Juan Manuel Santos

CONTACT INFORMATION

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EDUCATION

- PhD. Electrical Engineering, Stanford University, 2006.
- M.S. Electrical Engineering, Catholic University of Chile, 1998.
- B.S. Industrial Engineering, Catholic University of Chile, 1996.

POSITION TITLE

President & CEO. HeartVista, Inc.
Consulting Assistant Professor. Electrical Engineering Department. Stanford University.

ACADEMIC EXPERIENCE

Department of Electrical Engineering, Stanford University, Stanford, California, USA.

Consulting Assistant Professor **09/2008 – present**
Advice and support for Ph.D. students in real-time and fast acquisition research topics. Research in real-time magnetic resonance imaging techniques with applications to cardiac, musculo-skeletal, upper airway and interventional imaging.

Engineering Research Associate **2006 - 09/2008**
Research and Development of real-time magnetic resonance imaging techniques with applications in cardiac, musculo-skeletal, upper airway and interventional imaging.

Research Assistant **1999 - 2005**
Developed methods for real-time MRI acquisition and reconstruction. Implemented coronary artery angiography system.

Department of Electrical Engineering, **Catholic University of Chile**, Santiago, Chile.

Instructor **March - Jul 1999**
Digital Communications course.

Research Assistant **1996 - 1998**
Worked on flow and motion characterization of 3D MRI pulse sequences.

Teaching Assistant **1992 - 1998**
ICM1112 Graphical Design, IEE2172 Circuits Laboratory, IEE1112 Electromagnetic Circuits, IEE2682 Control Laboratory, IEE3782 Image Processing.

PROFESSIONAL EXPERIENCE

HeartVista, Inc., Loas Altos, CA.
President and CEO **09/2008 – present**
This is an NIH funded company to develop and commercialize a comprehensive cardiac evaluation system with MRI.

Brigham And Woman's Hospital. Harvard Medical School., Boston, MA
Consultant **January 2009**
Provided the tools and support to implement an interventional MRI system.

GE Healthcare ASL, Menlo Park, California, USA.

Consultant **2006**
Implementation of a control subsystem for real-time head motion correction in MRI scanners.

Research Scientist **June - Sept 2001, June - Sept 2002, June - Sept 2003**
Design and development of external real-time control and data acquisition system for the MRI product line.

DICTUC, Empack-Imaje, Catholic University of Chile, Santiago, Chile.

Software Engineer **1998 - 1999**
Design and implementation of an automatic random sampler system for fruit packing. The system samples fruit boxes according to USDA regulations and controls the production line to separate them.

Software Engineer **1998 - 1999**
Development of communication protocols and expert system to predict plant deceases using a weather station network.

Software Engineer **1996**
Development of a low cost remote medical imaging diagnostic system over ISDN. Responsible for the communication protocols.

Systems Administration **1991 - 1995**
Administration of network services for the University IT department. This included web, news, FTP and DNS servers.

BOLNET, La Paz, Bolivia.

Consultant **1995**
Network design and server installation for the first Bolivian private internet provider.

Grants and Funding

9/31/2008 - 3/31/2010 *Magnetic Resonance Imaging Subsystem for Valve Evaluation.* NIH SBIR Phase I, R43 HL092691-01, PI: Santos, $ 140,712. Role: Principal Investigator.

9/30/07 - 12/31/09. *Magnetic Resonance Imaging Subsystem for Cardiac Ischemia Evaluation.* NIH SBIR Phase I, R43 HL084769-01A2, PI: Santos, $132,355. Role: Prinicipal Investigator.

10/1/05-7/31/09. *Real-Time MRI and 3D Modeling: Development and Application to Patellofemoral Pain.* R01 EB005790, PI: Gold, $368,264 (yr). Role: Co-Investigator

9/01/07 - 8/31/12. *Noninvasive Coronary Artery Imaging Using MR.* NIH/NHLBI RO1 HL39297, PI: Nishimura, $250,000 (yr). Role: Co-Investigator.

Honors and Awards

- Best Moderated Poster Session Award. SCMR 10th Scientific Session, 2007.
- Lauterbur Award for the best MRI paper. SCBT/MR Scientific Session, 2006.
- Best Poster Award. ISMRM Real-Time Workshop, 2006.
- 3rd place Poster Award (1898), ISMRM, 2006.
- President of the Republic of Chile Scholarship 1999-2003.
- Class rank 1st, MS program. 1998.

Societies and Reviewer

Reviewer: IEEE Transactions in Medical Imaging, IEEE Transactions in Biomedical Engineering, Investigative Radiology, Magnetic Resonance in Medicine, ISMRM Scientific Meeting.

Societies: IEEE, ISMRM, SCMR

Journal Articles

1. Uygar Sumbul, **Juan M. Santos**, John M. Pauly. Improved Time Series Reconstruction for Dynamic Magnetic Resonance Imaging. IEEE Trans Med Imaging. Early View, January 2009.

2. Christine E. Draper, Thor F. Besier, **Juan M. Santos**, Fabio Jennings, Michael Fredericson, Garry E. Gold, Gary S. Beaupre, Scott L. Delp. Using real-time MRI to quantify altered joint kinematics in subjects with patellofemoral pain and to evaluate the effects of a patellar brace or sleeve on joint motion. Journal of Orthopaedic Research. Early View, November 2008.
3. Jose E. Barrera, Andrew B. Holbrook, **Juan Santos**, Gerald R. Popelka. Sleep MRI: Novel technique to identify airway obstruction in obstructive sleep apnea. Otolaryngology - Head and Neck Surgery. Volume 140, Issue 3, March 2009, Pages 423-425.
4. Christine E. Draper, **Juan M. Santos**, Lampros C. Kourtis, Thor F. Besier, Michael Fredericson, Gary S. Beaupre, Garry E. Gold, Scott L. Delp. Feasibility of using real-time MRI to measure joint kinematics in 1.5T and open-bore 0.5T systems. Journal of Magnetic Resonance Imaging, 28 (1): 158-166, 2008.
5. Michael Lustig, David L Donoho, **Juan M Santos** and John M Pauly Compressed Sensing MRI IEEE Signal Processing Magazine, 72-82, March 2008.
6. Rebecca Fahrig, Arundhuti Ganguly, Prasheel Lillaney, John Bracken, John R. Rowlands, Zhifei Wen, Huanzhou Yu, Viola Rieke, **Juan M. Santos**, Kim Butts Pauly, Daniel Y. Sze, Joan K. Frisoli, Bruce L. Daniel, and Norbert J. Pelc. Design, Performance, and Applications of a Hybrid x-ray/MR system for Interventional Guidance. Proceedings of the IEEE, 96 (3): 468-480, 2008
7. Tolga ukur, **Juan M. Santos**, Dwight G. Nishimura, John M. Pauly. Varying kernel-extent gridding reconstruction for undersampled variable-density spirals. Magnetic Resonance in Medicine, 59:196-201, 2008.
8. Jongho Lee, **Juan M. Santos**, Steve Conolly, Karla L. Miller, Brian A. Hargreaves, John M. Pauly. Respiration-induced B0 field fluctutation compensation in balanced-SSFP: Real-time approach for transition-band SSFP fMRI. Magnetic Resonance in Medicine, 55:1197-1201, 2006.
9. **J. M. Santos**, C. H. Cunningham, M. Lustig, B. A. Hargreaves, B. S. Hu, D. G. Nishimura and J. M. Pauly. Single Breath-Hold Whole-Heart MRA Using Variable-Density Spirals at 3T. Magnetic Resonance in Medicine, 55:371-379, 2006.
10. J. B. Park, **J. M. Santos**, B. A. Hargreaves, K. S. Nayak, G. Sommer, Bob. S. Hu, D. Nishimura. Rapid measurement of renal artery blood flow with ungated spiral phase-contrast MRI. Journal of Magnetic Resonance Imaging, 21:590-595.
11. P. C. Yang, **J. M. Santos**, P. K. Nguyen, G. C. Scott, J. Engvall, M. V. McConnell, G. A. Wright, D. G. Nishimura, J. M. Pauly and B. S. Hu. Dynamic Real-Time Architecture in Magnetic Resonance Coronary Angiography - A Prospective Clinical Trial. Journal of Cardiovascular Magnetic Resonance. 6:885-894, 2004.
12. K. S. Nayak, C. H. Cunningham, **J M Santos**, J. M. Pauly. Real-Time Cardiac Imaging at 3 Tesla. Magnetic Resonance in Medicine 51(4):655-660 2004
13. Ajit Shankaranarayanan, Robert Herfkens, Brian M. Hargreaves, Jason A. Polzin, **Juan M. Santos**, Jean H. Brittain, Helical MR: Continuously moving table axial imaging with radial acquisitions, Mag. Res. Med. 50(5):1053-1060 2003
14. P. Irarrazaval, **J. M. Santos**, M. Guarini and D. G. Nishimura, Flow properties of fast three-dimensional sequences for MR angiography, Mag. Res. Imag. 17(10):1469, 1999.

Conference Papers (Refereed)

1. Lee, Daeho; Kerr, Adam; **Santos, Juan**; Hu, Bob S.; Pauly, John, Efficient Data Acquisition for MR Doppler. ISMRM 16th Scientific Meeting, 1369, 2008
2. Stang, Pascal; **Santos, Juan**; Pauly, John; Scott, Greig. Experiments in Real-Time MRI with RT-Hawk and Medusa. ISMRM 16th Scientific Meeting, 348, 2008
3. Smbl, Uygar; **Santos, Juan**; Pauly, John. Improved Time Series Reconstruction for Dynamic MRI. ISMRM 16th Scientific Meeting, 792, 2008

4. Shankaranarayanan, Ajit; Han, Eric; Roddey, Cooper; White, Nate; Busse, Reed F.; Kuperman, Joshua; **Santos, Juan**; Rettmann, Dan; Schmidt, Ehud; Dale, Anders. Motion Insensitive 3D T2 and T1-Weighted Imaging with a Real-Time, Image-Based PROspective MOtion Correction Technique (3D PROMO) and Automated Re-Acquisition of Motion-Corrupted K-Space Segments. ISMRM 16th Scientific Meeting, 1475, 2008
5. Aksoy, Murat; Newbould, Rexford; Straka, Matus; Holdsworth, Samantha; Skare, Stefan; **Santos**, Juan; Bammer, Roland. A Real Time Optical Motion Correction System Using a Single Camera and 2D Marker. ISMRM 16th Scientific Meeting, 3120, 2008
6. Holbrook, Andrew B.; Barrera, Jose; **Santos, Juan**; Pauly, Kim Butts; Popelka, Gerald. Real Time Sleep MRI and Physiologic Monitoring of Patients with Obstructive Sleep Apnea. ISMRM 16th Scientific Meeting, 3470, 2008
7. **Santos, Juan**; Kerr, Adam; Lee, Daeho; McConnell, Michael V.; Yang, Philip; Hu, Bob S.; Pauly, John. Real-Time and Cardiac Gated CINE MR Doppler. ISMRM 16th Scientific Meeting, 384, 2008
8. Suzuki, Yoriyasu; Overall, William; **Santos, Juan**; Terashima, Masahiro; Ikeno, Fumiaki; Yeung, Alan C.; Pauly, John; Williams, Stephen B.; McConnell, Michael V. Real-Time and Color-Flow Spiral MR Imaging of Peripheral Chronic Total Occlusion (CTO). ISMRM 16th Scientific Meeting, 3001, 2008
9. **Santos, Juan**; Pauly, Kim Butts; Popelka, Gerald; Pauly, John. Real-Time MRI of Swallowing in Upright Position. ISMRM 16th Scientific Meeting, 2002, 2008
10. Smbl, Uygar; **Santos, Juan**; Pauly, John. A Very Fast Reconstruction Algorithm for Non-Cartesian Multi-Coil Dynamic MRI. ISMRM 16th Scientific Meeting, 1503, 2008
11. **Juan M. Santos**, Adam B. Kerr, Daeho Lee, Michael V. McConnell, Bob S. Hu, John M. Pauly. Real-Time and Gated MR Doppler. 11th Annual SCMR Scientific Sessions , 232, 2008.
12. Barrera, Jose E., Holbrook, Andrew B., **Santos, Juan M.**, Popelka, Gerald R.. NOVEL QUANTIFICATION OF AIRWAY OBSTRUCTION IN ADULT OBSTRUCTIVE SLEEP APNEA. Chest 2007 132: 464
13. Draper, C.E., Besier, T.F., **Santos, J.M.**, Beaupre, G.S., Gold, G.E., Delp, S.L. Measurements of in vivo patellofemoral joint kinematics with real-time MRI. ASB 31st Annual Meeting, Stanford, CA, 2007.
14. Uygar Smbl, **Juan Manuel Santos**, John Mark Pauly. Fast Imaging by Using a Diagonal Covariance Matrix. ISMRM 15th Scientific Meeting, 3360, 2007.
15. Christine Elizabeth Draper, **Juan M. Santos**, Lampros Kourtis, Thor F. Besier, Gary S. Beaupre,, Scott L. Delp, Garry E. Gold. Accuracy of Using Real-Time MRI for Joint Motion Measurements: A Phantom Study. ISMRM 15th Scientific Meeting, 2680, 2007.
16. **Juan M. Santos**, Adam B. Kerr, Daeho Lee, Michael V. McConnell, Phillip C. Yang, Bob S. Hu, John M. Pauly. Comprehensive Valve Evaluation System. ISMRM 15th Scientific Meeting, 2551, 2007.
17. Daeho Lee, Adam B. Kerr, **Juan M. Santos**, Bob S. Hu, John M. Pauly. One-Shot Fourier Velocity Encoding with Higher Spatial Resolution. ISMRM 15th Scientific Meeting, 2549, 2007.
18. Daeho Lee, **Juan M. Santos**, Adam B. Kerr, Bob S. Hu, John M. Pauly. Interactive One-Shot Spatially Resolved Real-Time Velocity Imaging. ISMRM 15th Scientific Meeting, 2510, 2007.
19. Adam B. Kerr, **Juan M. Santos**, Daeho Lee, Bob S. Hu, John M. Pauly. MR Doppler of High-Speed Jets. ISMRM 15th Scientific Meeting, 2502, 2007.

20. Ajit Shankaranarayanan, Cooper Roddey, Nathan White, Eric T. Han, Daniel Rettmann, **Juan Santos**, Ehud Schmidt, Anders Dale. Motion Insensitive 3D Imaging Using a Novel Real-Time Image-Based 3D PROspective MOtion Correction Method (3D PROMO). ISMRM 15th Scientific Meeting, 2117, 2007.
21. Tolga Cukur, **Juan Manuel Santos**, Dwight George Nishimura, John Mark Pauly. Varying Kernel Extent Gridding Reconstruction. ISMRM 15th Scientific Meeting, 1912, 2007.
22. Charles H. Cunningham, Michael Lustig, Bob S. Hu, **Juan M. Santos**, Taehoon Shin, Krishna S. Nayak, John M. Pauly. Novel Design for Notched RF Saturation Pulses Using the SLR Transform. ISMRM 15th Scientific Meeting, 1709, 2007.
23. Uygar Smbl, **Juan Manuel Santos**, John Mark Pauly. Obtaining a New Frame from Each Excitation in Real-Time Acquisitions. ISMRM 15th Scientific Meeting, 302, 2007.
24. Tolga Cukur, **Juan Manuel Santos**, John Mark Pauly, Dwight George Nishimura. Variable-Density Parallel Image Acquisition and Reconstruction with Partially Localized Coil Sensitivities. ISMRM 15th Scientific Meeting, 150, 2007.
25. **Juan M. Santos**, Bob S. Hu, Dwight G. Nishimura, John M. Pauly. Contrast Enhanced Real-Time MRCA. ISMRM 15th Scientific Meeting, 16, 2007.
26. Tolga Cukur, **Juan M. Santos**, John M. Pauly and Dwight G. Nishimura. Parallel Image Acquisition and Reconstruction with Variable-Density Trajectories and Localized Coils. ISMRM Workshop on Non-Cartesian MRI, Feb. 2007.
27. Adam B. Kerr, **Juan M. Santos**, Bob S. Hu, Daeho Lee, John M. Pauly. MR Doppler of High-Speed Jets Through Valvular Stenoses. SCMR 10th Annual Scientific Sessions, 646, 2007.
28. **Juan M. Santos**, Bob S. Hu, John M. Pauly. Delayed-Enhancement Myocardial Imaging in Three Heart Beats in a Real-Time Imaging Environment. SCMR 10th Annual Scientific Sessions, 481, 2007.
29. **Juan M. Santos**, Adam B. Kerr, Bob S. Hu, John M. Pauly. Comprehensive Valvular Evaluation System. SCMR 10th Annual Scientific Sessions, 320, 2007.
30. Draper, C., Kourtis, L., **Santos, J.**, Besier, T., Gold, G., Beaupre, G., Delp, S. Feasibility of using real-time MRI to measure joint kinematics. 5th World Congress of Biomechanics, Munich, Germany, 2006.
31. Jongho Lee, **Juan M. Santos**, John M. Pauly. An Interleaved Center Frequency Acquisition Method in Transition-Band SSFP fMRI: Increased Spatial Off-Resonance Coverage, ISMRM 14th Scientific Meeting, 3366, 2006.
32. Uygar Sumbul, **Juan M. Santos**, John M. Pauly. High Frame Rate Cardiac Imaging Using Kalman Filtering, ISMRM 14th Scientific Meeting, 2945, 2006.
33. **Juan M. Santos**, Bob S. Hu, Jin H. Lee, John M. Pauly. Single Breath-Hold Whole-Heart MRA Using Variable Density Spirals and Localized Coil Demodulation, ISMRM 14th Scientific Meeting, 2449, 2006.
34. Michael Lustig, **Juan M. Santos**, David L. Donoho, John M. Pauly. k-T SPARSE: High Frame Rate Dynamic MRI Exploiting Spatio-Temporal Sparsity, ISMRM 14th Scientific Meeting, 2420, 2006.
35. Daeho Lee, Julie C. DiCarlo, Adam B. Kerr, **Juan M. Santos**, John M. Pauly. Variable Density Excitation Pulses in One-Shot Fourier Velocity Encoding for Valve Flow Imaging, ISMRM 14th Scientific Meeting, 1898, 2006.
36. Jongho Lee, **Juan M. Santos**, John M. Pauly. Real-Time B0 Field Drift Compensation in Balanced SSFP: Stabilization of the Activation Band in Transition-Band SSFP fMRI, ISMRM 14th Scientific Meeting, 751, 2006.

37. Greig C. Scott, William Overall, **Juan M. Santos**, John M. Pauly. Resistively Coupled Interventional Device Visualization, ISMRM 14th Scientific Meeting, 266, 2006.
38. Garry E. Gold, Thor F. Besier, Christine E. Draper, **Juan M. Santos**, Michael Fredericson, Kim Butts Pauly, Gary S. Beaupre, Scott L. Delp. Patellofemoral Pain: Analysis with Upright Real-Time MRI and 3D Finite Element Modeling. SCBT/MR Scientific Session, 2006. **Lauterbur Award for the best MRI paper.**
39. Chloe Hutton, Fumiko Maeda, Kristen Lutomski, Saxon MacCleod, **Juan M. Santos**, Sean C. Mackey, John D. E. Gabrieli, Gary H. Glover, John M. Pauly, R. Christopher deCharms. Real Time fMRI: Novel Methods for Controlling Brain Activation Through Training, with Application to Pain Control, ISMRM Real-Time Workshop, 2006. **Best poster award**.
40. **Juan M. Santos**, Kim Butts, Gerald R. Popelka, John M. Pauly. Real-Time MRI of Speech and Swallowing in Upright Position, ISMRM Real-Time Workshop, 2006.
41. Uygar Sumbul, **Juan M. Santos**, John M. Pauly. Increasing Temporal Resolution via Kalman Filtering, ISMRM Real-Time MRI Workshop, 2006.
42. Julie C. DiCarlo, **Juan M. Santos**, Adam B. Kerr, Daeho Lee, Bob S. Hu, John M. Pauly, Dwight G. Nishimura, ISMRM Real-Time MRI Workshop, 2006.
43. Michael Lustig, **Juan M. Santos**, David L. Donoho, John M. Pauly. kt-SPARSE: High frame-rate dynamic MRI exploiting spatio-temporal sparsity, ISMRM Real-Time MRI Workshop, 2006.
44. **Juan M. Santos**, Bob S. Hu, John M. Pauly. Real-Time High-Resolution Coronary MRA, ISMRM Real-Time MRI Workshop, 2006.
45. **Juan M. Santos**, Bob S. Hu, John M. Pauly. Multislice Shim Correction for Single Breath-Hold Whole-Heart MRCA, SCMR 9th Annual Scientific Sessions, 363, 2006.
46. **Juan M. Santos**, Bob S. Hu, John M. Pauly. Ventricular Function with Real-Time MTC, SCMR 9th Annual Scientific Sessions, 325, 2006.
47. M Lustig ,**JM Santos**, JH Lee, DL Donoho and JM Pauly, Compressed Sensing for Rapid MR Imaging, in proceedings of SPARS'05, 2005
48. Christine Draper, Thor Besier, **Juan M. Santos**, Silvia Blemker, John Pauly, Gary Beaupre, Scott Delp and Garry Gold. Estimation of Patellar Tendon Strain in Vivo During Static and Dynamic Loaded Knee Flexion, ISMRM 13th Scientific Meeting, 2026, 2005.
49. **Juan M. Santos**, Garry E. Gold, Thor F. Besier, Brian A. Hargreaves, Christie E. Draper, Gary S. Beaupre, Scott L. Delp and John M. Pauly. Full-Flexion Patellofemoral Joint Kinematics with Real-Time MRI at 0.5 T, ISMRM 13th Scientific Meeting, 1951, 2005.
50. **Juan M. Santos**, Charles H. Cunningham, Brian A. Hargreaves, Bob S. Hu, Dwight G. Nishimura and John M. Pauly. Single Breath-Hold Whole Heart MRCA with Variable-Density Spirals at 3T, ISMRM 13th Scientific Meeting, 1610, 2005.
51. Michael Lustig, **Juan M. Santos** and John M. Pauly. A Super-FOV Method for Rapid SSFP Banding Artifact Reduction, ISMRM 13th Scientific Meeting, 504, 2005.
52. **Juan M. Santos**, Brian A. Hargreaves and John M. Pauly. Real-Time SSFP Transient Manipulation, ISMRM 13th Scientific Meeting, 101, 2005.
53. Jongho Lee, **Juan M. Santos**, Brian A. Hargreaves, Karla L. Miller and John M. Pauly. Real-Time Compensation for Respiratory-Induced Frequency Shift in Balanced SSFP by RF Phase Feed Back, ISMRM 13th Scientific Meeting, 100, 2005.
54. Girish Narayan, **Juan M. Santos**, Sonal Josan, Paul Wang, John Pauly, Kim Butts and Michael McConnell, Real-Time Ex-Vivo Visualization of Cardiac Cryoablation Lesions, SCMR 8th Annual Scientific Sessions, 560, 2005.

55. Brian A. Hargreaves, **Juan M. Santos**, Dwight G. Nishimura, John M. Pauly and Bob S. Hu, Real-Time Cardiac Imaging Using Balanced SSFP with Ultra-Short Variable-Density Spiral Readouts, SCMR 8th Annual Scientific Sessions, 533, 2005.

56. **Juan M. Santos**, Charles H. Cunningham, Brian A. Hargreaves, Jin H. Lee, Bob S. Hu, Dwight G. Nishimura and John M. Pauly, Single Brath-Hold Whole-Heart MRCA with Variable-Density Spirals at 3T, SCMR 8th Annual Scientific Sessions, 414, 2005.

57. Jong B. Park, Bob S. Hu **Juan M. Santos**, Krishna S. Nayak, Girish Narayan and Dwight G. Nishimura, Cardiac-Output Measurement in 5 Seconds Using Ungated Spiral Phase-Contrast, SCMR 8th Annual Scientific Sessions, 124, 2005.

58. **Juan M. Santos**, Graham A. Wright and John M. Pauly; Flexible Real-Time Magnetic Resonance Imaging Framework; 26th Annual Int. Conference IEEE EMBS, 1048, 2004.

59. Jong B. Park , **Juan M. Santos** , Girish Narayan , Krishna S. Nayak , Bob Hu , Dwight G. Nishimura, Cardiac Output Measurement with Ungated Spiral Phase-Contrast and Triggered Real-Time SSFP Imaging, ISMRM 12th Scientific Meeting, 2585, 2004

60. **Juan M. Santos**, Charles H. Cunningham, John M. Pauly, Excitation of Variable-Phase Profile for Efficient Saturation, ISMRM 12th Scientific Meeting, 2113, 2004

61. Patricia Kim Phuong Nguyen, Krishna Nayak, Charles Cunningham, **Juan M. Santos**, Miwako Tsukiji, Jean Brittain, Michael V. McConnell, Dwight Nishimura, Bob Hu, John Pauly, Phil Yang, Real Time MR Coronary Angiography at 3T, ISMRM 12th Scientific Meeting, 1877, 2004

62. Charles H. Cunningham, Jeffrey A. Stainsby, John M. Pauly, **Juan M. Santos**, J. Andrew Derbyshire, Graham A. Wright, RF pulses with Built-In Saturation Sidebands, ISMRM 12th Scientific Meeting, 699, 2004

63. Jeff A. Stainsby, Nick Hu, Dingrong Yi, Perry Radau, **Juan M. Santos**, Graham A. Wright, Integrated Real-Time MRI User-Interface, ISMRM 12th Scientific Meeting, 537, 2004

64. K. S. Nayak, C. H. Cunningham, **J. M. Santos**, J. M. Pauly, Real-Time Cardiac MRI at 3T and 1.5T: SNR and CN R Comparison, SCMR 7th Annual Scientific Sessions,547, 2004.

65. P. K. Nguyen, K. S. Nayak, C. H. Cunningham, **J. M. Santos**, J. M. Pauly, B. S. Hu, M. V. McConnel, P. Yang, Real Time Coronary MR Angiography at 3T, SCMR 7th Annual Scientific Sessions, 528, 2004.

66. A. Carrillo, A. Shankaranarayanan, J. Johnson, **J. M. Santos**, M. M. McConnel, P. C. Yang, J. H. Brittain, B . S. Hu, Integrated Real-TimeCardiac Imaging Environment, SCMR 7th Annual Scientific Sessions, 502, 2004.

67. **J. Santos**, P. Yang, C. Cunningham, K. Nayak, B. Hu, M. McConnell, J. Brittain, J. Pauly, High Resolution S piral MRCA with Real-Time Localization at 3T, SCMR 7th Annual Scientific Sessions, 217, 2004.

68. K. S. Nayak, C. H. Cunningham, **J. M. Santos**, J. M. Pauly and D. G. Nishimura, Real-Time Cardiac Imaging at 3 Tesla, Late-Breaking MR, ISMRM 11th Scientific Meeting, 2003

69. P. Nguyen, **J. Santos**, G. Scott, J. Engvall, M. McConnell, G. Wright, J. Pauly, D. Nishimura, B. Hu, P. Yang, Adaptive real-time MR coronary angiography - prospective clinical trial, Proc. ISMRM 11th Scientific Meeting, 729, 2003.

70. D. Gurr, A. Shimakawa, G. Wright, **J. Santos**, J. Levin, R. Busse, B. Herfkens, J. Brittain, Polar Phase Encode Placement for 3D Acquisition with Time-Resolved Projections. Proc. ISMRM 11th Scientific Meeting, 1349, 2003.

71. J. Park, C. Liu, **J. Santos**, G. Sommer, D. Nishimura, Rapid Measurement of Superior Mesenteric Artery Flow with Ungated Spiral Phase Contrast, Proc. ISMRM 11th Scientific Meeting, 1690, 2003.

72. **J. Santos**, M. McConnell, G. Scott, M. Hyon, J. Pauly, Multi-Coil Real-Time Interventional System, Proc. ISMRM 11th Scientific Meeting, 1197, 2003.

73. **J. Santos**, B. Hargreaves, K. Nayak, J. Pauly, Real-Time Fat Suppressed SSFP, Proc. ISMRM 11th Scientific Meeting, 982, 2003.

74. J. Park, **J. Santos**, K. Nayak and D. Nishimura, Comparison of Real-Time and Ungated Phase-Contrast Imaging for Rapid Mean Flow Measurements, Proc. ISMRM 11th Scientific Meeting, 1676, 2003

75. A. Shankaranarayanan, A. Carrillo, B. Hu, G. Wright, J. Pauly, **J. Santos** and J. Brittain, Real-time diagnostic cardiac imaging with fast multi-coil multi-processor reconstruction system, Proc. ISMRM 11th Scientific Meeting, 1072, 2003.

76. Yang, P; Nguyen, P; **Santos, J**; Engvall, J; McConnell, M; Scott, G; Wright, G; Nishimura, D; Pauly, J; Hu, B; Adaptive real-time imaging in magnetic resonance coronary angiography, JOURNAL OF INVESTIGATIVE MEDICINE; MAR 2003; v.51, suppl.2, p.S360-S360

77. P. K. Nguyen, **J. Santos**, G. Scott, J. Engvall, G. Wright, M. McConnell, C. Meyer, D. Nishimura, J. Pauly, B. Hu, P. C. Yang, Adaptive real-time architecture in magnetic resonance coronary angiography: Clinical Study., 52nd Annual Scientific Session of the American College of Cardiology, JACC, 468A – 469A, 2003

78. A. Shankaranarayanan, A. Carrillo, **J. Santos**, B. Hu, G. Wright, J. Pauly, J. Brittain, A Fast Multi-coil Multi-processor Reconstruction for Real-Time Diagnostic Cardiac Imaging, SCMR 6th Annual Scientific Sessions, 428, 2003.

79. J. Engvall, G. Scott, **J. Santos**, P. Nguyen, M. Hyon, M. Amitai, M. McConnell, J. Pauly, D. Nishimura, B. Hu, P. Yang, MR Coronary Angiography Using a Novel 2-Element Phased-Array Coil: Improved Image Quality and Anatomic Coverage, SCMR 6th Annual Scientific Sessions, 423, 2003.

80. A. Carrillo, A. Shankaranarayanan, **J. Santos**, K. Nayak, P. Yang, B. Hu, G. Wright, J. Brittain, Localized Measurement, Display and Adaptation of Functionl Information Through a Real-Time Interface, SCMR 6th Annual Scientific Sessions, 417, 2003.

81. P. Nguyen, **J. Santos**, G. Scott, J. Engvall, M. McConnell, C. Meyer, S. Connolly, D. Nishimura, J. Pauly, B. Hu, P. Yang, Adaptive Real-Time MR Coronary Angiography - First Prospective Clinical Trial, SCMR 6th Annual Scientific Sessions, 379, 2003.

82. **J. Santos**, M. McConnell, J. Pauly, Multi-coil Real-Time MR Imaging and Tracking for Guiding Interventions, SCMR 6th Annual Scientific Sessions, 378, 2003.

83. J. Park, **J. Santos**, B. Hargreaves, B. Hu and D. Nishimura, Rapid and Robust Renal Artery Blood-Flow Measurement with Ungated Spiral Phase-Contrast, Proc. ISMRM 10th Scientific Meeting, 1800, 2002

84. **J. M. Santos**, G. Wright, J. Pauly, Real-Time Optimized Reconstruction Algorithm for Adaptive Imaging, Proc. ISMRM 10th Scientific Meeting, 738, 2002

85. **J. M. Santos**, G. Wright, P. Yang and J. Pauly, Adaptive Architecture for Real-Time Imaging Systems, Proc. ISMRM 10th Scientific Meeting, 468, 2002

86. **J. M. Santos**, G. C. Scott and J. M. Pauly, Real-Time Imaging and Active Device Tracking for Catheter-Based MRI, Proc. ISMRM 9th Scientific Meeting, 2169, 2001.

87. K. S. Nayak, P. A. Rivas, M. McConnell, **J. M. Santos**, G. C. Scott, D. G. Nishimura, J. M. Pauly and B. S. Hu, Real-time black-blood imaging and active tracking for catheter-based MRI, Proc. SCMR 4th Scientific Sessions, 2001.

88. P. Irarrazaval and **J. M. Santos**, Velocity shifting reconstruction for flow artifact reduction, Proc. ISMRM 7th Scientific Meeting, 1988, 1999.

89. P. Irarrazaval and **J. M. Santos**, Velocity k-space analysis of flow effect in three dimensional imaging, Proc. ISMRM 6th Scientific Meeting, 2124, 1998.

Invited Presentations

- Faculty Member Presentation: *Real-Time Interactice Acquisition Platform.* Eleventh Annual SCMR Scientific Sessions, February 2, 2008.
- *Real-Time Data Acquisition and Scan Control*, MRI Programming Seminar, Radiology Department, Stanford University, October 2007.
- *Real-Time MRI and Feedback Applications*, Magnetic Resonance Research Imaging Center, Catholic University of Chile, April 2007.
- *Real-Time MRI and Feedback Applications*, Magnetic Resonance Engineering Laboratory, October 2006.
- *Real-Time MRI and Feedback Applications*, National Institutes of Health (NIH), Advanced MRI, August 2006.
- *Real-Time Data Acquisition and Scan Control*, EPIC Seminar, Radiology Department, Stanford University, July 2006.
- *RTHawk System Overview*, RTHawk Users Meeting, USC, February 2006.
- *SSFP transient manipulation in real-time driven MRI*, Parallel Imaging Seminar, UCSF, August 2005
- *Real-Time Driven MRI: Architecture and Applications*, GE Global Research, December 2004.
- *Architecture for a Virtual Scanner*, Real-Time Cardiac MRI Workshop, Toronto, Ontario, Canada, 2003
- *Real-Time Imaging and Active Device Tracking for Catheter-Based MRI*, Electrical Engineering Department, Catholic University of Chile, November 2000.

Patents

1. US patent 6,965,234. RF Pulses with built-in saturation sidebands for MRI applications.
2. US patent 6,975,751. Method and apparatus for reconstruction of non-uniformly sampled data
3. US Patent Pending 12/029,583. K-T Sparse: High Frame-Rate Dynamic MRI Exploiting Spatio-Temporal Sparsity.
4. US Patent Pending 12/322336. Real-Time Magnetic Resonance Imaging and Peripheral Arterial Tone in Sleep Apnea Diagnosis.
5. Stanford disclosure S08-010 PAT (pulse arterial tone) signal is a leading indicator of site of obstruction using RT-MRI (real time magnetic resonance imaging).