S, Gaddam KK, Ambale B, Lloyd SG, Denney TS, Calhoun D, Gupta H., "Torsional Deformation Compensates for Depressed Systolic Myocardial Strains in Hypertensive Concentric Left Ventricular Hypertrophy," Abstract. *American Heart Association Scientific Sessions*, Orlando, FL, November, 2009.
75. Venkatesh, BA, Lloyd, SG, Ahmed, MI, Gupta, H, Dell'Italia, LJ, Denney Jr, TS, "4D Right Ventricular Strain in Pulmonary Hypertension and Normals," *18th Meeting of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 2010.
76. Feng, W, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Denney Jr, TS, "RV Function from Cine MRI Using Contour Propagation," *18th Meeting of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 2010.
77. Bagheriannejad Esfahani F, Aggarwal H, Manapragada P, Gaddam KK, Schiros CG, Zha W, Ahmed M, Agarwal S, Gupta H, Denney, Jr. TS, Dell'Italia, LJ, Calhoun DA, Lloyd SG., "Rapid Improvement in Aortic Distensibility and Pulsatility with Spironolactone Therapy in Patients with Resistant Hypertension: A Cardiac MRI Study." *2011 Meeting Of American College Of Cardiology*, April 2-5, 2011, New Orleans, Louisiana; Abstract Number 11495.
78. Schiros CG, Aggarwal H, Ahmed M, Lloyd SG, Gupta H, Bamman MM, McGiffin DC, Denney, Jr. TS, Dell'Italia LJ., "Increased Myocardial Strain and Torsion in Compensated Pathological Versus Physiological Left Ventricular Volume Overload." *2011 Meeting Of American College Of Cardiology*, April 2-5, 2011, New Orleans, Louisiana; Abstract Number 8183.

79. Ambale Venkatesh B, Gupta H, Lloyd SG, Dell'Italia LJ, Denney Jr. TS, "3D+t biventricular strain from tagged MR images by phase-unwrapped HARP," *19th Meeting of the International Society for Magnetic Resonance in Medicine*, Montreal, Quebec, May 2011. Program number 96. **Finalist for the W.S. Moore Young Investigator Award for Clinical Science**
80. Schiros, CG, Lloyd SG, Gupta H, Dell'Italia LJ, Denney Jr. TS, "A new triangulated surface approach to measuring apex curvature from cine MRI in patients with mitral regurgitation," *19th Meeting of the International Society for Magnetic Resonance in Medicine*, Montreal, Quebec, May 2011. Program number 3279.
81. Zha W, Lloyd SG, Gupta H, Dell'Italia LJ, Denney Jr. TS, "Preserved ejection fraction in the presence of reduced LV wall strain in hypertension: a geometric explanation validated by MRI," *19th Meeting of the International Society for Magnetic Resonance in Medicine*, Montreal, Quebec, May 2011. Program number 1177.
82. Schiros, CG, Clark III, D, Gladden, JD, Gupta, H, Lloyd, SG, McGiffin, DC, Denney Jr, TS, Dell'Italia, LJ, Ahmed, MI, "Importance of Volumetric Analysis as an Indicator of Left Ventricular Remodeling in Patients with Chronic Severe Mitral Regurgitation," *American Heart Association 2011, Scientific Sessions*, Orlando, Florida, 2011.
83. Clark, D III, Gladden, JD, Schiros, CG, Lloyd, SG, Guichard, JL, Denney Jr, TS, Gupta, H, McGiffin, DC, Dell'Italia, LJ, Ahmed, MI, "Impact of Mild to Moderate Mitral Regurgitation on Left Ventricular Structure and Function in Patients with Isolated Degenerative Mitral Regurgitation," *2011 Meeting Of American College Of Cardiology*, March 24-27, 2012, Chicago, Illinois; Abstract Number 8800.
84. Jha, N, Zha, W, Gupta H, Lloyd SG, Dell'Italia LJ, Denney Jr. TS, "Quantification of Pulse Wave Velocity From Phase-Contrast MRI Data Using Fourier Analysis," *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 4077.
85. Beyers, RJ, Salibi, N, Amin, R, Quindry, JC, Denney Jr., TS, "Practical multi-mode cardiac MRI of mice and rats on a 3T clinical scanner," *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 5789.
86. Zha, W, Lloyd, SG, Gupta, H, Reeves, SJ, Denney Jr, TS, "Accelerated cardiac MRI by 2D Fourier Inversion of the Entire Image Sequence," *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 1346.
87. Schiros, CG, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Denney Jr., TS, "A Novel Biventricular Active Mesh Model for Measuring Cardiac Function and Geometry from Cine MRI," *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 3109.
88. H Jia, O Pustovyy, P Waggoner, RJ Beyers, J Schumacher, J Barrett, E Morrison, RL Gillette, TS Denney, VJ Vodyanoy, G Deshpande, "Functional MRI of the Olfactory System in Awake and Anesthetized Dogs", *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 6473.
89. SP Kyathanahally, O Pustovyy, P Waggoner, RJ Beyers, J Schumacher, J Barrett, E Morrison, RL Gillette, TS Denney, VJ Vodyanoy, G Deshpande, "Anterior-Posterior Dissociation of the Default Mode Network in Dogs", *20th annual meeting of the International Society for Magnetic Resonance in Medicine*, Melbourne, Australia, 2012. Abstract 6285.

90. SP Kyathanahally, O Pustovyy, P Waggoner, RJ Beyers, J Schumacher, J Barrett, E Morrison, RL Gillette, TS Denney, VJ Vodyanoy, G Deshpande, "Anterior-Posterior Dissociation of the Default Mode Network in Dogs", *ISMRM Scientific Workshop: fMRI - From Cortical Layers to Networks*, Whistler-Blackcomb, Canada, 2012.
91. Reyhan, M, Li, M, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Kim, HJ, Denney, TS, Ennis, DB, "Left Ventricular Twist, but not Circumferential Longitudinal Shear Angle, Increases with Increasing Age in Normal Subjects," *Society for Cardiovascular Magnetic Resonance (SCMR) 16th Annual Scientific Sessions*, San Francisco, CA, January 2013.
92. Reyhan, M, Li, M, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Kim, HJ, Denney, TS, Ennis, DB, "Left Ventricular Twist and Shear Angle in Patients with Mitral Regurgitation," *Society for Cardiovascular Magnetic Resonance (SCMR) 16th Annual Scientific Sessions*, San Francisco, CA, January 2013.
93. Beyers, RJ, Salibi, N, Denney, TS, "Back to Basics: Tradeoffs of RF pulse types applied at 7T," *ISMRM Workshop on Ultra High Field MRI: What is in Full Bloom & What is Sprouting?*, Noordwijk aan Zee, The Netherlands, March 2013.
94. Tang, J, Denney, T, Salibi, N, Buch, S, Ye, Y, Haacke, EM, "Investigating the effect of image resolution on susceptibility values inside the vessels for venous oxygen saturation quantification using 7T Data," *ISMRM Workshop on Ultra High Field MRI: What is in Full Bloom & What is Sprouting?*, Noordwijk aan Zee, The Netherlands, March 2013.
95. Wang, S, Lu, H, Sun, X, Shao, Y, Salibi, N, Denney Jr, TS, "7 Tesla 1H/31P Dual-Tuned Transceiver Array for Cardiac Spectroscopy," *ISMRM Workshop on Ultra High Field MRI: What is in Full Bloom & What is Sprouting?*, Noordwijk aan Zee, The Netherlands, March 2013.
96. Denney Jr, TS, Salibi, N, Beyers, R, Gamlin, P, "Tagged MRI of Ocular Tissues at 3T and 7T," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 1216.
97. Jha, N, Schiros, CG, Salibi, N, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Denney Jr, TS, "Virtual Short Axis: A Novel Method for Computing Left Atrial Volumes from Two and Four Chamber MRI," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 5899.
98. Gray-Edwards, H, Beyers, R, Salibi, N, Denney Jr., TS, Martin, D, "3T MRI and MR spectroscopy of a Feline Model of Sandhoff Disease after AAV-Mediated Gene Therapy," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 3376.
99. Gray-Edwards, H, Beyers, R, Salibi, N, Denney Jr., TS, Martin, D, "3T MRI and MR spectroscopy of a Feline Model of GM1 Gangliosidosis after AAV-Mediated Gene Therapy," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 6748.
100. Gray-Edwards, H, Beyers, R, Salibi, N, Denney Jr., TS, Martin, D, "3T MRI and MR Spectroscopy of an Ovine Model of Tay-Sachs Disease after AAV-Mediated Gene Therapy," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 6815.
101. Li, M, Ambale Venkatesh, B, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Denney Jr, TS, "Computer Assisted Branch Cut Placement for Computing 3D+t Biventricular Strain from Tagged MRI," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 2364.

102. Lu, H, Sun, X, Salibi, N, Stoeckel, B, Denney Jr, TS, Beyers, R, Wang, S, "A Four-Channel 1H/31P Dual-Tuned Transceiver Array for 7 Tesla Cardiac Spectroscopy," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013. Abstract 4308.
103. Tang, J, Denney, T, Salibi, N, Buch, S, Ye, Y, Haacke, EM, "Investigating the effect of image resolution on susceptibility values inside the vessels for venous oxygen saturation quantification," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013.
104. Reyhan, M, Li, M, Gupta, H, Lloyd, SG, Dell'Italia, LJ, Kim, HJ, Denney, TS, Ennis, DB, "Left Ventricular Twist Increases with Severity of Mitral Regurgitation," *International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, 2013.
105. H Jia, O Pustovyy, P Waggoner, RJ Beyers, J Schumacher, J Barrett, E Morrison, N Salibi, TS Denney, VJ Vodyanoy, G Deshpande, "Activated Voxels Increase 3.5 Times with Commercially Available Small Footprint Motion System in MRI", *19th Annual Meeting of the Organization for Human Brain Mapping*, Seattle, WA, USA, 2013.
106. Meredith A.R., Salibi, N., Gawne, T.J., Lahti, A.C., and Denney, T.S. Feasibility and reproducibility of auditory cortex MR spectroscopy at 7T. *Organization for Human Brain Mapping (OHBM)*, Hamburg, Germany, 2014.
107. Zhang, X, Schiros CG, Ahmed M, McGiffin DS, Lloyd SG, Dell'Italia LJ, Denney TS, Gupta H, "Mitral Annular Kinetics in Mitral Regurgitation," *Society for Cardiovascular Magnetic Resonance 2014 Scientific Meeting*, New Orleans, LA.
108. Denney Jr TS, Bolding M, Beyers RJ, Salibi N, Li M, Zhang X, Gamlin P, "Differential Motion In Orbital And Global Layers Of Extraocular Muscles Measured By Tagged MRI At 7T" *International Society for Magnetic Resonance in Medicine*, Milan, Italy, 2014. Abstract 3446.
109. Li M, Gupta H, Lloyd SG, Dell'Italia LJ, Denney Jr TS, "Improved Detection of Phase Unwrapping Errors in 3D Tagged Cardiac Magnetic Resonance Imaging Data" *International Society for Magnetic Resonance in Medicine*, Milan, Italy, 2014.
110. Gray-Edwards H, Salibi N, Randle A, Beyers R, Lu H, Wang S, Denney TS, Wilson D, Hudson J, Bradbury A, McCurdy V, Seethamraju R, Johnson A, Cox N, Sena-Esteves M, and Martin D, "7T MRI and MR Spectroscopy of a Feline Model of Sandhoff Disease After AAV Gene Therapy," *International Society for Magnetic Resonance in Medicine*, Milan, Italy, 2014.
111. Ver Hoef L, Deshpande H, Beyers RJ, Salibi N, Denney TS, "High resolution imaging of hippocampal internal architecture using HR-MICRA at 3T," *International Society for Magnetic Resonance in Medicine*, Milan, Italy, 2014.
112. Riser, ES, Denney, T, Han, J, "A Comprehensive Analysis of Relapse in Multiple Sclerosis," The 2015 Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Indianapolis, IN, May 2015. Abstract 3660.
113. Lawrence Ver Hoef, Nouha Salibi, Ronald Beyers, Thomas Denney. "Ultra high resolution imaging of the internal architecture of the hippocampus in vivo at 7T." Poster Number: 1587. *Organization for Human Brain Mapping*. Honolulu, HI. June 2015
114. Zhang, Xiaoxia Jha, Nikhil Gupta, Himanshu Salibi, Nouha Denney, Thomas S., "A Novel Approach to Comprehensive Atrio-Ventricular Functional Analysis," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 4476.

115. Li, Ming Gamlin, Paul Bolding, Mark S. Beyers, Ronald Salibi, Nouha Zhang, Xiaoxia Denney, Thomas S., "Measurement of the Vitreous Humour Deformation and Strain with Tagged MR Imaging," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 2306.
116. Baxi, Madhura Robinson, Jennifer Waggoner, Paul Beyers, Ronald Morrison, Edward Salibi, Nouha Denney, Thomas S. Vodyanoy, Vitaly Deshpande, Gopikrishna, "Characterization of Structural Connectivity of the Default Mode Network in Dogs Using Diffusion Tensor Imaging," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 3007.
117. Rangaprakash, D. Deshpande, Gopikrishna Dutt, D. Narayana Daniel, Thomas A. Goodman, Adam Katz, Jeffrey S. Salibi, Nouha Denney, Thomas S. Dretsche, Michael N., "Global Brain Network Alterations in Post-Traumatic Stress Disorder and Post-Concussion Syndrome," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 1357.
118. Li, Ming Gupta, Himanshu Lloyd, Steven G. Dell'Italia, Louis J. Denney, Thomas S., "An Integer Optimization Technique for Measuring Biventricular Cardiac Strain from Tagged MR Images," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 4528.
119. Gray-Edwards, Heather L. Salibi, Nouha Randle, Ashley N. Hudson, Judith Beyers, Ronald Esteves, Miguel Sena Denney, Thomas S. Martin, Douglas, "Long Term MRI and MR Spectroscopic Evaluation of Gene Therapy in a Feline Model of Neurologic Disease," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 4293.
120. Shi, Tuo Pustovsky, Oleg Wang, Yun Waggoner, Paul Beyers, Ronald Fleming, Jessica Hammond, Paul Morrison, Edward Denney, Thomas S. Vodyanoy, Vitaly, "Predicting Dogs' Training Ease and Behavior Using Their Neural Responses to Discriminative Odors," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 3904.
121. Beauchamp, Daniel Lloyd, Steven G. Allon, Michael Lee, Timmy Salibi, Nouha Denney, Thomas S., "Simulation and Phantom Study of Wall Shear Stress in Arteriovenous Grafts," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 4586.
122. Rangaprakash, D. Deshpande, Gopikrishna Daniel, Thomas A. Goodman, Adam Katz, Jeffrey S. Salibi, Nouha Denney, Thomas S. Dretsche, Michael N., "Static and Dynamic Functional Connectivity Impairments in Concussed Soldiers with and Without PTSD," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 4402.
123. Beyers, Ronald Ballmann, Christopher Selsby, Joshua Salibi, Nouha Quindry, John Denney, Thomas S., "Whole-Heart T2-Mapping at 7T Quantifies Dystrophic Myocardial Pathology in Mdx/utrn+/- Mice," *23rd Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Toronto, Canada, 2015. Abstract 0718.
124. Robinson, J. L., Denney, T. S., Murphy, J. E., Kirby, L. A. J., Kirkland, A., Graap, K., Macy, A., Erath, S. A., & El-Sheikh, M. (March, 2016). "Neuropsychophysiological Mapping Following Sleep Restriction & Extension: a 7T fMRI Study." *International Society for Magnetic Resonance in Medicine Workshop Ultra High Field MRI: Technological Advances & Clinical Applications*, Heidelberg, Germany, March 2016.

125. Robinson, J. L., Denney, T. S., Miller, M., Lohse, K., Grand, K., Kirby, L. A. J., Murphy, J. E., Graap, K., & Macy, A. (March, 2016). "Psychophysiological Recording in Ultra High Field Environments: a 7T Investigation." International Society for Magnetic Resonance in Medicine Workshop *Ultra High Field MRI: Technological Advances & Clinical Applications*, Heidelberg, Germany, March 2016.
126. Deshpande G, Wang Y, Robinson JL, "Resting State Functional Connectivity is Sensitive to Layer-specific Connectional Architecture in Cortical Columns." International Society for Magnetic Resonance in Medicine Workshop *Ultra High Field MRI: Technological Advances & Clinical Applications*, Heidelberg, Germany, March 2016.
127. Gupta A, Denney T, Aban I, Loyaga-Rendon R, Tallaj J, Gupta H, "Novel Non-invasive Assessment Of Pulmonary Arterial Impedance Using Cardiac Magnetic Resonance Imaging." *American College of Cardiology 65th Annual Scientific Session*, April 2016.
128. Deshpande R, Deshpande G, Venkataraman A, Katz JS, Denney Jr., TS and Dretsches MN, "Identifying Foci of Brain Disorders from Effective Connectivity Networks," *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
129. Deshpande R, Deshpande G, Venkataraman A, Katz JS, Denney Jr., TS and Dretsches MN, "Brain Network Segregation and Integration is altered in Soldiers with Post-traumatic Stress Disorder and Mild Traumatic Brain Injury," *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
130. Deshpande G, Deshpande R, Yan W, Katz JS, Denney Jr., TS and Dretsches MN, "Hemodynamic Alterations in Post-traumatic Stress Disorder and Mild Traumatic Brain Injury", *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
131. Gupta H, Gupta A, Denney TS, "Velocity Transfer Function from Phase Contrast MRI - A Non-Invasive Method for Assessing Pulmonary Arterial Stiffness and Impedance." *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
132. Beyers, RJ, Yu, M, Schwartz, D, Salibi, N, Goldsmith, C, Denney, T, "Cardiac in vivo T1-Mapping with Novel Reactive Oxygen Species Sensing Agent Specifically Detects Cardiac Oxidative Stress in Doxorubicin-treated Rats." *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
133. Beyers, RJ, Vigneault, DM, Schwartz, D, Salibi, N, Bluemke, DA, Denney, T, "Preliminary Results: Cardiac Cine "Watermark" MRI provides both Anatomical Function via Magnitude Cine and 2D Myocardial Strain via Spatially Modulated Phase." *Proceedings of the 24th Annual Meeting of the International Society for Magnetic Resonance in Medicine*, Singapore, May 2016.
134. Goodman, Adam; Robinson, Jennifer; Denney, Thomas; Salibi, Nouha; Katz, Jeffrey. Neural Correlates of Abstract and Concrete Rule use within the Prefrontal Cortex. 2017 *Organization for Human Brain Mapping (OHBM) Annual Meeting*. Vancouver, Canada. June, 2017. HBM-17-0167.
135. Rangaprakash, D; Dretsches, Michael; Venkataraman, Archana; Katz, Jeffrey; Denney, Thomas; Deshpande, Gopikrishna. Identifying Disease Foci from Static and Dynamic Effective Connectivity Networks: Illustration in Soldiers with Trauma. 2017 *Organization*

- for Human Brain Mapping (OHBM) Annual Meeting. Vancouver, Canada. June, 2017. HBM-17-0169
136. Gawne, T.J., Overbeek, G.J., Killen, J.F., White, D.M., Reid, M.A., Salibi, N., Denney, T.S., Lahti, A.C. A Multimodal Magnetoencephalography, 7T fMRI Stroop, and 7T MRS Spectroscopy Study in First Episode Psychosis. *International Congress on Schizophrenia Research (ICOSR)* San Diego, March 24-28, 2017
 137. Reid MA, Weathers FW, Denney TS, Petri JM, and Kramer LB. Heterogeneity of the DSM-5 PTSD diagnostic criteria: a quantitative analysis. *12th Annual Amygdala, Stress, and PTSD Conference*. Bethesda, MD. April 18, 2017.
 138. Murphy, J. E., Busler, J. N., Jantzen, B., Thomas, M., Robinson, J. L., Yanes, J. A., Reid, M., Katz, J. S., Denney, T. S., & Dretsch, M. N. *12th Annual Amygdala, Stress, and PTSD Conference*. Bethesda, MD. April 18, 2017.
 139. Overbeek, G., Gawne, T., White, D., Reid, M., Salibi, N., Denney, T., and Lahti, A. A combined 7T Stroop fMRI and MRS study in first episode schizophrenia, *International Congress on Schizophrenia Research (ICOSR)*, San Diego, California, 2017.
 140. Gawne, T., Overbeek, G., Killen, J., White, D., Reid, M., Salibi, N., Denney, T., Lahti, A. A multimodal magnetoencephalography, 7T fMRI Stroop, and 7T MRS spectroscopy study in first episode psychosis, *International Congress on Schizophrenia Research (ICOSR)*, San Diego, California, 2017.
 141. Beyers RJ, Vigneault D, Salibi N, Bluemke DA, Denney TS, “Accelerated Cardiac Cine “Watermark” MRI Provides Cardiac Function Via Magnitude Cine and 2D Myocardial Strain Via Spatially Modulated Phase,” Abstract 3143, *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Honolulu, Hawaii April 2017.
 142. Deshpande R, Dretsch MD, Denney TS, Katz J, Deshpande G, “Effective Connectivity Network of Emotion Regulation in Soldiers with Trauma,” Abstract 510, *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Honolulu, Hawaii April 2017.
 143. Zhang X, Lloyd SG, Gupta H, Davies J, Salibi N, Dell’Italia LJ, Denney TS, “Four Chamber Endocardial Surface Reconstruction from Cardiac MRI Data,” Abstract 3156, *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Honolulu, Hawaii April 2017.
 144. Syed M, Deshpande R, Dretsch MD, Denney TS, Katz J, Deshpande G, “Investigating Brain Connectomic Alterations in PTSD and PCS Using the Reproducibility of Independent Components Obtained from Resting-State Functional MRI Data,” Abstract 0511, *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Honolulu, Hawaii April 2017.
 145. Zhang X, Lloyd SG, Gupta H, Salibi N, Davies J, Dell’Italia LJ, Denney TS, “Left Atrial Enlargement and Systolic Failure Measured by Cardiac MRI in Severe Isolated Mitral Regurgitation with Preserved Left Ventricular Ejection Fraction,” Abstract 2868. *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Honolulu, Hawaii April 2017.
 146. Gray-Edwards H, Diffie E, Randle A, Gross A, Salibi N, Ellis L, Beyers RJ, Sena-Esteves M, Denney TS, Martin D, “Longitudinal 7T MRI and MRS in a Sheep Model of Tay-Sachs Disease and the Effect of AAV Gene Therapy,” Abstract 4644. *25th Annual*

- Meeting of the International Society of Magnetic Resonance in Medicine, Honolulu, Hawaii April 2017.*
147. Vigneault D, Beyers RJ, Liu C, Noble A, Denney TS, Bluemke DA, "Motion Tracking in Cardiac MRI: Cine Watermark Tracking of Myocardial Strain," Abstract 4757. *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine, Honolulu, Hawaii April 2017.*
 148. Beyers RJ, Schwartz D, Hutchinson T, Ward M, Salibi N, Goldsmith C, Denney TS, "Simultaneous Cardiac and Renal Oblique-Slice T1-Mapping Differentiates Contrast Agent Activity in Normal and Doxorubicin-Treated Rats," Abstract 4877, *25th Annual Meeting of the International Society of Magnetic Resonance in Medicine, Honolulu, Hawaii April 2017.*
 149. Beyers, RJ, Salibi, N, Denney, T, "Cardiac Balanced SSFP 2D Cine DENSE for Myocardial Strain with comparison to Spiral 2D Cine DENSE," Abstract 2953, *Annual Meeting of the International Society of Magnetic Resonance in Medicine, Paris, France June 2018.*
 150. Beyers, RJ, Salibi, N, Denney, T, "Cardiac Single Breath-hold Balanced SSFP Cine 'Watermark' provides Cardiac Function via Magnitude and 2D Myocardial Strain via Phase," Abstract 0367, *Annual Meeting of the International Society of Magnetic Resonance in Medicine, Paris, France June 2018.*
 151. Bashir, A, Zhang, J, Salibi, N, Beyers, RJ, Denney, T, "Creatine Kinase Rate Constant in the Human Heart at 7T: A Novel Superfast Magnetization Saturation Transfer Method," Abstract 0622, *Annual Meeting of the International Society of Magnetic Resonance in Medicine, Paris, France June 2018.*
 152. Zhang, X, Gupta, H, Davis, J, Lloyd, SG, Dell'Italia, LJ Denney, TS, "Left Atrial Surface Strain from Cine MRI Data in Patients with Mitral Regurgitation," Abstract 2968, *Annual Meeting of the International Society of Magnetic Resonance in Medicine, Paris, France June 2018.*
 153. Gawne, T.J., Overbeek, G.J., Killen, J.F., White, D.M., Reid, M.A., Salibi, N., Denney, T.S., Ellis, C.A. Lahti, A.C. Multimodal Imaging in First Episode Psychosis: Magnetoencephalography, 7T fMRI Stroop, and 7T MRS Spectroscopy. *Schizophrenia International Research Society Conference, Florence Italy, April 2018.*
 154. Gawne, T.J., Overbeek, G.J., Killen, J.F., White, D.M., Reid, M.A., Salibi, N., Denney, T.S., Ellis, C.A. Lahti, A.C. A Combined Magnetoencephalography, 7T fMRI, and 7T MRS Spectroscopy Study in First Episode Psychosis. *Human Brain Mapping, Abstract 1424, Singapore, June 2018.*
 155. Anz, AW, Edison, J, Denney; TS, Branch, EA, Walz, CR, Kohner, AB, Brock, KV, Goodlett, MD, 3T MRI Mapping is a Valid In-Vivo Method to Quantitatively Evaluate the ACL: Rater Reliability and Normative Values, *Orthopaedic Research Society 2019 Annual Meeting, Austin, Texas, February 2-5, 2019.*
 156. Proessel, F, Sterczala, AJ, Beethe, AZ, Dunn-Lewis, C, Connaboy, C, Nindl, BC, Deshpande, G, Katz, JS, Denney, TS, Dretsch, MN, Structural Network Topology of Military Service Members with PTSD, and PTSD-mTBI Comorbidity. *Neuroscience 2019, October 19-23, Chicago, IL.*
 157. Sharifov O, Murphy J, TallajJ, Denney TS, Gupta H, Prabhu SD, Lloyd SG, CMR-derived left atrial volumetric and strain parameters identify low symptomatic LV diastolic dysfunction in patients with preserved LV ejection fraction, regardless of LV filling

- pressure at rest, *Society for Cardiovascular Magnetic Resonance (SCMR) 22nd Annual Scientific Sessions*, Bellevue, Washington, February 6-9, 2019.
158. Gamble FN, Williams L, Reighard S, Calhoun DA, Denney TS, Dell'Italia LJ, Lloyd SG, Determining diastolic dysfunction by modeling the untwisting of the left ventricle as a damped harmonic oscillator: dynamic approach, *Society for Cardiovascular Magnetic Resonance (SCMR) 22nd Annual Scientific Sessions*, Bellevue, Washington, February 6-9, 2019.
159. Aufan MR, Gamble FN, Calhoun DA, Dell'Italia LJ, Denney TS, Gupta H, Lloyd SG, Measurement of Left Ventricle Shear Modulus Using Tagged Cine CMR: Static Approach, *Society for Cardiovascular Magnetic Resonance (SCMR) 22nd Annual Scientific Sessions*, Bellevue, Washington, February 6-9, 2019.
160. Adil Bashir, Rajesh Amin, Salaar Arif, Nila Ghanei and Thomas Denney, Assessment of Intra-hepatocellular Lipid Content by Magnetic Resonance Spectroscopy. *Boshell Diabetes and Metabolic Diseases Research Program at Auburn University 12th Annual Research Day*, February 15, 2019.
161. Nila Ghanei, Manoj Govindarajulu, Jared Senfeld, Sieun Yoo, Adil Bashir, Thomas Denney and Rajesh Amin, A Novel PPAR-GAMMA Agonist Modulates Steatosis in a Model of NAFLD through the HGF/c-MET Signaling Axis. *Boshell Diabetes and Metabolic Diseases Research Program at Auburn University 12th Annual Research Day*, February 15, 2019.
162. Beyers, RJ, Salibi, N, Denney, Thomas, "Balanced SSFP Highly Accelerated Cine 'Watermark' Quantifies 2D Myocardial Strain with comparison to 2D Spiral Cine DENSE," Abstract 1082, *Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Montreal, Canada June 2019.
163. Beyers, RJ, Salibi, N, Denney, Thomas, "Highly Accelerated Balanced SSFP Cardiac Cine 3D-DENSE Quantifies Human 3D Myocardial Strain," Abstract 2113, *Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Montreal, Canada June 2019.
164. Mahmud, SZ, Gladden, B, Kavazis, A, Motl, R, Denney, TS, Bashir, A, "Simultaneous Measurement of Perfusion and T2* in Calf Muscle at 7T with Dynamic Exercise using Radial Acquisition," Abstract 0414, *Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Montreal, Canada June 2019.
165. Sharifov, O, Denney Jr, TS, Wells, JM, Payne, G, Gulati, S, Gupta, H, Dransfield, M, Lloyd, SJ, "Velocity transfer function in the right pulmonary artery correlates with right ventricular remodeling and pulmonary functional impairments in COPD," Abstract 1976, *Annual Meeting of the International Society of Magnetic Resonance in Medicine*, Montreal, Canada June 2019.
166. Aufan, MR, Gupta, H, Denney, TS, Lloyd, SG, "Geometric Model of LV Ejection Fraction Based on MRI Derived Circumferential and Longitudinal Strain," *Society for Cardiovascular Magnetic Resonance (SCMR)*, Orlando, Florida, 2020.
167. Reid MA, Whiteman SE, Weathers FW, Denney TS, 7T Functional Magnetic Resonance Spectroscopy of Metabolite Variations During Working Memory in Trauma-Exposed Individuals, *59th Annual Meeting of the American College of Neuropsychopharmacology*, December 6-9, 2020, Virtual Meeting.
168. Reid MA, Whiteman SE, Weathers FW, Denney TS, Majumdar J, Yanes JA. 7T functional magnetic resonance spectroscopy of metabolite variations during working memory in trauma-exposed individuals. 36th Annual Meeting of the International Society for Traumatic Stress Studies. November

- 4-14, 2020. Atlanta, Georgia.
169. Beyers RJ, Bashir A, Denney TS, Accelerated-x4 Balanced-SSFP Cardiac Cine 2D/3D DENSE with Phase-Cycled Encoding for Improved Performance, *2020 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Virtual Conference & Exhibition.*
 170. Bashir A, Zhang J, Denney TS, Phosphate Metabolite T1 Relaxation Times, ATP Hydrolysis Flux and Creatine Kinase Reaction Kinetics in the Human Skeletal Muscle. *2020 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Virtual Conference & Exhibition.*
 171. Mahmud SZ, Denney TS, Beyers RJ, Bashir A, Measurement of Blood-Brain Barrier Permeability in Human Brain using Magnetization Transfer Effect at 7T, *2020 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Virtual Conference & Exhibition.*
 172. Beyers RJ, Bashir A, Denney TS, Accelerated 3-Tesla Cardiac T2-Mapping at End-Systole for Improved Transmural Map Consistency and Accuracy, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 173. Beyers RJ, Bashir A, Denney TS, Multi-Frequency Magnetization Transfer (MFMT) for Improved High-Resolution Human Hippocampal Imaging at 7 Tesla, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 174. Bashir A, Zhang J, Denney TS, Measurement of ATP Hydrolysis Rates in the In Vivo Heart at 7T, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 175. Adnani SN, Denney Jr TS, Sukstansky A, Yablonskiy D, Bashir A, Application of Voxel Spread Function Method for Correction of Magnetic Field Inhomogeneity at 7T, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 176. Mahmud SZ, Graff EC, Martin DR, Denney TS, Bashir A, Measurement of Blood-Brain Barrier Disruption in Cats with an Inherited Neurodevelopmental Abnormality using Magnetization Transfer-ASL at 7T, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 177. Mahmud SZ, Denney TS, Bashir A, Reproducibility and Validation of Water Permeability in Human Brain using Magnetization Transfer based ASL at 7T, *2021 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition.*
 178. Andrikopoulou E, Li Y, Zheng J, Denney T, Pat B, Ahmed M, Dell'Italia L, Can Machine Learning Models Help Us Predict Postoperative Outcomes In Primary Mitral Regurgitation, *American College of Cardiology 71st Annual Scientific Session & Expo, Atlanta, GA, May 15-17,2021.*
 179. Andrikopoulou E, Li Y, Denney T, Zheng J, Billor N, Pat B, Ahmed M, Dell'Italia L, Significant Reduction In Left Atrial Function In Patients With Moderate-Severe Primary Mitral Regurgitation, *American College of Cardiology 71st Annual Scientific Session & Expo, Atlanta, GA, May 15-17,2021.*

180. Andrikopoulou, E, Pat B, Bajaj NS, Powell PC, Aban I, Denney TS, Dell'Italia L, Integrative characterization of asymptomatic vs. symptomatic patients with moderate-severe primary mitral regurgitation, *European Heart Journal - Cardiovascular Imaging*, Volume 22, Issue Supplement 1, January 2021.
181. Andrikopoulou E, Pat B, Bajaj NS, Powell PC, Aban I, Denney TS, Dell'Italia L, CMR assessment of primary mitral regurgitation: is it time for new guidelines? *Virtual Scientific Sessions, Society of Cardiovascular Magnetic Resonance*, 02/18/2021 – 02/20/2021.
182. Andrikopoulou E, Fang YH, Pat B, Bajaj NS, Powell PC, Aban I, Denney TS, Dell'Italia LJ, Evaluation of machine learning algorithms to predict postoperative outcomes in asymptomatic patients with moderate-severe primary mitral regurgitation, *Virtual Scientific Sessions, European Congress of Radiology*, 03/03/2021 – 03/07/2021.
183. Aufan MR, Sharifov O, Gupta H, Denney TS, Lloyd SG, “Synchronization of Non-Simultaneous Pressure-Volume Data from Pressure Catheter and MRI Acquisitions Using P-t/V-t Derivative Profile and Electrocardiogram.” *Society for Cardiovascular Magnetic Resonance (SCMR) Virtual Scientific Sessions 2021*. 2/18/2021 - 3/31/2021.
184. Aufan MR, Miller NJ, Jost ZT, Sharifov OF, Gupta H, Denney TS, Lloyd SG, “Determination of Aortic and Mitral Valve Opening and Closing Times Using Only LV Pressure Data.” *American Heart Association (AHA) Scientific Sessions 2021*. November 13-15, 2021.
185. Beyers, RJ and Denney, TS, Consistent and Accurate 3T Cardiac End-Systolic Adiabatic T2-Mapping, *2022 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition*, London, UK.
186. Bashir, A, Skidmore, FM, and Denney, TS, Glutathione MRS of the Substantia Nigra in Parkinson Disease, *2022 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition*, London, UK.
187. Beyers, RJ and Denney, TS, Improved 7T High-Resolution Human Hippocampal Imaging with Multi-Frequency Magnetization Transfer (MFMT), *2022 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition*, London, UK.
188. Bashir, A, Lahti, A, Kraguljac, N, Denney, TS, Visual Cortex Bioenergetic Abnormalities in Schizophrenia, *2022 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition*, London, UK.
189. Mahmud, SZ, Lahti, A, Kraguljac, N, Denney, TS, Bashir, A, Investigation of Blood-Brain Barrier Disruption in Schizophrenia using Magnetization Transfer-ASL at 7T, *2022 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition*, London, UK.
190. Reid MA, Whiteman SE, Denney TS, Camden AA, Jeffers SM, Weathers FW, 7T Functional Magnetic Resonance Spectroscopy of Glutamate Variations During Working Memory in PTSD, *61st Meeting of the American College of Neuropsychopharmacology*, Phoenix, AZ October 4-7, 2022
191. Mahmud SZ, Adnani SN, Denney TS, Bashir A, High Resolution Spinal Cord Imaging at 7T with Rosette Trajectory and Compressed Sensing, Abstract 1557, 2023

International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition, Toronto, Canada. June 3-8, 2023.

192. Adnani SN, Mahmud SZ, Denney TS, Bashir A, Background Field Inhomogeneity Correction for High-Resolution T2* Mapping of the Human Cervical Spinal Cord at 7T, Abstract 4077, *2023 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition, Toronto, Canada. June 3-8, 2023.*
193. Beyers RJ, Denney TS, Background Field Improved 3T Adiabatic T2-Prep for Cardiac T2-Mapping, Abstract 4133, *2023 International Society for Magnetic Resonance in Medicine (ISMRM) & Society of Magnetic Resonance Technologists (SMRT) Conference & Exhibition, Toronto, Canada. June 3-8, 2023.*
194. Reid MA, Whiteman SE, Denney TS, Camden AA, Jeffirs SM, Weathers FW. 7T functional magnetic resonance spectroscopy of glutamate variations during working memory in PTSD. *Annual Meeting of the Society of Biological Psychiatry. San Diego, CA. April 27-29, 2023.*
195. Lloyd SG, Aufan MR, Gupta H, Sharifov OF, Denney TS, Non-invasively Measured Myocardial Torsional Modulus: Association with Invasive Evaluation, *2024 Global Cardiovascular Magnetic Resonance (CMR) Conference. London, UK January 25-27, 2024 .*

Theses

1. T.S. Denney Jr., "Stochastic Estimation of Deformable Motion from Magnetic Resonance Tagged Cardiac Images," Ph.D. Thesis, The Johns Hopkins University, Department of Electrical and Computer Engineering, August, 1994. **Thesis supervisor:** Jerry L. Prince.
2. T.S. Denney Jr., "A Continuous-Discrete Extended Kalman Filter for the Small Expendable-Tether Deployment System," M.S. Thesis, Auburn University, Electrical Engineering Department, August, 1990. **Thesis supervisor:** Michael E. Greene.

INVITED TALKS

1. "Optimal Brightness Functions for Optical Flow Estimation of Left Ventricular Motion," BEIP Seminar, National Institutes of Health, March 11, 1993.
2. "3-D Strain Reconstruction from Planar Tagged Cardiac MR Images," Division of Cardiovascular Disease Cardiology NMR Conference, University of Alabama at Birmingham, February 17, 1995.
3. "Model-free Reconstruction of Cardiac Strain: Spatial Resolution and Noise Immunity," Cardiac Magnetic Resonance Imaging Group Seminar, The Johns Hopkins University School of Medicine, August 7, 1996.
4. "Unsupervised Reconstruction of Left Ventricular Strain," Cardiac Magnetic Resonance Imaging Group Seminar, The Johns Hopkins University School of Medicine, July 30, 1998.
5. "Unsupervised Reconstruction of Left Ventricular Strain," Biomedical Engineering Seminar Series, University of Alabama at Birmingham, September 14, 1998.
6. "Planning for a Siemens 7T System," Siemens UHF User Meeting, Leipzig, Germany, Sept. 13, 2009.

7. "Quantitative Techniques in Cardiovascular MRI," BME Seminar Series, University of Alabama at Birmingham, Sept. 13, 2013.

PATENTS

"Method and System for Evaluating Blood Vessel," (U.S. Patent No. 10,893,809) U.S. Patent and Trademark Office. Awarded January 2021. Inventors: Denney Jr TS, Gupta H, Gupta A.

"Method and System for Evaluating Blood Vessel," (Japanese Patent No. JP 6888086) Japan Patent Office. Awarded June 2021. Inventors: Denney Jr TS, Gupta H, Gupta A.

"System And Method Of Functional MRI Of The Neural System In Conscious Unrestrained Dogs" (U.S. Patent No. 11,013,426) U.S. Patent and Trademark Office. Awarded May 2021. Inventors: Gopikrishna Deshpande, Thomas S. Denney, Paul Waggoner (College of Veterinary Medicine), Edward E. Morrison (College of Veterinary Medicine), Vitaly J. Vodyanoy (College of Veterinary Medicine), Ronald J. Beyers (AU MRI Research Center) & Hao Jia (AU MRI Research Center).

"Information Processing Method, Device, and System for Evaluating Blood Vessels," (U.S. Patent Application 16/900734) U.S. Patent and Trademark Office. Submitted 2020. Inventors: Denney Jr TS, Gupta H, Gupta A.

"Method and System for Evaluating Blood Vessel," (Canadian Patent 92909-01 PAT2263CA00) Canadian Intellectual Property Office. Granted 4/13/2024. Inventors: Denney Jr TS, Gupta H, Gupta A.

"Method and System for Evaluating Blood Vessel," (Chinese Patent 2023011800885920) The State Intellectual Property Office of the People's Republic of China. Granted 1/28/2023. Inventors: Denney Jr TS, Gupta H, Gupta A.

FUNDING

1. Alabama Space Grant Consortium - "Modeling and simulation of a tethered satellite system," 9/15/95---9/14/98, \$60,000, PI: Thomas S. Denney Jr., Ph.D.
2. Auburn University Research Grant-in-Aid - "Estimation of Strain from Magnetic Resonance Tagged Cardiac Images," 4/15/95---9/15/96, \$2,982, PI: Thomas S. Denney Jr., Ph.D.
3. SUN Microsystems, Inc., "Clinical Reconstruction of Cardiac Mechanical Function from Tagged Magnetic Resonance Image (MRI) Data," \$90,000 (equipment grant), Thomas S. Denney Jr. (PI).
4. Whitaker Foundation - "Unsupervised Reconstruction of Left Ventricular Strain from MRI Data," 6/1/96---5/31/99, \$210,000, PI: Thomas S. Denney Jr., Ph.D.
5. Whitaker Foundation Transitional Funding Program - "Unsupervised Reconstruction of Left Ventricular Strain from MRI Data" 6/1/99-5/31/00, \$68,095, PI Thomas S. Denney Jr.
6. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), R01-HL61343, "Unsupervised Reconstruction of Left Ventricular Strain," 7/99-6/04, \$610,000, PI Thomas S. Denney Jr., Ph.D.

7. FAA – “Structure and Function of the Canine Olfactory System and the Detection of Illicit Substances,” Edward E. Morrison (PI), 8/01-7/04, \$870,000. Role: Investigator responsible for olfactory response modeling and performing computational fluid dynamic (CFD) simulations of air flow through canine nasal cavities.
8. ONDCP – “Canine Olfactory System: Structure, Function and Detection of Illicit Substances,” Edward E. Morrison (PI), 8/01-7/04, \$872,861. Role: Investigator responsible for olfactory response modeling and performing computational fluid dynamic (CFD) simulations of air flow through canine nasal cavities.
9. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), P50-HL077100 (SCCOR), “Left Ventricular Remodeling in Heart Failure,” 1/05-12/10, \$17,627,458 (Total Award), \$1,012,053 (AU CoE Subcontract). PI (of AU CoE Subcontract) Thomas S. Denney Jr., Ph.D. Role: Responsible for analyzing all cardiac magnetic resonance images (MRI) acquired during the project.
10. Actelion Corp, "COMPASS3 MRI Core Lab", 2/2008-2/2011, \$260,000. Subcontract under UAB. Role: PI for AU subcontract. Responsible for analyzing all cardiac MRI data.
11. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), 1 R01 HL104018-01 (R01), “Left Ventricular Torsional Hysteresis: A Global Parameter for Diastolic Function,” 7/10-6/16, \$1,816,031 (Total Award), \$706,150 (AU CoE Subcontract). PI (of AU CoE Subcontract) Thomas S. Denney Jr., Ph.D. Role: Responsible for analyzing all cardiac magnetic resonance images (MRI) acquired during the project.
12. Auburn University Internal Grants Program, “31P Magnetic Resonance Spectroscopy of the Canine and Human Heart,” 2/1/2013-1/31/16, \$200,000 (\$50,000 MRI Center match). Role: Principal Investigator. (Ray Dillon, College of Veterinary Medicine, Co-PI)
13. Army Research Office/Battelle, “MRI Brain Imaging of Post-Concussion Syndrome.” TCN 12058, 10/2012-9/2013, \$118,400. Role: Principal Investigator
14. Tanner Center for Multiple Sclerosis / Questcor “A Comprehensive Analysis of Relapse in Multiple Sclerosis,” 6/13-5/16, \$44,200, Role: AU Principal Investigator
15. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), P01 HL051952, (Ferrario, PI) “Vaso-hormonal mechanisms in hypertension,” 4/2015-3/2020, \$108,00. PI (of AU CoE Subcontract) Thomas S. Denney Jr., Ph.D. Role: Consultant
16. National Institutes of Health (NIH) National Institutes of Mental Health (NIMH), F32 MH106282 (Reid), “7T functional MRS to study metabolite variations during working memory” 9/1/2015 – 8/31/2018, \$162,642. Role: Co-mentor (with Dr. Jeff Katz) for Dr. Reid.
17. National Institutes of Health (NIH) National Institutes of Neurological Disorders and Stroke (NINDS), F32 NS080488 (Gray-Edwards), “In vivo magnetic resonance-based analysis of inherited neurologic disease after gene therapy” 4/1/2013 – 3/31/2016, \$196,458. Role: Co-mentor (with Dr. Douglas Martin) for Dr. Gray-Edwards.
18. Lysogene Inc, (Martin, PI), “IND-supporting studies for AAV gene therapy in GM1 gangliosidosis,” 3/6/2015 – 3/5/2017, \$999,031, Role: Co-Investigator
19. National Institutes of Health (NIH) National Center for Advancing Translational Sciences (NCATS), U54 TR001368-01 (Kimberly, PI), “UAB Center for Clinical and Translational Science (CCTS) Partner Network,” 09/2015 – 8/2020, \$645,855 (AU Subcontract), Role: AU Site PI
20. National Institutes of Health (NIH) National Institutes of Neurological Disorders and Stroke (NINDS), R21 NS093256 (Liu, PI), “Passive Eye Response as a Surrogate for Brain Response to Head Acceleration,” 7/15-6/17, \$17,637, Role: Consultant

21. National Institutes of Health (NIH) National Institutes of Neurological Disorders and Stroke (NINDS), R01 NS094743, "Understanding hippocampal internal architecture in human temporal lobe epilepsy – from MRI to epigenetics," 9/2016-8/2021, \$302,259, Role: Co-Investigator.
22. Geneva Foundation, "Evaluation of The King-Devick Test to Assess Eye Movements," 6/2015-12/2018, \$90,000, Role: PI of the Auburn University subcontract.
23. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), U01 HL134764, (Zhang, PI) "Integrated Cellular and Tissue Engineering For Ischemic Heart Disease," 9/2016-5/2023, \$367,138. Role: Co-Investigator.
24. Varian Inc., RAD 1601, (Bredel, PI), "Pilot Trial of Frameless Virtual Cone Stereotactic Radiosurgical Thalamotomy for Intractable Tremor and Advanced Functional Connectivity Parcellation of the Thalamus." 10/2017 – 9/2018, \$310,737 (AU Subcontract: \$22,000). Role: PI of AU Subcontract.
25. National Institutes of Health (NIH) National Center for Advancing Translational Sciences (NCATS), 1UL1TR003096 (Kimberly, PI), "UAB Center for Clinical and Translational Science (CCTS) Partner Network," 05/2019 – 4/2024, \$692,005 (AU Subcontract), Role: AU Site PI
26. National Institutes of Health (NIH) National Heart Lung and Blood Institute (NHLBI), R41HL145838, (Denney, PI) "A New Non-Invasive Approach for Accessing Pulmonary Arterial Stiffness in Patients with Pulmonary Hypertension," 7/2019-6/2022, \$488,009. Role: Principal Investigator.

TEACHING

Students Graduated

1. Zhaojin Han, (Ph.D., Electrical and Computer Engineering, 1999), "Modeling and Simulation of Random Vector Fields Based on Fractional Brownian Motion." Currently with Oxford Instruments.
2. Nguyen Dang Thanh, (Ph.D., Electrical and Computer Engineering, 1999), Co-advisor: Stanley J. Reeves, Ph.D., "Optimal Acquisition of Magnetic Resonance Tagged Images for Heart Wall Motion Estimation." Currently a research professor in magnetic resonance angiography with Cornell University.
3. Way Sun, (MS, Computer Science, 2000), "Motion Structure And Depth Estimation From Stereo Vision Without Correspondence." Currently with Hitachi Inc.
4. Litao Yan, (Ph.D., Electrical and Computer Engineering, 2000), "Unsupervised Cardiac Motion Reconstruction from Tagged MR Images." Currently with GE Medical Systems.
5. Kenneth Richard Hammett, (MS, Electrical and Computer Engineering, 2001), "Modeling and simulation of severed space tethers." Currently with the National Institutes of Health.
6. Rajan Panchapeskan, (MS, Electrical and Computer Engineering, 2001), "Analysis of the Effect of Sniff Frequency on Canine Olfaction." Currently a Principal Product Manager at Oracle Cloud Infrastructure.
7. Jin Li, MS, (MS, Electrical and Computer Engineering, 2004), "Parallel Reconstruction Of Myocardial Strain From Tagged Cardiac MR Images."
8. Deng Xiang, MS, (Ph.D., Electrical and Computer Engineering, 2004), "Fast three dimensional myocardial strain reconstruction from tagged MR images." Currently Vice President of Research & Development, EyeSmart Technology Ltd.

9. Kaustabh Kulkarni, (MEE, Electrical and Computer Engineering, 2004), "Semiautomatic Segmentation of M-Mode Cardiac Ultrasound. Currently with Siemens Corp in India.
10. Santosh Pandey (MS, Electrical and Computer Engineering, 2005), "Target Detection with Ultra-Wideband Radar." Currently with Cisco, San Francisco, California.
11. Kezhou Wang, (PhD, Electrical and Computer Engineering 2006), "Numerical Modeling of Nasal Cavities and Air Flow Simulation." Currently Director of Engineering and Research, Vassol, Inc, Chicago, Illinois.
12. Jin Li, (PhD, Electrical Engineering, 2006), "Tag Line Tracking and Cardiac Motion Modeling from Tagged MRI."
13. Craig Davis, (MS, Electrical and Computer Engineering, 2006), "Applications of Multi-Channel Filter Banks to Textured Image Segmentation." Currently at Dynetics, Huntsville, Alabama.
14. Venkatesh, Bharath Ambale, (MEE, Electrical and Computer Engineering, 2007). Currently an Assistant Professor in the Department of Radiology at Johns Hopkins University.
15. Jiawei, Zhang, (MEE, Electrical and Computer Engineering, 2008). Broadcom, Irvine, California.
16. Ramenahalli, Sudarshan, (MEE, Electrical and Computer Engineering, 2009). Currently a PhD student at Johns Hopkins University.
17. Feng, Wei, (Ph.D. Electrical and Computer Engineering, 2009), "Global and Local Cardiac Functional Analysis with Cine MR Imaging: A Non-Rigid Image Registration Approach." Currently a software engineer at SalesforceIQ, Palo Alto, California.
18. Venkatesh, Bharath Ambale, (PhD, Electrical and Computer Engineering, 2010), ".4D Strain from Tagged Magnetic Resonance Images by Unwrapping the Harmonic Phase Images." Currently an Assistant Professor in the Department of Radiology at Johns Hopkins University.
19. Zha, Wei, (PhD, Electrical and Computer Engineering, 2012), "Novel Techniques for Measuring Cardiac Shape and Mechanics with Magnetic Resonance Imaging." Currently an Associate Scientist at the University of Wisconsin-Madison.
20. Schiros, Chun Guo, (PhD, Electrical and Computer Engineering, 2012), "Biventricular Active Mesh Model of the Heart and Analysis of Morphologic Changes Toward Physiology and Pathologies." Currently VP, Model Validation Manager, Model Risk Management and Validation at Regions Bank, Birmingham, Alabama.
21. Nikhil Jha, (MS, Electrical and Computer Engineering, 2014) "Quantification Techniques for Arterial Blood Flow and the Left Atrium," Currently a consultant at Deloitte Australia
22. Xiaoxia Zhang, (MEE, Electrical and Computer Engineering, 2014). Currently a Postdoctoral Fellow at New York University.
23. Ming Li, (PhD, Electrical and Computer Engineering, 2015), "Motion Estimation from Tagged MR Images and Application to Cardiac Strain Evaluation and Functional Analysis of Ocular Tissues." Currently a Data Analysis Engineer at Carl Zeiss IMT.
24. Rangaprakash Deshpande, (PhD, Electrical and Computer Engineering, 2017) "Brain Connectivity Modeling in Soldiers with Mild Traumatic Brain Injury and Posttraumatic Stress Disorder." Currently a Postdoctoral Fellow at Harvard University.
25. Zhang, Xiaoxia, (Ph.D. Electrical and Computer Engineering, 2018), "Four-Chamber Endocardial Surface Reconstruction from MR Images and Application to Geometry and Mechanics Analysis on Healthy Subjects and Mitral Regurgitation Patients." Currently a Postdoctoral Fellow at New York University.

Graduate Students

1. Xuan Wang, MS (PhD, Electrical and Computer Engineering, expected 2024)

Courses Developed

1. Introduction to Computed Imaging Systems (ELEC6810): Introduction to the physics, mathematics, and engineering principles involved in producing medical images such as magnetic resonance imaging (MRI) and computed tomography (CT).
2. Applied Image Processing (EE690): Basic image processing and computer vision techniques for quantitative analysis of scientific data. Project required.
3. Stochastic Estimation and Control (EE654): Design of controllers and state estimators when there are uncertainties in the process and/or measurements. Methods of modeling uncertainties are also discussed.

Courses Taught

1. Digital Signal Processing (ELEC6410): Digital processing of signals, sampling, difference equations, discrete time Fourier transforms, discrete and fast Fourier transforms, digital filter design.
2. Introduction to Electrical and Computer Engineering (ENGR1110): Freshmen level introduction to engineering design, engineering teams, graphical presentation, technical writing, oral presentation.
3. Probabilistic Methods for Electrical Engineers (EE311, ELEC3800): Introduction to probability, random variables, and random processes including analysis of random signals and noise and reliability of circuits and systems.
4. Signals and Systems I (EE314, ELEC2120): Introduction to continuous time system analysis, Fourier series, Fourier transform analysis, Laplace transform analysis.
5. Linear Feedback Systems (EE351): Analysis and design of continuous-time control systems. Transfer function analysis, PID control, root locus analysis and design, frequency response analysis and design.
6. Discrete and Nonlinear Control Systems (EE452): Analysis and design of discrete-time control systems with emphasis on digital control systems.
7. C++ Programming for Engineers (EE490): Introduction to object oriented programming techniques and the C++ programming language. Applications in numerical integration, electrical circuit modeling, solution of linear equations.
8. Computer Methods in Electrical Engineering (EE200): Introduction to computational techniques, such as high-level language programming, numerical integration, solution of linear systems of equations and the use of numerical software packages.