SMITA SAMPATH

Yale Magnetic Resonance Research Center
300 Cedar Street, TACN131
New Haven, CT-06520-8043, United States.
Phone: (203) 737 5398 (W) Email: smita.sampath@yale.edu

EDUCATION

- **Post-Doctoral Fellow**, Laboratory of Cardiac Energetics, NHLBI, NIH, Besthesda, MD, USA. 2005- 2007
  Supervisor: Dr. Elliot R. McVeigh
  Research Focus: "Cardio Vascular MRI"
- **PhD in Electrical and Computer Engineering**, Image Analysis and Communications Laboratory, Johns Hopkins University, Baltimore, MD, USA. 2004.
  Thesis Title: "Magnetic Resonance Imaging Pulse Sequences for Rapid Imaging of Myocardial Motion and Strain"
  Supervisor: Dr. Jerry. L. Prince
- **Master of Science in Bioengineering**, Magnetic Resonance Systems Laboratory, Texas A&M University, College Station, TX, USA. 1998.
  Thesis Title: "MR guided laser induced thermal therapy".
  Supervisors: Dr. Sohi Rastegar and Dr. Steven M. Wright.
- **Bachelor of Science in Electrical Engineering**, University of Bombay, Mumbai, India. 1996.

EXPERIENCE

- **Assistant Professor**, Department of Diagnostic Radiology, Yale School of Medicine, New Haven, CT, USA. (Nov 2007-current)

HONORS/AWARDS

- **Yale Center for Clinical Investigation (YCCI) Clinical Translational Science Award (CTSA) Scholar Award**. (2008-2010; $60,000)
- **Kingsley Fellowship in Medical Research**, Yale University, USA (2007-2009).
- **Post-Doctoral Intramural Research Training Award (IRTA) Fellowship**, NHLBI, NIH, Bethesda, MD, USA (2004-2006).
- **Abel Wolman Fellowship**, Whiting School of Engineering, Johns Hopkins University, Baltimore, MD, USA (1998-1999).
- **Bioengineering Department Scholarship**, Texas A&M University, TX, USA (1996-1997).

PUBLICATIONS

Peer-Reviewed Journal Papers

1. A combined HARP and SENC pulse sequence for measuring three-dimensional strain. **Sampath S.**, Osman N.F., Prince J.L. Magnetic Resonance Imaging July10, (2008).
2. Simultaneous imaging of myocardial imaging and chamber blood flow using SPAMM & EGGS. **Sampath S.**, Kim J. H., Lederman R.J., McVeigh E.R. Journal of Magnetic Resonance Imaging 27(4): 809-817 (2008).
3. Unsupervised estimation of myocardial displacement from tagged MR sequences using non-rigid registration. Ledesma-Carbayo M.J., Derbyshire J. A., **Sampath S.**, Santos A, Desco M, McVeigh E. R. Magnetic Resonance in Medicine 59(1): 181-189 (2008).
4. Real-time monitoring of cardiac regional function using FastHARP MRI and region-of-interest reconstruction. Abd-Elmoniem K, **Sampath S.**, Osman N.F., Prince J.L. IEEE Transactions on Biomedical Engineering 54(9): 1650-1656 (2007).
5. Phase-sensitive cardiac tagging – REAL TAG. Derbyshire J.A., **Sampath S.**, McVeigh E.R. Magnetic Resonance in Medicine 58(1): 206-210 (2007).
6. High-resolution 3-D flow-independent arteriography of chronic total peripheral occlusions using a T1-W turbo spin echo sequence with inner volume imaging. **Sampath S.**, Raval A. N., Lederman R. J., McVeigh E. R. Magnetic Resonance in Medicine 57(1): 40-49 (2007).
7. Three-dimensional tracking of myocardial material points using a slice following harmonic phase magnetic resonance imaging (SF-HARP-MRI) pulse sequence. **Sampath S.**, Prince J.L. Magnetic Resonance Imaging 25(2): 197-208 (2007).
8. Real-time magnetic resonance imaging-guided endovascular recanalization of chronic total arterial occlusion in a swine model. Raval AN, Karmarkar PV, Guttman MA, Ozturk C, **Sampath S.**, DeSilva R, Aviles RJ, XuM, Wright

VJ, Schenke WH, Kocaturk O, Dick AJ, Raman VK, Atalar E, McVeigh ER, Lederman RJ. Circulation 112(8):1101-1107 (2006).

9. Spatially resolved imaging of myocardial function with strain-encoded MR: comparison with delayed contrast enhanced MR imaging after myocardial infarction. Garot J, Lima J.A., Gerber B.L., **Sampath S.**, Wu K.C., Bluemke D.A., Prince J.L., Osman N.F. Radiology 233(2): 596-602 (2004).
10. Real-time imaging of two-dimensional cardiac strain using a harmonic phase magnetic resonance imaging (HARP-MRI) pulse sequence. **Sampath S.**, Derbyshire A., Osman N.F., Atalar E., Prince J.L. Magnetic Resonance in Medicine 50:154-163 (2003).
11. Quantitative ischemia detection during cardiac magnetic resonance stress testing using real-time FastHARP. Kraitchman D.L., **Sampath S.**, Castillo E., Derbyshire A., Bluemke D.A., Gerber B., Prince J.L., Osman N.F. Circulation 107(15):2025-2030 (2003).
12. Imaging longitudinal cardiac strain on short axis images using strain encoded imaging. Osman N.F., **Sampath S.**, Atalar E., Prince J.L. Magnetic Resonance in Medicine 46:234-334 (2001).

Peer-Reviewed Conference Papers

1. Three-dimensional reconstruction of the moving mitral valve from multi-slice 2-D magnetic resonance images. **Sampath S.**, Kim JH, Lederman RJ, McVeigh ER. Proceedings of the International Society of Optical Engineering Medical Imaging Conference, Feb 2008 6916-34.
2. Imaging the evolution of three-dimensional myocardial strains using a fast MR imaging technique. **Sampath S.**, Osman N.F., Prince J.L., IEEE International Symposium on Biomedical Imaging: Macro to Nano (ISBI), April 2004: 624-627.
3. Tool for automatic real-time regional cardiac function analysis using HARP. Abd-Elmoniem K.Z., **Sampath S.**, Osman N.F., Prince J.L. Proceedings of the International Society of Optical Engineering Medical Imaging Conference, 2003 5029-65.
4. Phantom validation of the Fast HARP pulse sequence. **Sampath S.**, Parthasarathy V., Prince J.L. IEEE International Symposium on Biomedical Imaging, July 2002: 117-120.
5. Imaging longitudinal cardiac strain on short axis images using 3D-HARP. Osman N. F., **Sampath S.**, Prince J. L. Proceedings of the International Society of Optical Engineering Medical Imaging Conference, Feb 2000 3978-22.

Peer-Reviewed Conference Abstracts

1. Imaging the dynamics of cardiac motion and flow simultaneously during exercise bike studies using SPAMM n' EGGS. **Sampath S.**, Derbyshire J.A., Ledesma-Carbayo M.J., and McVeigh E.R. Proceedings of the International Society for Magnetic Resonance in Medicine, 2008.
2. Novel transcatheter mitral valve cerclage annuloplasty attenuates mitral regurgitation and preserves entrapped coronary arteries. Kim J-H, Kocaturk O, Raman V.K., Sonmez M., **Sampath S.**, Yucetas A., Ozturk C., Derbyshire J.A., Guttman M.A., Kim A.H., Berry C., McVeigh E.R., Lederman R.J. The SCAI Annual Scientific Sessions (in partnership with ACC), 2008.
3. Imaging the dynamics of cardiac motion and flow simultaneously during exercise bike studies using SPAMM n' EGGS. **Sampath S.**, Derbyshire J.A., and McVeigh E.R. Proceedings of the 19th International Conference on MR Angiography, 2007.
4. Parallel imaging and 2 R-R acquisition for tagged imaging of 100% or more of the cardiac cycle with improved CNR. Derbyshire J.A., Kellman P., **Sampath S.**, McVeigh E.R. Proceedings of the International Society of Magnetic Resonance in Medicine, 2007.
5. Cardiac motion estimation from tagged MRI using multiple source non-rigid registration techniques. Ledesma-Carbayo M. J., Derbyshire J.A., **Sampath S.**, Santos A, Desco M, McVeigh E.R. Proceedings of the International Society of Magnetic Resonance in Medicine, 2007.
6. Phase-sensitive imaging of inversion tags for improved CNR and tag longevity. Derbyshire J. A., **Sampath S.**, Ledesma-Carbayo M.J., McVeigh E.R. Proceedings of the Society for Cardiovascular Magnetic Resonance, 2007.
7. High resolution 3-D black blood angiography of carotid arteries using a Turbo GRASE sequence with inner volume imaging. **Sampath S.**, McVeigh E.R. Proceedings of the 18th International Conference on MR Angiography, 2006.
8. Imaging myocardial motion and chamber blood flow simultaneously using SPAMM SPAMM & EGGS. **Sampath S.**, McVeigh E.R. Proceedings of the International Society of Magnetic Resonance in Medicine Flow and Motion Study Group, 2006.
9. High-resolution 3-D imaging of chronic total occlusions in peripheral vessels using a T-1 weighted Turbo Spin Echo sequence with inner volume imaging. **Sampath S.**, Raval A. N., Lederman R. J., McVeigh E. R. Proceedings of the International Society of Magnetic Resonance in Medicine, 2006.
10. Imaging 2-D myocardial motion and chamber blood flow simultaneously with SPAMM, SPAMM and EGGS (sinusoidal SPAMM and co-sinusoidal SPAMM acquisitions with encoded gradients for gauging speed). **Sampath S.**, McVeigh E. R. Proceedings of the International Society of Magnetic Resonance in Medicine, 2006.

11. Imaging three dimensional myocardial strains using a combined HARP SENC MRI pulse sequence. **Sampath S.**, Osman N.F., Prince J.L. Proceedings of the International Society of Magnetic Resonance in Medicine, 2005.
12. Fast tracking of cardiac material points from SF-CSPAMM images using 3D SF-HARP. Pan L, Sampath S., Prince J.L., Stuber M, Osman N.F. Proceedings of the International Society of Magnetic Resonance in Medicine, 2005.
13. 3D tracking of material points using a combined slice following HARP MR approach. **Sampath S.**,Prince J.L. Proceedings of the International Society of Magnetic Resonance in Medicine, 2004.
14. Real-time imaging of cardiac strain using FastHARP: a comparison between breath-hold and non-breath-hold studies. **Sampath S.**, Derbyshire J.A., Osman N.F., Prince J.L. Proceedings of the Society for Cardiovascular Magnetic Resonance, 2003.
15. Real-time myocardial tagging with harmonic phase MR imaging: A validation study in humans. Castillo E., **Sampath S.**, Derbyshire J.A., Prince J.L., Osman N.F., Bluemke D.A. Proceedings of the Radiological Society of North America, 2002.
16. Regional myocardial function: advances in MR imaging and analysis techniques. Castillo E., Osman N.F., **Sampath S.**, Rehwald W., Prince J.L., Bluemke D.A. Proceedings of the Radiological Society of North America, 2002.
17. Real-Time imaging of myocardial strain patterns using a FastHARP sequence with CSPAMM. **Sampath S.**, Derbyshire J.A., Osman N. F., Prince J.L. Proceedings of International Society of Magnetic Resonance in Medicine, 2002
18. Real-Time two-dimensional myocardial strain acquisition with harmonic phase MR imaging: A validation study in humans. Castillo E., **Sampath S.**, Derbyshire J.A., Pan L., Prince J.L., Osman N. F., Bluemke D.A. Proceedings of International Society of Magnetic Resonance in Medicine, 2002
19. Direct imaging of left ventricular regional dysfunction using SENC MRI. Osman N. F., Garot J., **Sampath S.**, Gerber B., Wu K., Atalar E., Lima J., Prince J.L. Proceedings of the Society for Cardiovascular Magnetic Resonance, 2002.
20. Real-time SENC for the detection of regional dysfunction during dobutamine stress test. Osman N. F., **Sampath S.**, Derbyshire J.A., Castillo E., Bluemke D.A., Zerhouni E., Prince J.L., Kraitchman D. Proceedings of the Society for Cardiovascular Magnetic Resonance, 2002.
21. Real-time detection of acute myocardial ischemia with Fast Harmonic Phase (FastHARP) MR- imaging in an experimental model of coronary occlusion in dogs. Castillo E., Osman N. F., Kraitchman D.L., **Sampath S.**, Derbyshire J.A., Gerber B., Bluemke D.A. et.al. Proceedings of the Radiological Society of North America, 2001.
22. Quantitative ischemia detection during MR stress testing. Kraitchman D.et. al. Proceedings of the American Heart Association, 2001.
23. Real-time imaging of cardiac strain using a Fast HARP sequence. **Sampath S.**, Derbyshire J.A., Osman N.F., Atalar E., Prince J.L. Proceedings of the International Society of Magnetic Resonance in Medicine, 2001.
24. Detetecting the onset of ischemia using real-time HARP. Kraitchman D., **Sampath S.**, Derbyshire J.A., Heldman A.W., Prince J.L., Osman N.F. Proceedings of the International Society of Magnetic Resonance in Medicine, 2001.
25. Synthetic tagged MR images for real-time HARP imaging. Osman N.F., **Sampath S.**, Derbyshire J.A., Atalar E., Prince J.L. Proceedings of the International Society of Magnetic Resonance in Medicine, 2001.