

KRISHNA S. NAYAK

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EDUCATION

Ph.D. Electrical Engineering	Stanford University	2001
M.S. Electrical Engineering	Stanford University	1996
B.S. Elec Eng, Comp Sci, Appl Math	Florida State University	1995

PRIMARY POSITIONS

Professor, Electrical and Computer Engineering, University of Southern California (joint appointments in Biomedical Engineering and Radiology)	2014-
Associate Professor, Electrical Engineering, University of Southern California	2009-14
Assistant Professor, Electrical Engineering, University of Southern California	2003-09
Lecturer & Research Associate, Electrical Engineering, Stanford University	2001-03

INDUSTRY POSITIONS

President, Lively Sensors, LLC	2016-20
Consultant, Physical Optics Corporation	2016
Consultant, Lithera, Inc.	2013
Consultant, California Heart Centers Group	2009-11
Consultant, Phantoms by Design, Inc.	2002-09
Consultant, NetVMG, Inc.	2001-03

VISITING POSITIONS

Sabbatical, Lively Sensors, LLC	2017-18
Visiting Professor (1 month), Indian Institute of Sciences	2017
Sabbatical, Laboratory of Cardiac Energetics, NIH/NHLBI Intramural Division	2010-11
Research Professor, Department of Medicine, Loma Linda University	2008-13

RESEARCH AND TEACHING FIELDS

Magnetic Resonance Imaging	Signals & Systems
Medical Physics	Digital Signal Processing

HONORS and AWARDS

Elected "Fellow" of IEEE	2022
USC Viterbi School of Engineering Use-Inspired Research Award	2020
Elected "Board of Trustees" of ISMRM	2018-21
Elected "Fellow" of SCMR	2018
Elected "Fellow" of AIMBE	2017
USC Community Engagement Award	2014
USC Center for Excellence in Teaching, Faculty Fellow	2013-16
NAE Frontiers of Engineering Education, Participant	2011
GE Healthcare Magnetic Resonance Thought Leader Award	2009
USC Mellon Mentoring Award, Faculty Mentoring of Graduate Students	2008
Elected "Senior Member" of IEEE	2008
USC Viterbi School of Engineering Outstanding Junior Faculty Research Award	2007
Fannie and John Hertz Foundation Doctoral Thesis Prize	2001
ISMRM Student Stipend Recipient	1997-99
Fannie and John Hertz Foundation Graduate Fellowship	1995-00
NSF Graduate Fellowship (declined, b/c accepted Hertz)	1995
Tau Beta Pi Centennial Fellowship #11	1995
Phi Kappa Phi Graduate Fellowship	1995

MEMBERSHIP

American Institute for Medical and Biological Engineering (Fellow 2017-present)	2017-
American Society for Engineering Education	2011-
American Association for the Advancement of Science	2008-
American Heart Association	2003-
Institute of Electrical and Electronics Engineers (Senior Member 2008-present, Fellow 2022-present)	2001-
Society for Cardiovascular Magnetic Resonance (Fellow 2018-present)	2000-
International Society for Magnetic Resonance in Medicine	1996-

RESEARCH

FUNDING

- ▶ **Principal Investigator** (MPI with Brian Hargreaves), NIH/NIAMS, “Improved Diagnostic MRI around Metallic Implants,” R01-AR078912. Feb 2022 – Dec 2026. Total: \$3.9M. KN’s portion: \$3.0M.
- ▶ **Principal Investigator**, USC Provost’s Strategic Directions Research Award (SDRA), “Translational Pipeline for Pediatric and Fetal Applications of 0.55 Tesla MRI,” Jan 2022 – Aug 2023. Total: \$300k.
- ▶ **Co-Investigator**, AHA/TPA, “Novel Identification of Myocardial Scar Tissue using Arterial Spin Labeling,” 19TPA34880024. PI: Parveen Garg. July 2019 – June 2022. Total: \$300k. KN’s portion: \$137k.
- ▶ **Principal Investigator**, NSF/CNS, “MRI: Development of a High-Performance Low-Field MRI for Dynamic Imaging,” #1828736. Oct 2018 – Sep 2023. Total: \$2.5M. KN’s portion: \$2.5M.
- ▶ **Principal Investigator**, NIH/NCI, “Precise DCE-MRI Assessment of Brain Tumors,” R33-CA225400. Sep 2017 – Aug 2020. Total: \$1.6M. KN’s portion: \$1.3M.
- ▶ **Principal Investigator**, NIH/NHLBI, “Novel Myocardial Perfusion Stress Test using Arterial Spin Labeling,” R01-HL130494. Jul 2016 – Jun 2020. Total: \$1.7M. KN’s portion: \$1.2M.
- ▶ **Co-Investigator**, NIH/NIDCD, “Dynamics of Vocal Tract Shaping,” R01-DC007142, PI: Shrikanth Narayanan. May 2005 – Apr 2010. Total: \$2.1M. KN’s portion: \$400k. May 2010 – April 2015. Total: \$2.0M. KN’s portion: \$380k. Dec 2015 – Nov 2020. Total: 2.0M. KN’s portion: \$380k.
- ▶ **Co-Principal Investigator**, NSF/CISE, “RI: Medium: Collaborative Research: Understanding individual-level speech variability: from novel articulatory data to robust speaker recognition,” #1514544. PI(s): Shrikanth Narayanan, Krishna Nayak. Sep 2015 – Aug 2020. Total: \$1.2M.
- ▶ **Co-Investigator**, NIH/NIDDK, “Optimizing Tissue Iron Quantification at 3 Tesla,” R01-DK097115. PI: John Wood. Sep 2013 – Aug 2018. Total: \$1.6M. KN’s portion: \$140k.
- ▶ **Co-Investigator**, NIH/NIEHS 5P01ES022845-04 and EPA RD-83544101-0, “Southern California Children’s Environmental Health Center (SC-CEHC),” PI: Rob McConnell. June 2013 – May 2018.
- ▶ **Co-Investigator**, NIH/NHLBI, “Model-based Phenotyping of OSAS in Pediatric Obesity using Dynamic MR Imaging,” R01-HL105210. PI: Michael Khoo. Sep 2010 – Aug 2016. (no cost extension) Total: \$3.4M. KN’s portion: \$1.2M.
- ▶ **Co-Investigator**, NIH/NIDDK, “ β -cell Preservation through Fat Mitigation,” U01-DK094430. PI(s): Tom Buchanan, Anny Xiang. Sep 2011 – Jun 2016. Total: \$3.8M. KN’s portion: \$20k.
- ▶ **Principal Investigator**, American Heart Association, Grant-in-Aid, “Myocardial ASL Perfusion Imaging with Improved Coverage and Sensitivity,” 13GRNT13850012, Jan 2013 – Dec 2015. Total: \$140k.
- ▶ **Principal Investigator**, Wallace H. Coulter Foundation, Coulter Translational Research Award, “Myocardial Perfusion Imaging without Contrast Agents,” Phase-I: September 2010 – August 2012. Total: \$180k. Phase-II: Sep 2012 – Aug 2015. Total: \$320k.
- ▶ **Co-Investigator**, NIH/NIDDK, “Risk Factors for Type-II Diabetes in Hispanic Adolescents,” R01-DK059211. PI: Michael Goran. Oct 2009 – Sep 2015. Total: \$3.2M. KN’s portion: \$60k.

- ▶ **Co-Investigator**, NIH/NIBIB, “Novel ICA Based Multi-fiber Streamline Tractography Approach,” R21-EB013456. PI: Meng Law. Jan 2012 – Dec 2013. Total: \$440k. KN’s portion: \$16k.
- ▶ **Principal Investigator**, NIH/NIDDK, “Rapid MRI Measures of Absolute Fat Mass in Adipose Tissue and Organs,” R21-DK081173. Feb 2009 – Dec 2012. (no cost extension). Total: \$450k.
- ▶ **Co-Principal Investigator**, GE Healthcare, “Cardiovascular Magnetic Resonance at 3 Tesla,” PI(s): Gerald Pohost, Krishna Nayak. Jul 2008 – Dec 2011. Total: \$320k. KN’s portion: \$240k.
- ▶ **Principal Investigator**, NIH/NHLBI, “Superior Cardiac MRI using Wideband SSFP at 3 Tesla,” R21-HL079987. Feb 2006 – Nov 2008. Total: \$430k.
- ▶ **Principal Investigator**, American Heart Association, Scientist Development Grant, “Coronary Magnetic Resonance Angiography at 3 Tesla,” #0435249N, \$260,000. Jul 2004 – Jun 2008. Total: \$320k.
- ▶ **Subcontract PI**, NIH/NHLBI, “Comprehensive Assessment of Valvular Function with MRI,” R01-HL074332. PI: John Pauly (Stanford). Jan 2004 – Jan 2008. Total: \$350k.

Total amounts include F&A and indirect costs, and are rounded to two significant digits. If funding is shared by multiple investigators, my portion is listed separately.

Small / Pilot Grants

- ▶ **Co-Investigator**, Keck School of Medicine, Dean’s Pilot Award, “Exploiting 0.55T for improved MRI screening of at-risk fetuses in mothers with poor acoustic windows: supporting studies,” PI: John Wood, Jan 2022 – Dec 2022. \$50,000.
- ▶ **Co-Principal Investigator**, Ming Hsieh Institute for Research on Engineering Medicine for Cancer, “Novel Dynamic PET Kinetics and MRI Radiomics Analyses in Brain Tumors,” PIs: Hossein Jadvar, Krishna Nayak, J Andrew MacKay, July 2021 – August 2021. \$125,000.
- ▶ **Co-Investigator**, BRACCO Global Investigator, “Evaluation of Regional Gadolinium Retention in the Brain,” PI: Alex Lerner, August 2016 – July 2018.
- ▶ **Principal Investigator**, RSNA-QIBA Groundwork Project Round 6, “Evaluation of RF Transmit Calibration Options for Quantitative DCE-MRI,” July 2016 – June 2017. \$50,000.
- ▶ **Co-Investigator**, Wright Foundation, Pilot Grant, “Noninvasive Coronary Endothelial Function using Arterial Spin Labeling,” PI: Parveen Garg, July 2015 – June 2017. \$48,000.
- ▶ **Co-Investigator**, Whittier Foundation, Pilot Grant, “Myocardial ASL Stress Testing in Heart Transplant Recipients,” PI: Andrew Yoon, September 2014 – December 2016. \$100,000.
- ▶ **Co-Investigator**, Southern California Clinical and Translational Science Institute, Pilot Grant, “Drug-Induced Sleep Endoscopy and Magnetic Resonance Imaging in Obstructive Sleep Apnea,” PI: Eric Kezirian, July 2014 – June 2015. \$49,000.
- ▶ **Principal Investigator**, Southern California Clinical and Translational Science Institute, Pilot Grant, “Improved DCE Neuro-MRI using Constrained Reconstruction,” July 2013 – June 2014. \$38,282.
- ▶ **Principal Investigator**, Clinical and Translational Science Institute, Pilot Grant, “MRI Assessment of 3D Blood Flow Dynamics in Patients with Carotid Atherosclerosis,” July 2008 – June 2009. \$41,556.
- ▶ **Subcontract PI**, Respiration Foundation, “Development of Non-invasive Airway Compliance Assessment using Real-Time MRI,” PI: Ian Colrain (SRI International), January 2008 – July 2008. \$73,150.

- ▶ **Principal Investigator**, Center for Transdisciplinary Research on Energetics and Cancer, Pilot Grant, “Rapid and Non-invasive Quantitation of Abdominal Fat Distribution using Magnetic Resonance Imaging,” September 2007 – August 2008. \$35,000.
- ▶ **Co-Principal Investigator**, James H. Zumberge Research and Innovation Fund, Interdisciplinary Research Grant, “Assessment of Myocardial Perfusion by Cardiac MRI,” with Co-PI: Gerald Pohost, July 2005 – June 2006. \$50,000.
- ▶ **Subcontract PI**, Respiration Foundation, “Non-invasive Airway Compliance Assessment using Real-Time MRI,” PI: Ian Colrain (SRI International), October 2004 – March 2006. \$86,673.
- ▶ **Principal Investigator**, James H. Zumberge Research and Innovation Fund, Individual Research Grant, “Cardiac Magnetic Resonance Imaging at 3 Tesla,” July 2004 – June 2005. \$25,000.

Funding from a previous institution (Stanford):

- ▶ **Investigator**, NIH/NHLBI, “Noninvasive Coronary Artery Imaging using MR,” PI: Dwight Nishimura (Stanford), R01-HL39297. July 1992 – August 2007.
- ▶ **Investigator**, NIH/NHLBI, “Integrated Myocardial Ischemia Assessment with MRI,” PI: John Pauly (Stanford), R01-HL67161. January 2003 – December 2007.
- ▶ **Investigator**, NIH/NIBIB, “MR Guided Vascular Interventions,” PI: John Pauly (Stanford), R01-EB002992. September 2003 – July 2007.
- ▶ **Investigator**, NIH/NCI, “High-Speed MRI for Tumor Interventions,” PI: Al Macovski (Stanford), R01-CA50948. July 2000 – June 2003.
- ▶ **Investigator**, California TRDRP, “Comprehensive Evaluation of the Ischemic Leg,” PI: Dwight Nishimura (Stanford), 9RT-0024. July 2000 – June 2003.
- ▶ **Investigator**, NIH/NCRR, “Center for Advanced Magnetic Resonance Technology at Stanford,” PI: Gary Glover (Stanford), R01-HL39297. January 2001 – December 2006.
- ▶ **Investigator**, NIH/NIBIB, “Development of a Prepolarized MRI Extremity Scanner,” PI: Al Macovski (Stanford), R01-EB000346. September 2001 – August 2005.
- ▶ **Investigator**, NIH, “Development of Improved MRI Techniques for Cartilage Injury and Repair,” PI: Al Macovski (Stanford), R01-AR46904. September 1999 – August 2003.

PUBLICATIONS

JOURNAL PAPERS (refereed)

1. Q Qin, DC Alsop, DS Bolar, L Hernandez-Garcia, J Meakin, D Liu, **KS Nayak**, S Schmid, MJP van Osch, EC Wong, JG Woods, G Zaharchuk, MY Zhao, Z Zun, J Guo. "Velocity-selective arterial spin labeling perfusion MRI: A review of the state of the art and recommendations for clinical implementation." *Magnetic Resonance in Medicine*. 88(4):1528-1547, October 2022.
2. NG Lee, R Ramasawmy, Y Lim, AE Campbell-Washburn, **KS Nayak**. "MaxGIRF: Image Reconstruction Incorporating Concomitant Field and Gradient Impulse Response Function Effects." *Magnetic Resonance in Medicine*. 88(2):691-710, August 2022.
3. EK Doyle, S Thornton, N Ghugre, T Coates, **KS Nayak**, JC Wood, "Effects of B1+ Heterogeneity on Spin Echo-Based Liver Iron Estimates," *Journal of Magnetic Resonance Imaging*. 55(5):1419-1425, May 2022.
4. JJ Weyers, V Ramanan, A Javed, J Barry, M Larsen, **KS Nayak**, GA Wright, NR Ghugre. "Myocardial Blood Flow is the Dominant Factor Influencing Cardiac Magnetic Resonance Adenosine Stress T2." *NMR in Biomedicine*. 35(3):e4643, March 2022.
5. **KS Nayak**, Y Lim, A Campbell-Washburn, J Steeden. "Real-Time Magnetic Resonance Imaging." *Journal of Magnetic Resonance Imaging*. 55(1):81-99. January 2022.
6. Z Zhu, RM Lebel, Y Bliesener, J Acharya, RM Frayne, **KS Nayak**. "Sparse Pre-Contrast T₁ Mapping for High-Resolution Whole-Brain DCE-MRI." *Magnetic Resonance in Medicine*. 86(4):2234–2249, October 2021.
7. Y Bliesener, RM Lebel, J Acharya, R Frayne, **KS Nayak**. "Pseudo Test-Retest Evaluation of millimeter-resolution whole-brain Dynamic Contrast-Enhanced MRI in Patients with High-Grade Glioma." *Radiology*. 300(2):410-420. August 2021.
8. Y Tian, Y Lim, Z Zhao, D Byrd, SS Narayanan, **KS Nayak**. "Aliasing Artifact Reduction in Spiral Real-Time MRI." *Magnetic Resonance in Medicine*. 86(2):916-925, August 2021.
9. AH Xiang, MP Martinez, E Trigo, KM Utschneider, M Cree-Green, S Arslanian, DA Ehrmann, S Caprio, DH Hwang, N Katkhouda, **KS Nayak**, TA Buchanan (for the Rise Consortium). "Liver Fat Reduction after Gastric Banding and Associations with Changes in Insulin Sensitivity and β -cell Function." *Obesity*. 29(7):1155-1163. July 2021.
10. D Kim, SF Cauley, **KS Nayak**, RM Leahy, JP Haldar. "Region-Optimized Virtual (ROVir) Coils: Localization and/or Suppression of Spatial Regions using Sensor-Domain Beamforming." *Magnetic Resonance in Medicine*. 86(1):197-212, July 2021.
11. Y Lim, A Toutios, Y Bliesener, Y Tian, SG Lingala, C Vaz, T Sorensen, M Oh, S Harper, W Chen, Y Lee, J Töger, ML Montessorin, C Smith, B Godinez, L Goldstein, D Byrd, **KS Nayak**, SS Narayanan, "A multispeaker dataset of raw and reconstructed speech production real-time MRI video and 3D volumetric images," *Scientific Data (Nature)*. 8:187. 20 July 2021.
12. A Pineda, H Miedema, SG Lingala, **KS Nayak**, "Optimizing constrained reconstruction in magnetic resonance imaging for signal detection," *Physics in Medicine and Biology*. 66(14):145014. 16 July 2021.
13. Z Zhao, Y Lim, D Byrd, SS Narayanan, **KS Nayak**. "Improved 3D real-time MRI of speech production." *Magnetic Resonance in Medicine*. 85(6):3182-3195, June 2021.
14. RA Lobos, WS Hoge, A Javed, C Liao, K Setsompop, **KS Nayak**, JP Haldar. "Robust Autocalibrated Structured Low-Rank EPI Ghost Correction" *Magnetic Resonance in Medicine*. 85(6):3403-3419, June 2021.

15. RB Jones, L Arenaza, C Rios, JF Plows, PK Berger, TL Alderete, JL Fogel, **KS Nayak**, P Mohamed, D Hwang, S Palmer, F Sinatra, H Allayee, R Kohli, MI Goran. "PNPLA3 Genotype, Arachidonic Acid Intake, and Unsaturated Fat Intake Influences Liver Fibrosis in Hispanic Youth with Obesity" *Nutrients*. 13(5), 1621. May 2021
16. S Gutta, J Acharya, MS Shiroishi, D Hwang, **KS Nayak**. "Improved Glioma Grading using Deep Convolutional Neural Networks." *American Journal of Neuroradiology*. 42(2):233-239, January 2021.
17. Y Lim, Y Bliesener, SS Narayanan, **KS Nayak**. Deblurring for Spiral Real-Time MRI using Convolutional Neural Networks. *Magnetic Resonance in Medicine*. 84(6):3438-3452, December 2020.
18. NG Lee, A Javed, TR Jao, **KS Nayak**. Numerical Approximation to the General Kinetic Model for ASL Quantification. *Magnetic Resonance in Medicine*. 84(5):2846-2857, November 2020.
19. V Landes, A Javed, TR Jao, Q Qin, **KS Nayak**. Improved Velocity-Selective Labeling Pulses for Myocardial ASL. *Magnetic Resonance in Medicine*. 84(4):1909-1918, October 2020.
20. A Javed, **KS Nayak**. Single-shot EPI for ASL-CMR. *Magnetic Resonance in Medicine*. 84(2):738-750, August 2020.
21. W Chen, NG Lee, D Byrd, S Narayanan, **KS Nayak**. Improved real-time tagged MRI using REALTAG. *Magnetic Resonance in Medicine*. 84(2):838-846, August 2020.
22. HP Do, Y Guo, AJ Yoon, **KS Nayak**. Accuracy, Uncertainty, and Adaptability of Automatic Myocardial ASL Segmentation using Deep CNN. *Magnetic Resonance in Medicine*. 83(5):1863-1874, May 2020.
23. Y Bliesener, J Acharya, **KS Nayak**. Efficient DCE-MRI parameter and uncertainty estimation using a Neural Network. *IEEE Transactions on Medical Imaging*. 39(5):1712-1723, May 2020.
24. Y Bliesener, SG Lingala, JP Haldar, **KS Nayak**. Impact of (k,t) sampling on DCE MRI tracer kinetic parameter estimation in digital reference objects. *Magnetic Resonance in Medicine*. 83(5):1625-1639, May 2020.
25. T Shin, **KS Nayak**. Perceived dark rim artifact in first-pass myocardial perfusion MRI due to visual illusion. *Korean Journal of Radiology*. 21(4):462-469. April 2020.
26. A Javed, AJ Yoon, S Cen, **KS Nayak**, P Garg. Feasibility of Coronary Endothelial Function Assessment using Arterial Spin Labeled CMR. *NMR in Biomedicine*. 33(2):e4183, February 2020.
27. SG Lingala, Y Guo, Y Bliesener, Y Zhu, RM Lebel, M Law, **KS Nayak**. Tracer kinetic models as temporal constraints during brain tumor DCE-MRI reconstruction. *Medical Physics*. 47(1):37-51, January 2020.
28. VL Landes, **KS Nayak**. Iterative correction of RF envelope distortion with GRATER-measured waveforms. *Magnetic Resonance in Medicine*. 83(1):188-194, January 2020.
29. X Miao, **KS Nayak**, JC Wood. In-vivo validation of T2- and susceptibility-based SvO2 measurements with jugular vein catheterization under hypoxia and hypercapnia. *Magnetic Resonance in Medicine*. 82(6):2188-2198, December 2019.
30. K Jiang, CM Ferguson, JR Woollard, VL Landes, JD Krier, X Zhu, **KS Nayak**, LO Lerman. Magnetization Transfer Imaging is Unaffected by Decreases in Renal Perfusion in Swine. *Investigative Radiology*. 54(11):681-688, November 2019.
31. CB Shaw, BH Foster, M Borgese, RD Boutin, C Bateni, P Boonsri, CO Bayne, RM Szabo, **KS Nayak**, AJ Chaudhari. Real-time three-dimensional MRI for the assessment of dynamic carpal instability. *PLOS-ONE*. 14(9): e0222704, September 2019.

32. TR Jao, **KS Nayak**. Analysis of physiological noise in quantitative cardiac magnetic resonance. *PLOS ONE*. 14(8): e0214566, August 2019.
33. W Chen, D Byrd, S Narayanan, **KS Nayak**. Intermittently Tagged Real-Time MRI Reveals Internal Tongue Motion during Speech Production. *Magnetic Resonance in Medicine*. 82(2):600–613, August 2019.
34. **KS Nayak**. Response to Letter to the Editor: Nomenclature for real-time magnetic resonance imaging. *Magnetic Resonance in Medicine*. 82(2):525–526, August 2019.
35. Y Bliesener, X Zhong, Y Guo, M Boss, R Bosca, H Laue, C Chung, K Sung, **KS Nayak**. RF Transmit Calibration: A multi-center evaluation of vendor-provided RF transmit mapping methods. *Medical Physics*. 46(6):2629-2637. June 2019.
36. EAH Warnert, **KS Nayak**, R Menon, C Rice, J Port, EA Morris, D Sodickson, P Sundgren, K Miller, UC Anazodo. Resonate: Reflections and recommendations on implicit biases within the ISMRM. *Journal of Magnetic Resonance Imaging*. 49(6):1509-1511, June 2019.
37. Y Lim, Y Zhu, SG Lingala, D Byrd, S Narayanan, **KS Nayak**. 3D dynamic MRI of the vocal tract during natural speech. *Magnetic Resonance in Medicine*. 81(3):1511-1520. March 2019.
38. W Foltz, B Driscoll, SL Lee, **KS Nayak**, N Nallapareddy, A Fatemi, C Ménard, C Coolens, C Chung. Phantom Validation of DCE-MRI Magnitude and Phase-Based Vascular Input Function Measurements. *Tomography* (special issue: Quantitative Imaging Network). 5(1):77-89, March 2019.
39. Y Lim, SG Lingala, SS Narayanan, **KS Nayak**. Dynamic off-resonance correction for spiral real-time MRI of speech. *Magnetic Resonance in Medicine*. 81(1):234-246. January 2019.
40. AH Xiang, E Trigo, MP Martinez, N Katkhouda, E Beale, X Wang, J Wu, T Chow, C Montgomery, **KS Nayak**, F Hendee, TA Buchanan (for the RISE Consortium). Impact of gastric banding versus metformin on beta-cell function in adults with impaired glucose tolerance or mild type 2 diabetes. *Diabetes Care*. 41(12):2544-2551, December 2018
41. RM Kato, YC Kim, B Joshi, S Loloyan, CP Wee, Z Wu, W Tran, TG Keens, MCK Khoo, **KS Nayak**, SLD Ward. Upper airway narrowing during central apnea in obese adolescents. *Annals of the American Thoracic Society*. 15(12):1465-1471. December 2018.
42. X Zhong, T Martin, HH Wu, **KS Nayak**, KH Sung. Prostate DCE-MRI with B1+ Correction using an Approximated Analytical Approach. *Magnetic Resonance in Medicine*. 80(6):2525-2537, December 2018.
43. V Ramanarayanan, S Tilsen, M Proctor, J Töger, L Goldstein, **KS Nayak**, S Narayanan. Analysis of Speech Production Real-Time MRI. *Computer Speech and Language*. 52:1-22, November 2018.
44. HP Do, V Ramananan, X Qi, J Barry, GA Wright, NR Ghugre, **KS Nayak**. Non-contrast Assessment of Microvascular Integrity using Arterial Spin Labeled CMR in a Porcine Model of Acute Myocardial Infarction. *Journal of Cardiovascular Magnetic Resonance*. 20:45. July 2018.
45. TR Jao, **KS Nayak**. Demonstration of Velocity Selective Myocardial Arterial Spin Labeling Perfusion Imaging in Humans. *Magnetic Resonance in Medicine*. 80(1):272-278. July 2018.
46. Y Guo, SG Lingala, Y Bliesener, RM Lebel, Y Zhu, **KS Nayak**. Joint arterial input function and tracker kinetic parameter estimation from under-sampled DCE-MRI using a model consistency constraint. *Magnetic Resonance in Medicine*. 79(5):2804-2815. May 2018.
47. V Landes, **KS Nayak**. Simple Method for RF Pulse Measurement using Gradient Reversal. *Magnetic Resonance in Medicine*. 79(5):2642-2651. May 2018.

48. SG Lingala, Y Zhu, Y Lim, A Toutios, Y Ji, W-C Lo, N Seiberlich, S Narayanan, **KS Nayak**. Feasibility of spiral through-time GRAPPA for low latency accelerated real-time MRI of speech. *Magnetic Resonance in Medicine*. 78(6):2275-2282. December 2017.
49. W Chen, E Gillett, MCK Khoo, SL Davidson Ward, **KS Nayak**. Real-time Multi-slice MRI during Continuous Positive Airway Pressure Reveals Upper Airway Response to Pressure Change. *Journal of Magnetic Resonance Imaging*. 46(5):1400-1408. November 2017.
50. Y Guo, SG Lingala, Y Zhu, RM Lebel, **KS Nayak**. Direct Estimation of Tracer-Kinetic Parameter Maps from Highly Undersampled Brain Dynamic Contrast Enhanced MRI. *Magnetic Resonance in Medicine*. 78(4):1566-1578. October 2017.
51. AJ Yoon, HP Do, S Cen, MW Fong, F Saremi, ML Barr, **KS Nayak**. Assessment of segmental myocardial blood flow and myocardial perfusion reserve by adenosine-stress myocardial arterial spin labeling perfusion imaging. *Journal of Magnetic Resonance Imaging*. 46(2):413-420. August 2017.
52. HP Do, AJ Yoon, MW Fong, F Saremi, ML Barr, **KS Nayak**. Double-gated Myocardial ASL Perfusion Imaging is Robust to Heart Rate Variation. *Magnetic Resonance in Medicine*. 77(5):1975-1980. May 2017.
53. J Töger, T Sorensen, K Somandepalli, A Toutios, SG Lingala, S Narayanan, **KS Nayak**. Test-retest repeatability of human speech biomarkers from static and real-time dynamic magnetic resonance imaging. *Journal of the Acoustical Society of America*. 141(5): 3323. May 2017.
54. SG Lingala, Y Zhu, YC Kim, A Toutios, S Narayanan, **KS Nayak**. A Fast and Flexible MRI System for the Study of Dynamic Vocal Tract Shaping. *Magnetic Resonance in Medicine*. 77:112-125. January 2017.
55. Y Zhu, Y Guo, SG Lingala, RM Lebel, M Law, **KS Nayak**. GOCART: Golden-angle Cartesian Randomized Time-resolved 3D MRI. *Magnetic Resonance Imaging*. 34(7):940-950. September 2016.
56. Z Wu, W Chen, MCK Khoo, SL Davidson Ward, **KS Nayak**. Evaluation of upper airway collapsibility using real-time MRI. *Journal of Magnetic Resonance Imaging*. 44(1):158-167. July 2016. Recipient of the W.S. Moore Young Investigator Award at ISMRM 2016.
57. Z Wu, F Han, P Hu, **KS Nayak**. Anisotropic Field-of-View Support for Golden Angle Radial Imaging. *Magnetic Resonance in Medicine*. 76(1):229-236. July 2016
58. L Nava-Guerra, WH Tran, P Chalacheva, S Loloyan, B Joshi, TG Keens, **KS Nayak**, SL Davidson Ward, MCK Khoo. Model-based stability assessment of ventilatory control in overweight adolescents with obstructive sleep apnea during NREM sleep. *Journal of Applied Physiology*. 121(1):185-97. July 1 2016.
59. X Miao, SG Lingala, Y Guo, T Jao, M Usman, C Prieto, **KS Nayak**. Accelerated Cardiac Cine MRI Using Locally Low Rank and Finite Difference Constraints. *Magnetic Resonance Imaging*. 34(6):707-714. July 2016.
60. Z Wu, W Chen, **KS Nayak**. Minimum Field Strength Simulator for Proton Density Weighted MRI. *PLoS ONE* 11(5): e0154711. May 2016.
61. Y Guo, RM Lebel, Y Zhu, SG Lingala, MS Shiroishi, M Law, **KS Nayak**. High-resolution whole-brain DCE-MRI using Constrained Reconstruction: Prospective Clinical Evaluation in Brain Tumor Patients. *Medical Physics*. 43(5):2013-2023. May 2016.
62. F Kober, T Jao, T Troalen, **KS Nayak**, Myocardial Arterial Spin Labeling. *Journal of Cardiovascular Magnetic Resonance*. 18:22. April 2016.
63. A Javed, YC Kim, MCK Khoo, SLD Ward, **KS Nayak**. Dynamic 3D MR Visualization and Detection of Upper Airway Obstruction during Sleep using Region Growing Segmentation. *IEEE Transactions on Biomedical Engineering*. 63(2):431-437. February 2016.

64. SG Lingala, BP Sutton, ME Miquel, **KS Nayak**. Recommendations for Real-Time Speech MRI. *Journal of Magnetic Resonance Imaging*. 43(1):28-44. January 2016.
65. VC Rispoli, JF Nielsen, **KS Nayak**, JLA Carvalho. Computational fluid dynamics simulations of blood flow regularized by 3D phase contrast MRI. *Biomedical Engineering Online*. 14:110. November 2015.
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Imaging Network Ontario 2021

29. JJ Weyers, V Ramanan, J Barry, M Larsen, **KS Nayak**, GA Wright, NR Ghugre. "An Exploration of Myocardial Blood Flow, Blood Volume, and Oxygen Consumption at Varying Levels of Hyperemic Stress Reveals Blood Flow as the Dominant Influence on T2 Relaxation Time". Imaging Network Ontario, Online, March 2021.

ISMRM Scientific Sessions 2020

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31. Z Zhao, Y Lim, D Byrd, SS Narayanan, **KS Nayak**. "Improved 3D real-time MRI with Stack-of-Spiral (SOSP) trajectory and variable density randomized encoding of speech production". Proc. ISMRM 28th Scientific Session, Online, August 2020, p617.
32. Y Lim, SS Narayanan, **KS Nayak**. "Attention-Gated Convolutional Neural Networks for Off-Resonance Correction of Spiral Real-Time Magnetic Resonance Imaging". Proc. ISMRM 28th Scientific Session, Online, August 2020, p1005.
33. A Javed, **KS Nayak**. "Multi-slice Arterial Spin Labeled Myocardial Perfusion Imaging with single-shot EPI". Proc. ISMRM 28th Scientific Session, Online, August 2020, p1309.
34. V Landes, A Javed, TR Jao, Q Qin, KS Nayak. "Fourier Transform based Velocity-selective Labeling Pulses for Myocardial ASL". Proc. ISMRM 28th Scientific Session, Online, August 2020, p2097.
35. X Wang, NG Lee, AE Campbell-Washburn, **KS Nayak**. "Realistic Simulation of High-Performance Low Field Cardiac Cine Imaging". Proc. ISMRM 28th Scientific Session, Online, August 2020, p2181.
36. NG Lee, **KS Nayak**. "Parameter estimation with matrix-based signal models using VARPRO for transient- and steady-state imaging". Proc. ISMRM 28th Scientific Session, Online, August 2020, p3236.
37. NG Lee, A Javed, TR Jao, **KS Nayak**. "Numerical Approximation to the General Kinetic Model for ASL Quantification". Proc. ISMRM 28th Scientific Session, Online, August 2020, p3291.
38. Z Zhu, Y Bliesener, RM Lebel, **KS Nayak**. "Direct Estimation of pre-contrast T1 for DCE-MRI". Proc. ISMRM 28th Scientific Session, Online, August 2020, p3468.
39. E Mushtaq, A Javed, **KS Nayak**. "Optimal data sampling and image reconstruction for Cartesian bSSFP ASL-CMR". Proc. ISMRM 28th Scientific Session, Online, August 2020, p3476.
40. NG Lee, Z Zhu, **KS Nayak**. "Variable flip angle T1 mapping with MT-balanced RF pulses". Proc. ISMRM 28th Scientific Session, Online, August 2020, p3793.

MIDL 2020

41. Y Lim, SS Narayanan, **KS Nayak**. "Deblurring for spiral real-time MRI using convolutional neural networks." Medical Imaging with Deep Learning, July 2020. paper #47.

SCMR 2020

42. JJ Weyers, A Javed, J Barry, M Larsen, GA Wright, **KS Nayak**, N Ghugre. "Optimizing vasodilator dose to induce hyperemic stress during myocardial perfusion assessment in a porcine model." Proc. SCMR 23rd Scientific Sessions, Orlando, February 2020. QF1-003.

ISMRM Workshop on Data Sampling and Image Reconstruction 2020

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44. Y Bliesener, RM Lebel, J Acharya, R Frayne, **KS Nayak**. "Pseudo Test-Retest Evaluation of Sparse DCE-MRI of Brain Tumor." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, January 2020.

ISMRM Scientific Sessions 2019

45. X Miao, **KS Nayak**, JC Wood. "In-vivo validation of T2- and susceptibility-based SvO2 measurements with jugular vein catheterization under hypoxia and hypercapnia". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p296.

46. S Lingala, Y Lim, S Kruger, **KS Nayak**. "Improved spiral dynamic MRI of vocal tract shaping at 3 Tesla using dynamic off-resonance artifact correction". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p441.
47. Y Lim, Y Bliesener, S Narayanan, **KS Nayak**. "Calibrationless Deblurring of Spiral RT-MRI of Speech Production Using Convolutional Neural Networks". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p673.
48. V Landes, **KS Nayak**. "GRATER-based RF pulse predistortion improves multiband bSSFP imaging". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p921.
49. W Chen, D Byrd, S Narayanan, **KS Nayak**. "Intermittently Tagged Real-Time MRI Reveals Internal Tongue Motion during Speech Production". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p940.
50. N Lee, A Javed, TR Jao, **KS Nayak**. "Quantification for Steady-Pulsed ASL Perfusion Imaging". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p2191.
51. A Javed, NG Lee, HP Do, N Ghugre, G Wright, EC Wong, **KS Nayak**. "Optimization of Steady-Pulsed Arterial Spin Labeling for Myocardial Perfusion Imaging". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p2210.
52. S Sudhakara, Y Lim, W Chen, S Narayanan, **KS Nayak**. "Low-Latency Reconstruction for Real-Time Speech MRI". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p2403.
53. Z Zhu, Y Bliesener, RM Lebel, **KS Nayak**. "Sparse Pre-Contrast T1 Mapping for DCE-MRI Calibration". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p4544.
54. S Gutta, Y Bliesener, J Acharya, M Law, **KS Nayak**. "Sparse DCE-MRI using a Temporal Constraint Learned from Clinical Data". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p4749.
55. V Landes, TR Jao, A Javed, **KS Nayak**. "Improved Velocity-Selective Labeling Pulses for Myocardial ASL". Proc. ISMRM 27th Scientific Session, Montreal, May 2019, p4967.

SCMR 2019

56. HP Do, AJ Yoon, **KS Nayak**. "dnoiseNET: Deep Convolutional Neural Network for Image Denoising." Proc. SCMR/ISMRM Workshop on Machine Learning in CMR, Seattle, February 2019. #6.
57. A Javed, T Jao, N Ghugre, GA Wright, EC Wong, **KS Nayak**. "Saturation-based Steady-Pulsed Myocardial ASL Perfusion Imaging." Proc. SCMR 22nd Scientific Sessions, Seattle, February 2019. P012

Orthopaedic Research Society Annual Meeting, 2019

58. BH Foster, CB Shaw, RD Boutin, CO Bayne, RM Szabo, **KS Nayak**, AJ Chaudhari. "Quantification of Wrist Instability Using Real-Time 3D MRI". Orthopaedic Research Society Annual Meeting, Austin, TX, February 2019. #304 (oral presentation).

ISMRM Workshop on Machine Learning, Part II 2018

59. Y Bliesener, **KS Nayak**. "Posterior Approximation for simultaneous DCE-MRI pharmacokinetic parameter and uncertainty estimation". ISMRM Workshop on Machine Learning Part II, Washington DC, October 2018.
60. S Gutta, M Law, **KS Nayak**. "Deep Convolutional Residual Network for Denoising Brain Tumor DCE-MRI Tracer-Kinetic Maps". ISMRM Workshop on Machine Learning Part II, Washington DC, October 2018.
61. HP Do, Y Guo, AJ Yoon, **KS Nayak**. "Deep Convolutional Neural Networks for Segmentation of Myocardial ASL Short-Axis Data: Accuracy, Uncertainty, and Adaptability" ISMRM Workshop on Machine Learning Part II, Washington DC, October 2018.

ISMRM Scientific Sessions 2018

62. VL Landes, **KS Nayak**. "Improved multi-band RF performance using GRATER-based predistortion". Proc. ISMRM 26th Scientific Session, Paris, June 2018, p171.
63. Y Bliesener, SG Lingala, JP Haldar, and **KS Nayak**, "Influence of whole-brain DCE-MRI (k,t) sampling strategies on variance of pharmacokinetic parameter estimates," Proc. ISMRM 26th Scientific Session, Paris, June 2018. p555.
64. X Zhong, T Martin, S Raman, H Wu, **KS Nayak**, K Sung. "Assessment of Approximated Analytical B1+ Correction Method for Prostate DCE-MRI with Multiple Noise Levels and in 3.0T Systems," Proc. ISMRM 26th Scientific Session, Paris, June 2018. p1519.
65. Y Bliesener, Y Guo, X Zhong, R Bosca, KH Sung, **KS Nayak**. "RF Transmit Calibration for DCE-MRI". Proc. ISMRM 26th Scientific Session, Paris, June 2018. p2183.
66. X Miao X, **KS Nayak**, JC Wood. " Fast Brain Iron Quantification Using QSM with Low Spatial Resolution." Proc. ISMRM 26th Scientific Sessions, Paris, June 2018, p2216.
67. X Miao, S Choi, **KS Nayak**, JC Wood. " QSM-MRI Reveals Increased Brain Iron Deposition in Anemia Patients with Blood Transfusion." Proc. ISMRM 26th Scientific Sessions, Paris, June 2018, p2217.
68. W Chen, Y Lim, Y Bliesener, SS Narayanan, **KS Nayak**. "Comparison of leading reconstruction techniques for real-time speech MRI." Proc. ISMRM 26th Scientific Session, Paris, June 2018. p3516.
69. R Lobos, A Javed, **KS Nayak**, WS Hoge, JP Haldar. "Robust Autocalibrated LORAKS for Improved EPI Ghost Correction with Structured Low-Rank Matrix Models," Proc. ISMRM 26th Scientific Session, Paris, June 2018. p3533.
70. Y Lim, Y Zhu, SG Lingala, D Byrd, SS Narayanan, **KS Nayak**. "3D Real-Time MRI of Vocal Tract Shaping". Proc. ISMRM 26th Scientific Session, Paris, June 2018. p3541.
71. A Javed, TR Jao, **KS Nayak**. "Velocity Sensitivity of Inner-Volume Cardiac Echo Planar Imaging". Proc. ISMRM 26th Scientific Session, Paris, June 2018. p4240.
72. VL Landes, TR Jao, **KS Nayak**. "Practical implementation of SMS bSSFP in the Heart." Proc. ISMRM 26th Scientific Session, Paris, June 2018. p4760.

IEEE International Symposium on Biomedical Imaging 2018

73. RA Lobos, A Javed, **KS Nayak**, WS Hoge, JP Haldar. "Robust Auto-calibrated LORAKS for EPI Ghost Correction." IEEE International Symposium on Biomedical Imaging, Washington DC, April 2018.

Orthopaedic Research Society 2018

74. CB Shaw, BH Foster, RD Boutin, CP Bateni, CO Bayne, RM Szabo, **KS Nayak**, and AJ Chaudhari. "Four-dimensional Real-time MRI For Assessment Of Dynamic Wrist Instability." Orthopaedic Research Society 2018 Annual Meeting, New Orleans, March 2018.

SCMR/EuroCMR 2018

75. A Javed, HP Do, AJ Yoon, **KS Nayak**, P Garg. "Coronary Endothelial Function Testing using Continuous Cardiac ASL-CMR." Proc. SCMR/ISMRM Workshop on CMR in Ischemic Heart Disease, Barcelona, February 2018. WP02
76. HP Do, TR Jao, V Ramanan, GA Wright, NR Ghugre, **KS Nayak**. "Optimal flip-angle for steady-pulsed arterial spin labeled CMR." Proc. SCMR/ISMRM Workshop on CMR in Ischemic Heart Disease, Barcelona, February 2018. WP05
77. V Landes, TR Jao, **KS Nayak**. "Simultaneous Multi-slice bSSFP CMR: Is it feasible?." Proc. SCMR 21st Scientific Sessions, Barcelona, February 2018. P333
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CHEST 2017

79. P Parikh, W Chou, E Valladares, W Chen, T Hammond, **KS Nayak**. "Dynamic MRI Evaluation of Moderate to Severe Obstructive Sleep Apnea across the Obesity Spectrum." American lege of Chest Physicians 2017, Toronto, October 2017.

ISMRM Scientific Sessions 2017

80. VL Landes, **KS Nayak**. "Measurement of Small-Tip RF Pulses Using Gradient Reversal." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p78. ISMRM Merit Awards: Magna Cum Laude.
81. Y Guo, SG Lingala, RM Lebel, **KS Nayak**. "Joint estimation of arterial input function and tracer kinetic parameters from under-sampled DCE-MRI." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p137. ISMRM Merit Awards: Magna Cum Laude.
82. RM Lebel, Y Guo, SG Lingala, R Frayne, **KS Nayak**. "Highly Accelerated DCE imaging with integrated T1 mapping." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p138.
83. NR Ghugre, HP Do, K Chu, V Ramanan, **KS Nayak**, and GA Wright. "Non-contrast assessment of vasodilator response using native myocardial T1 and T2 mapping and Arterial Spin Labeled CMR." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p544.
84. Y Guo, SG Lingala, **KS Nayak**. . "Reconstruction of DCE tracer kinetic parameters from under-sampled data with a flexible model consistency constraint." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p1206.
85. J Chen, SG Lingala, Y Lim, A Toutios, S Narayanan, **KS Nayak** "Task-based Optimization of Regularization in Highly Accelerated Speech RT-MRI." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p1409.
86. HP Do, **KS Nayak** "Physiologically synchronized multi-module pulsed arterial spin labeled (SymPASL) MRI." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p1878.
87. TR Jao, **KS Nayak** "Simultaneous Multi-slice Cardiac ASL." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p1888.
88. Y Bliesener, SG Lingala, JP Haldar, **KS Nayak** "Comparison of (k,t) sampling schemes for DCE MRI pharmacokinetic parameter estimation." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p1909.
89. A Javed, **KS Nayak** "Cardiac ASL using Single-Shot EPI at 3T." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p3237.
90. X Miao, Y Guo, **KS Nayak**, JC Wood. "Accelerated B0 mapping Using X-sampling in k-TE space." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p3667.
91. W Chen, E Gillett, S Davidson Ward, MCL Khoo, **KS Nayak**. "Evaluation of upper airway neuromuscular reflex and passive collapsibility using real-time multi-slice MRI during CPAP." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p3846.
92. Y Lim, SG Lingala, S Narayanan, **KS Nayak**. "Correction of dynamic off-resonance in spiral 2D real-time MRI of speech." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p4017.
93. VL Landes, CM Ferguson, HP Do, JR Woollard, LO Lerman, **KS Nayak**. "Comparison of Renal Blood Flow Measurements Obtained using ASL-MRI and CT Perfusion." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p4856.
94. J Töger, T Sorensen, K Somandepalli, A Toutios, SG Lingala, S Narayanan, **KS Nayak**. "Test-retest repeatability of human speech biomarkers from static and real-time dynamic magnetic resonance imaging." Proc. ISMRM 25th Scientific Sessions, Honolulu, April 2017, p5084.

American Society for Neuroradiology 2017

95. S Bergamaschi, R Correia, N Calixto, K Bezerra, P Kim, M Kim-Tenser, N Sanossian, A Amar, **KS Nayak**, M Law. "Automated CT perfusion software is challenging in evaluating posterior circulation strokes", ASNR 55th Annual meeting, Long Beach, April 2017.
96. S Bergamaschi, R Correia, N Calixto, **KS Nayak**, P Kim, A Amar, M Kim, N Sanossian, S Cen, M Law. "Measurement of Infarct Core Volume Using Automated CT Perfusion Processing Software and Comparison with DWI in Stroke Patients in a Daily Practice Population", ASNR 55th Annual meeting, Long Beach, April 2017.

Society for Cardiovascular Magnetic Resonance 2017

97. HP Do, AJ Yoon, MW Fong, L Grazette, F Saremi, ML Barr, **KS Nayak**. "Vasodilator Response in Heart Transplant Recipients using T1-based Myocardial Blood Volume Mapping." SCMR/ISMRM Co-provided Workshop on CMR for Probing Mechanisms of Heart Disease: Micro to Macro to Model, Washington DC, February 2017.
98. NR Ghugre, HP Do, V Ramanan, **KS Nayak**, GA Wright. "Contrast Free Assessment of Vasodilator Response using Myocardial T2 BOLD and Arterial Spin Labeled CMR." Proc. SCMR 20th Scientific Sessions, Washington DC, February 2017.

MR Angio Club 2016

99. RM Lebel, N Nallapareddy, SG Lingala, LB Andersen, R Frayne, **KS Nayak**. "Automatic Bolus Detection for Dynamic Contrast Enhanced Imaging with Sparse Sampling," Proc. MR Angio Club 28th Meeting, Chicago, September 2016.

InterSpeech 2016

100. J Töger, Y Lim, SG Lingala, S Narayanan, **KS Nayak**. "Sensitivity of quantitative RT-MRI metrics of vocal tract dynamics to image reconstruction settings." InterSpeech, San Francisco, Sep 2016.
101. SG Lingala, A Toutios, J Töger, Y Lim, Y Zhu, YC Kim, C Vaz, S Narayanan, **KS Nayak**. "State-of-the-art MRI Protocol for Comprehensive Assessment of Vocal Tract Structure and Function." InterSpeech, San Francisco, Sep 2016.
102. A Toutios, SG Lingala, C Vaz, J Kim, J Esling, P Keating M Gordon, D Byrd, L Goldstein, **KS Nayak**, S Narayanan. "Illustrating the Production of the International Phonetic Alphabet Sounds using Fast Real-Time Magnetic Resonance Imaging." InterSpeech, San Francisco, Sep 2016.
103. Y Lim, SG Lingala, A Toutios, S Narayanan, **KS Nayak**. "Improved Depiction of Tissue Boundaries in Vocal Tract Real-time MRI using Automatic Off-resonance Correction." InterSpeech, San Francisco, Sep 2016.

ISMRM Scientific Sessions 2016

104. Z Wu, W Chen, MCK Khoo, SLD Ward, **KS Nayak**, "Evaluation of Upper Airway Collapsibility using Simultaneous Multi-slice Real-Time MRI," Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p39. **W.S. Moore Young Investigator Award**.
105. T Jao, **KS Nayak**. "The Physiological Noise Contribution to Temporal Signal-to-Noise Increases with Decreasing Resolution and Acceleration in Quantitative CMR." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p414. ISMRM Merit Awards: Magna Cum Laude.
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107. W Chen, Z Wu, SLD Ward, MCK Khoo, **KS Nayak**. "Real-time Multi-slice MRI during CPAP reveals dynamic changes in upper airway in response to pressure change." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p698.

108. Y Guo, SG Lingala, Y Zhu, RM Lebel, **KS Nayak**. "Direct Reconstruction of Kinetic Parameter Maps in Accelerated Brain DCE-MRI using the Extended-Tofts Model." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p868.
109. HP Do, V Ramanan, GA Wright, NR Ghugre, **KS Nayak**. "Non-contrast vasodilator response assessment in a porcine model of acute myocardial infarction using arterial spin labeled CMR." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p999.
110. VL Landes, EK Doyle, PJ Prado, JC Wood, **KS Nayak**. "Feasibility of Non-invasive Proton-Density Fat Fraction Evaluation using a Single-sided MR device." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p2206
111. EK Doyle, JM Chia, **KS Nayak**, JC Wood. "R2* estimation with CSI: a pilot and feasibility study." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p2790.
112. HP Do, **KS Nayak**. "Myocardial ASL Perfusion Imaging using MOLLI." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p3142.
113. HP Do, AJ Yoon, MW Fong, F Saremi, ML Barr, **KS Nayak**. "Double-gated Myocardial ASL Perfusion Imaging provides insensitivity to heart rate variation." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p3145.
114. T Jao, **KS Nayak**. "Demonstration of Velocity Selective Myocardial Arterial Spin Labeling." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p3146.
115. SG Lingala, Y Zhu, Y Ji, A Toutios, W-C Lo, N Sieberlich, S Narayanan, **KS Nayak**. "Accelerating Real-time MRI of speech using spiral through-time GRAPPA." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p3228.
116. SG Lingala, S Bhave, Y Zhu, **KS Nayak**, M Jacob. "Temporal point spread function interpretation of low-rank, dictionary learning models in dynamic MRI." Proc. ISMRM 24rd Scientific Sessions, Singapore, May 2016. p4233.

American Society for Neuroradiology 2016

117. A Kammen, B Morkin, S Cen, SG Lingala, J Arevalo-Perez, A Thomas, K Peck, T Kaley, M Law, R Young, **KS Nayak**. "Multi-Center Study demonstrates Dynamic Contrast Enhanced Permeability MRI differentiates pseudo progression from true disease progression in primary high-grade gliomas and metastatic melanoma", ASNR 54th Annual meeting, Washington, May 2016.
118. A Kammen, B Morkin, S Cen, SG Lingala, M Law, **KS Nayak**. "High Resolution DCE MRI permeability differentiates pseudo progression from true disease progression in primary high-grade gliomas and metastatic melanoma", ASNR 54th Annual meeting, Washington, May 2016.

Society for Cardiovascular Magnetic Resonance 2016

119. HP Do, V Ramanan, TR Jao, GA Wright, **KS Nayak**, NR Ghugre. "Non-contrast Myocardial Perfusion Assessment in Porcine Acute Myocardial Infarction using Arterial Spin Labeled CMR." SCMR 19th Scientific Sessions, Los Angeles, January 2016 O007.
120. Z Wu, F Han, P Hu, **KS Nayak**. "Improved Scan Efficiency for Golden-Angle Radial CMR with Anisotropic Field-of-View." SCMR 19th Scientific Sessions, Los Angeles, January 2016 O108.
121. TR Jao, **KS Nayak**. "Demonstration of Velocity Selective Myocardial Arterial Spin Labeling Perfusion CMR." SCMR 19th Scientific Sessions, Los Angeles, January 2016 P098.
122. TR Jao, HP Do, **KS Nayak**. "Myocardial ASL-CMR Perfusion Imaging with Improved Sensitivity using GRAPPA." SCMR 19th Scientific Sessions, Los Angeles, January 2016 P100.

ISMRM Workshop on Data Sampling and Image Reconstruction 2016

123. Z Wu, W Chen, **KS Nayak**. "Low-Field Simulation and Minimum Field Strength Requirements." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, Jan 2016.
124. SG Lingala, Y Guo, Y Zhu, N Nallapareddy, RM Lebel, M Law, **KS Nayak**. "Accelerated brain DCE-MRI using Contrast Agent Kinetic Models as Temporal Constraints." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, Jan 2016.
125. Y Guo, Y Zhu, SG Lingala, RM Lebel, **KS Nayak**. "Direct Reconstruction of Tracer-Kinetic Parameter Maps from Prospective Highly Under-sampled DCE-MRI." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, Jan 2016.
126. SG Lingala, Y Mohsin, S Bhave, X Miao, Y Guo, **KS Nayak**, E. DiBella, M. Jacob. "Data-driven adaptive reconstruction algorithms for accelerated dynamic MRI: an open source MATLAB package." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, Jan 2016.
127. S Poddar, **KS Nayak**, M Jacob. "A navigator-based acquisition and reconstruction scheme for undated free-breathing dynamic imaging." ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, Arizona, Jan 2016.

Radiological Society of North America 2015

128. **KS Nayak**, Y Guo, Y Zhu, SG Lingala, RM Lebel, N Nallapareddy, MS Shiroishi, M Law. "Improved clinical DCE-MRI pipeline for high resolution, whole brain imaging: application to brain tumor patients." RSNA, Chicago, November 2015.

ISMRM Workshop on Simultaneous Multislice Imaging 2015

129. VL Landes, TR Jao, **KS Nayak**. "CAIPIRINHA-SSFP with improved banding artifact performance," ISMRM Workshop on Simultaneous Multi-slice Imaging 2015, July 2015.
130. VL Landes, TH Kim, JP Haldar, **KS Nayak**. "Experimental Validation of SMS-LORAKS," ISMRM Workshop on Simultaneous Multi-slice Imaging 2015, July 2015.

ISMRM Scientific Sessions 2015

131. SG Lingala, Y Guo, Y Zhu, S Barnes, RM Lebel, **KS Nayak**. "Accelerated DCE MRI Using Constrained Reconstruction Based On Pharmacokinetic Model Dictionaries." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p196. ISMRM Merit Awards: Magna Cum Laude
132. Z Wu, MCK Khoo, **KS Nayak**. "Simultaneous Multi-slice Airway Compliance Measurement using Sparse Golden-angle Radial CAIPIRINHA." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p242. ISMRM Merit Awards: Summa Cum Laude.
133. X Miao, SG Lingala, Y Guo, T Jao, **KS Nayak**. "Accelerated Cardiac Cine Using Locally Low Rank and Total Variation Constraints." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p571. ISMRM Merit Awards: Magna Cum Laude
134. Y Guo, Y Zhu, SG Lingala, RM Lebel, **KS Nayak**. "Highly Accelerated Brain DCE MRI with Direct Estimation of Pharmacokinetic Parameter Maps." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p573. ISMRM Merit Awards: Summa Cum Laude
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136. E Doyle, J Chia, **KS Nayak**, JC Wood. "Quantification of Rapid Decay Species with Short TE Spin Echo Sequence." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p1674.

137. E Doyle, J Chia, **KS Nayak**, JC Wood. "Spin Echo B1+ Mapping in High Susceptibility Tissues." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p2383.
138. Z Wu, **KS Nayak**. "Anisotropic Field-of-View Support for Golden Angle Radial Imaging." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p2437.
139. Y Zhu, Y Guo, SG Lingala, RM Lebel, M Law, **KS Nayak**. "Evaluation of GLACIER Sampling for 3D DCE-MRI." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p2535.
140. V Rispoli, JF Nielsen, **KS Nayak**, JL Carvalho "Computational fluid dynamics simulations guided by Fourier velocity encoded MRI." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p2720.
141. Y Guo, RM Lebel, Y Zhu, MS Shiroishi, M Law, **KS Nayak**. "High-resolution Whole-brain DCE MRI of Brain Tumor using Constrained Reconstruction: Prospective Clinical Evaluation." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p3050.
142. Y Zhu, Y Guo, SG Lingala, S Barnes, RM Lebel, M Law, **KS Nayak**. "Evaluation of DCE-MRI Data Sampling, Reconstruction and Model Fitting Using Digital Brain Phantom." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p3052.
143. W Chen, Y Guo, Z Wu, **KS Nayak**. "MRI Constrained Reconstruction without Tuning Parameters Using ADMM and Morozov's Discrepancy Principle." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p3410.
144. W Chen, **KS Nayak**. "Thermal Noise Propagation in Water-fat Imaging and Fat Fraction Measurement." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p3663.
145. RM Lebel, Y Guo, Y Zhu, SG Lingala, R Frayne, LB Anderson, J Easaw, **KS Nayak**. "The Comprehensive Contrast-Enhanced Neuro Exam." Proc. ISMRM 23rd Scientific Sessions, Toronto, June 2015, p3705.

American Thoracic Society Annual Meeting 2015

146. Z Wu, MCK Khoo, SLD Ward, **KS Nayak**. "Noninvasive Airway Compliance Measurement Using High Spatiotemporal Resolution Real-Time Multi-Slice MRI." *Am J Respir Crit Care Med* 191, 2015, A4127.

Society for Cardiovascular Magnetic Resonance 2014

147. A Javed, TR Jao, **KS Nayak**. "Motion Correction Facilitates the Automation of Cardiac ASL Perfusion Imaging," *Journal of Cardiovascular Magnetic Resonance* 2015, 17(Suppl 1):P51. Nice, France, February 2015.
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INVITED TALKS

INVITED CONFERENCE TALKS

1. Body Composition Assessment using Novel 0.55 Tesla MRI, USC Diabetes and Obesity Research Institute 9th Annual Symposium, April 2022.
2. Opportunities at 0.55 Tesla, Siemens Healthineers Lunchtime Symposium, ISMRM 2021 Virtual Meeting, May 2021.
3. High Performance Low Field MRI at USC, Southern California Hi-Lo Field Workshop, Los Angeles, October 2019.
4. High Performance Low Field MRI, NIST Workshop on Low-Field Magnetic Resonance, Boulder Colorado, August 2019.
5. Myocardial Arterial Spin Labeled (ASL) Perfusion Imaging, Non-Contrast CMR Assessment of Ischemic Heart Disease, ISMRM Scientific Sessions, Montreal, May 2019.
6. Journal to Awareness of Social Bias in Science, RESONATE: Discussion of Scientific and Social Biases within ISMRM. ISMRM/ESMRMB Scientific Sessions, Paris, June 2018.
7. Acquisition Strategies: CE and NCE Approaches, Sunrise Course: Advanced Techniques in Cardiovascular MR: Tissue Perfusion, ISMRM/ESMRMB Scientific Sessions, Paris, June 2018.
8. Advanced Reconstruction Techniques for DCE/DSC, Weekend Course: Advanced Topics in Perfusion MRI, ISMRM/ESMRMB Scientific Sessions, Paris, June 2018.
9. Arterial Spin Labeling, Session: Non-contrast Methods, SCMR/ISMRM Co-Provided Workshop on CMR in Ischemic Heart Disease, Barcelona, February 2018.
10. Diagnostic Real-Time MRI, Plenary Session "Dynamic Real-Time MRI", ISMRM 2017 Scientific Sessions, Honolulu, HI, April 2017.
11. MR Phase Imaging, ISMRM Workshop on Quantitative MR Flow: Innovation & Implementation for Clinical & Physiological Insights, San Francisco, CA, October 2016.
12. MRI at Multiple Spatial Scales, daVinci Convergence Symposium - Imaging Across Scales, Santa Monica, CA, February 2016.
13. Myocardial ASL Perfusion, ISMRM Workshop on Non-Contrast Cardiovascular MRI, Long Beach, CA, March 2015.
14. Real-Time Imaging and Compressed Sensing, Gordon Research Conference on In-Vivo NMR, Proctor Academy, Andover, NH, July 2014.
15. Imaging Challenges at 3T and Above, ISMRM 2014, Course: Cardiovascular MRI at 3T and Beyond, Milano, Italy, May 2014.
16. Real-Time MRI of Speech Production, Speech MRI Summit, Los Angeles, CA, February 2014.
17. How to Quantify Blood Flow, SCMR 16th Scientific Sessions, Physician Pre-conference Course, January 2014.
18. What is Compressed Sensing and How Can We Use It? ASFNR-ISMRM Session on Ultrafast MR Imaging, ASNR 51st Annual Meeting, San Diego, CA, May 2013.
19. New CMR Sequences and Techniques. ISMRM 2013 Weekend Course, Recent Innovations in Cardiovascular MR, Recent Developments in Hardware and Software Relevant to CMR. Salt Lake City, April 2013.
20. Towards myocardial perfusion imaging using arterial spin labeling at high fields. SCMR-ISMRM Joint Workshop: New Horizons in High-Field Cardiovascular MR: Promise and Progress. San Francisco, CA, January 2013.
21. New CMR Sequences and Techniques. ISMRM 2012 Weekend Course, Recent Advances in Cardiovascular MR, Recent Developments in Hardware and Software. Melbourne, Australia, May 2012.

22. Non-contrast perfusion methods: Ready for prime time? SCMR 14th Scientific Sessions, Orlando, FL, February 2012.
23. CMR Perfusion using Arterial Spin Labeling. GE Lunchtime Symposium at the SCMR 14th Scientific Sessions, Nice, France, February 2011.
24. Novel Myocardial Perfusion Techniques: Arterial Spin Labeling. SCMR 14th Scientific Sessions, Basic Science Pre-conference Course. Nice, France, February 2011.
25. Advanced Pulse Sequences for 3 Tesla CMR. ISMRM 18th Scientific Sessions, Sunrise Course: Cardiovascular MR Imaging, Stockholm, May 2010.
26. Tools for Mapping and Quantitative Imaging. ISMRM 18th Scientific Sessions, Educational Course: Imaging Strategies, Stockholm, May 2010.
27. Update on Myocardial Perfusion using Arterial Spin Labeling. SCMR 13th Scientific Sessions, Phoenix, AZ, January 2010.
28. Technical Challenges and Solutions for CMR at 3 Tesla. SCMR High-Field and Basic Science Pre-conference workshop. Phoenix, AZ, January 2010.
29. Real-Time Measurement of Cardiac Function and Flow. ISMRM Workshop on Cardiovascular Function, Flow, and Tissue Mechanics. Sintra, Portugal, September 2009.
30. Quantitative MRI of Abdominal Fat: Recent Developments. NCI Transdisciplinary Research on Energetics and Cancer (TREC) Scientific Meeting. Cleveland, OH, May 2009.
31. Myocardial Perfusion using Arterial Spin Labeling. SCMR 12th Scientific Sessions, Orlando, FL, January 2009.
32. Real-Time Imaging at 3T. SCMR 11th Scientific Sessions, Los Angeles, CA, February 2008.
33. Handling RF Variation at 3T. Workshop on High-Field Cardiovascular MR: An Update, Los Angeles, CA, January 2008.
34. Real-Time Imaging at 3T. ISMRM 15th Scientific Sessions, Clinical Categorical Course: Cardiovascular Imaging at High Field, Berlin, May 2007.
35. Strategies for collecting temporally-resolved physiological data. ISMRM 15th Scientific Sessions, Educational Course: MR Physics for Physicists, Berlin, May 2007.
36. Spiral and Real-Time Imaging. SCMR 10th Scientific Sessions, Rome, February 2007.
37. The Current Cutting-Edge in Rapid CMR Imaging, SCMR 10th Scientific Sessions, Rome, February 2007.
38. Spiral and Real-Time Imaging. NIH/NIBIB Workshop on High-Field Cardiovascular Magnetic Resonance, Washington, DC, September 2006.
39. EPI Artifact Correction using Parallel Imaging. IEEE-EMBS, Special Session on Cardiac Imaging, September 2006.
40. Real-Time Flow Imaging. ISMRM Workshop on Flow and Motion: Imaging Assessment of Cardiovascular and Tissue Mechanics, New York, July 2006.
41. Recent Advances in the Diagnosis of Coronary Artery Disease. North American Konkani Association Medical Symposium, Hamilton, Ontario, July 2006.
42. Real-Time Color Flow MRI. ISMRM 14th Scientific Sessions, Flow and Motion Study Group Meeting, Seattle, May 2006.
43. Spirals at High Field. SCMR 9th Scientific Sessions, Basic Science Plenary Session: Parallel and Other Novel Imaging Techniques, Miami, January 2006.
44. Identification, Modeling and Correction of Image Artifacts. ISMRM 13th Scientific Sessions, Educational Course: MR Physics for Physicists, Miami, May 2005.
45. Real-Time Cardiac Imaging. GE-Asia Seminar Series (five locations): Sydney, New Delhi, Mumbai, Beijing, and Shanghai, March 2005.

46. How to Transition to the Real World. SCMR 8th Scientific Sessions, Trainee and Students Hour, San Francisco, January 2005.
47. Non-cooperative Patients and Arrhythmia: Real-Time and Single Shot Imaging. SCMR 8th Scientific Sessions, Pre-Conference Workshop, San Francisco, January 2005.
48. Cardiovascular 3T Imaging. NASCI 32nd Annual Meeting, Next Generation Cardiac MR Session, Amelia Island, October 2004.
49. Hemodynamic Visualization with Real-Time MRI. University of Toronto Real-Time MRI Workshop, Toronto, July 2003.

COLLOQUIA

UCSF Lung Imaging Seminar (virtual), June 2022
 UT Southwestern, Radiology and AIRC Grand Rounds (virtual), April 2021
 California Institute of Technology, Medical Engineering Department, February 2020
 Long Beach Memorial Medical Center, Cardiology Grand Rounds, May 2019
 University of Southern California, BRIDGE institute seminar, March 2019
 University of Southern California, Brain Tumor Consortium, March 2019
 Aix-Marseille, MRI Seminar, June 2018
 University of California at Berkeley, Bioengineering Seminar, May 2018
 University of Southern California, Cardiology Grand Rounds, March 2018
 Axilor Ventures, December 2017
 GE John F. Welch Technology Center, December 2017
 Dayananda Sagar College of Engineering, November 2017
 ISMRM India Chapter, Bangalore, November 2017
 Indian Institute of Sciences, Computational and Data Sciences, November 2017
 University of Wisconsin-Madison, Medical Physics, October 2017
 Arizona State University, Biomedical Engineering, September 2017
 University of California, San Diego, Physiology & Medicine, June 2017
 Case Western Reserve University, Case Center for Imaging Research, October 2016
 University of California, Davis, Radiology Grand Rounds, October 2016
 Cincinnati Children's Hospital, Radiology Grand Rounds, October 2014
 University of California, Los Angeles, Department of Radiology, June 2014
 University of Calgary, Alberta, Canada, June 2013
 University of California, San Diego, Center for Functional MRI, May 2013
 University of Southern California, Center for Excellence in Teaching, May 2013
 Cedars-Sinai Medical Center, Biomedical Imaging Research Institute, January 2013
 Seoul National University Hospital, Seoul, South Korea, August 2012
 Neuroscience Research Institute, Gachon University, Incheon, South Korea, August 2012
 NIH / NHLBI Laboratory for Cardiac Energetics, Bethesda, June 2010.
 Linköping University Hospital, Linköping, Sweden, February 2010.
 University of Louisville, Electrical Engineering, Louisville, November 2009
 University of California, San Diego, Penner Biomechanics Seminar, October 2009
 Brigham and Women's Hospital, Department of Radiology, October 2009
 FAMU/FSU College of Engineering, May 2009
 Loma Linda University Medical Center, May 2008
 Yale University, Bioimaging Science Lecture Series, November 2006.
 University of California, San Diego, Center for Functional MRI, August 2006.
 GE Global Research Center, Niskayuna, July 2006.
 University of Virginia, Biomedical Engineering, Charlottesville, April 2006.

Johns Hopkins University, Radiology, Baltimore, April 2006.
Florida State University, Computer Science, Tallahassee, November 2004.
NIH / NHLBI Laboratory for Cardiac Energetics, Bethesda, February 2004.
Medtronic AVE Inc., Santa Rosa, June 2003.
Linköping University Hospital, Linköping, Sweden, October 2002.
Guidant Inc., Santa Clara, September 2001.
Agilent Labs, Palo Alto, April 2001.
Kawasaki Medical College, Okayama, Japan, July 2000.

TEACHING & MENTORING

TEACHING and MENTORING GRANTS

- **Principal Investigator**, NSF/DGE, “New GK-12: Body Engineering Los Angeles,” Grant #1045595. August 2011-July 2016. \$1.4M. (with \$1M matching funds from the USC Viterbi School of Engineering)
- **Principal Investigator**, SAMPE Foundation, “GK-12: Body Engineering Los Angeles,”. August 2014. \$10,000.
- **Principal Investigator**, Stevens Institute for Innovation, Innovation Inside Curriculum Grant, “Commercialization of Magnetic Resonance Imaging Technology,” December 2007. \$2,000.
- **Principal Investigator**, Viterbi New Initiatives Request, “Development of a Tabletop MRI Design-Build Course,” July 2019, \$25,000.

DIRECT TRAINEES (PhD and Postdoc)

Name	Degrees, Years	Current Position
Joao Luiz Carvalho	PhD, 2004-08	Professor of Electrical Engineering, Universidade de Brasilia (Brazil)
Kyunghyun Sung	PhD, 2004-08	Associate Professor of Radiology, University of California, Los Angeles
Hsu-Lei Lee	PhD, 2004-08	MR Physicist, Cedars-Sinai Medical Center
Taehoon Shin	PhD, 2004-09 Postdoc, 2009-10	Associate Professor of Biomedical Engineering, Ewha Womans University (Korea)
Chia-Ying Liu	Postdoc, 2004-06	Research Associate, University of Wisconsin, Madison
Jon-Fredrik Nielsen	Postdoc, 2005-08	Associate Research Scientist, Biomedical Engineering, University of Michigan, Ann Arbor
Yoonchul Kim	PhD, 2005-10 Postdoc, 2010-14	Scientist, Samsung Medical Center (Korea)
Zungho Zun	PhD, 2005-10	Assistant Professor, Electrical Engineering and Radiology, Cornell University
Mahender Makhijani	PhD, 2005-12	Senior Engineer, Continuum Analytics
Houchun Hu	Postdoc, 2006-09	Professor of Radiology, University of Colorado, Denver
Samir Sharma	PhD, 2007-12	Engineer, Canon Medical Systems,
Travis Smith	PhD, 2007-12	Research Assistant Professor, Oregon Health Sciences University
Marc Lebel	Postdoc, 2010-12	Scientist, GE Applied Sciences Laboratory (Canada)
Yinghua Zhu	PhD, 2010-15	Software Engineer, Google
Ziyue Wu	PhD, 2011-15	CEO, Wuxi Marvelstone Healthcare (China)
Johannes Töger	Postdoc, 2015-16	Associate Senior Lecturer, Physiology, Lund University (Sweden)
Sajan Lingala	Postdoc, 2014-17	Assistant Professor, Biomedical Engineering, University of Iowa
Hung Phi Do	PhD, 2010-2017 Postdoc, 2017	MR Clinical Collaborations Manager Canon Medical Systems

Name	Degrees, Years	Current Position
Yi Guo	PhD, 2012-2017	Software Engineer, SnapChat
Terrence Jao	PhD, 2011-2017	Radiology Resident, Stanford University
Xin Miao	PhD, 2013-2018	MR Research Scientist, Siemens Healthineers & Dana Farber Cancer Institute
Weiyi Chen	PhD, 2013-2019	Display Algorithm Engineer, Apple
Vanessa Landes	PhD, 2012-2019	Clinical Scientist, PET/CT/MR, GE Healthcare & Massachusetts General Hospital
Ahsan Javed	PhD, 2012-2019	Postdoctoral Fellow, Intramural Division, NIH/NHLBI
Yongwan Lim	PhD, 2015-2020 Postdoc 2020-2021	Display Engineer, Apple
Yannick Bliesener	PhD, 2015-2020	Scientist, Samsung
Sreedevi Gutta	Postdoc, 2018-2020	Assistant Professor, California State University San Marcos
Namgyun Lee	PhD, 2018-	
Zhibo Zhu	PhD, 2018-	
Ziwei Zhao	PhD, 2019-	
Kübra Keskin	PhD, 2019-	
Bochao Li	PhD, 2019-	
Ye Tian	Postdoc, 2019-	
Prakash Kumar	PhD, 2020-	
Jose Felix	PhD, 2020-	
Eçrin Yagiz	PhD, 2020-	
Bilal Tasdelen	PhD, 2021-	
Bahadir Alp Barlas	PhD, 2022-	
Nejat Can	PhD, 2022-	
Sarina Kapai	PhD, 2022-	

INDIRECT TRAINEES (not the primary advisor)

Name	Degrees, Years	Current Position
Erik Bresch	PhD, 2005-2010	Scientist, Philips Research Laboratories (Netherlands)
Taehyun Rhee	PhD, 2005-2010	Associate Professor, Victoria University of Wellington (New Zealand)
Eamon Doyle	PhD, 2011-2017	Assistant Professor, USC Keck School of Medicine, Children's Hospital Los Angeles
Adam Bush	PhD, 2011-2017	Assistant Professor, University of Texas, Austin

TRAINEE AWARDS

Ye Tian, American Heart Association Postdoctoral Fellowship	2022-
Ziyue Wu, W.S. Moore Young Investigator Award, ISMRM	2016
Sajan Lingala, USC Provost's Postdoctoral Scholar Research Grant	2015
Ziyue Wu, Grodins Graduate Award (#1 PhD student in the BME department)	2015

Ziyue Wu, Coulter Award, BME Department	2015
Yoon-chul Kim, American Heart Association Postdoctoral Fellowship	2013-15
Christopher Sandino, USC McNair Scholar	2013
Travis Smith, Ming Hsieh Institute Best PhD Dissertation Award	2013
Samir Sharma, Best Research “Fast Pitch”, USC EE Research Festival	2012
Travis Smith, American Heart Association Predoctoral Fellowship	2011-12
Samir Sharma, Ming Hsieh Institute Ph.D. Scholar (one of five)	2011-12
Taehoon Shin, American Heart Association Postdoctoral Fellowship	2009-11
Hsu-Lei Lee, USC Women in Science and Engineering, Merit Award	2008
Taehoon Shin, Best Student Paper Honorable Mention, USC EE Department	2008
Joao Carvalho, Best Student Paper Award, USC EE Dept.	2007
Joao Carvalho, USC Dissertation Completion Fellowship	2007-08
Jon-Fredrik Nielsen, American Heart Association Postdoctoral Fellowship	2006-08
Numerous conference travel grants (not practical to list individually)	2005-
Numerous conference paper awards (listed above under Publications)	2005-

DISSERTATION COMMITTEES

- **Ph.D. External Examiner / Opponent:** Petter Dyverfeldt (2010, Linköping University, Sweden, Advisor: Tino Ebbers), Jérôme Yerly (2013, University of Calgary, Canada, Advisor: Richard Frayne), Ronal Coronado (2021 dissertation, 2022 defense, Pontificia Universidad Católica de Chile, Advisor: Pablo Irarrazaval)
- **Ph.D. Thesis Defense and Qualifying Exam:** Dimitrios Pantazis (EE), Manjiang Zhang (Physics), Hsiao-Fen Chou (Civil), Ismail Sebe (EE), Fariba Ariei (EE), Bei Wang (EE), Yuriy Brun (CS), Nilesh Ghugre (BME), Taehyun Rhee (CS), Anand Joshi (EE), Ramakrishnan Iyer (BME), Matthew Behrend (EE), Alec Wong (BME), Kenneth Hayworth (Neuroscience), Jonghye Woo (EE), Sangeetha Somayajula (EE), Hua Hui (EE), Erik Bresch (EE), Jay Mung (BME), Vikram Ramanarayanan (EE), Samantha Cunningham (BME), Wentao Zhu (EE), Seth Nfonoyim-Hara (BME), Chitresh Bhushan (EE), Brian Hsu (Linguistics), Yi Lao (BME), Eamon Doyle (BME), Adam Bush (BME), Xin Miao (BME), Yuxiao Yang (EE), Samantha Ma (BME), Tanner Sorensen (Linguistics).
- **Ph.D. Qualifying Exam Only:** Changsung Kim (EE), Jingliang Peng (EE), Dahua Xie (EE), Esen Kucukaltun-Yildirim (EE), Belma Dogdas (EE), Abhijit Chaudhari (EE), Yousef Al-Rjoub (Civil), Pankaj Mishra (EE), Chiao Wang (EE), Jong Dae Oh (EE), Sanghee Cho (EE), Sundeep Patterm (EE), Joyita Dutta (EE), Juan Soto (EE), Dongwoo Kang (EE), Matthew Borzage (BME), Wentao Zhu (EE), Yanguang Lin (EE), Adam Bush (BME), Joseph Crew (BME), Eamon Doyle (BME), Yi Lao (BME), Yang Li (BME), Chi Tat Chiu (BME), Yu Ryan Chen (BME), Zhaojun Yang (EE), Niharika Gajawelli (BME), Azarang Golmohammadi (EE), Divya Varadarajan (EE), Daeun Kim (EE), Mingqi Chong (EE), Yunhua Ji (BME), Tae Hyung Kim (EE), Han-Lin Hsieh (EE), Chau Vu (BME), Omid Ghasem-Sani (EE), Krishna Somandepalli (EE), Wen Shi (BME), Christian Song (ECE), Zalan Fabian (ECE), Mozhdeh Rouhsedaghat (ECE), Parima Ahmadipour-Anari (ECE).
- **M.S. Thesis Committees:** Abhijit Kher (BME), Amrita Rajagopalan (BME), Naren Nallapareddy (EE), Grant Haskins (BME).

DIRECTED RESEARCH

- **Medical Students:** Terrence Jao (USC MD/PhD), Gabriel Rudd-Barnard (Drexel MD)

- **Ph.D. Students:** Barry Vanek (EE), Zihong Fan (EE), Firooz Aflatouni (EE), Stephen Tobin (Linguistics), Ximing Wang (BME), Eric Sohn (BME), Adam Bush (BME), Yunhua Ji (BME).
- **M.S. Students:** Kyunghyun Sung (EE), Antonio Ordonez (EE), Aditya Sane (EE), Taekyoon Nam (EE), Vishwanath Kottignahal (EE), Ashish Medewar (EE), Peter Shin (EE), Vikram Ramanarayanan (EE), Niharika Gajawelli (EE), Jack Chang (EE), Ziyue Wu (BME), Yinghua Zhu (EE), Divya Varadarajan (EE), Cecilie Anker (Informatics, TU-Denmark), Josephine Jensen (Informatics, TU-Denmark), Naren Nallapareddy (EE), Siyuan Meng (EE), Shayan Farzad (EE), Jieshen Chen (EE), Xitong Wang (ECE), Yuheng Huang (ECE), Jeffery Wong (ECE).
- **Undergraduates:** Eamon Doyle (Olin College), Sameer Chopra (UC-Riverside), David Chartash (U Western Ontario), Tim Brochier (USC), Melanie Houselog (USC), Samantha Kaplan (USC), Sheldon Cheng (USC), Christopher Sandino (USC), Sam Thornton (USC), Andriana Ayiotis (USC), Natasha Goran (University of Leeds, UK), Octavio Marin Pardo (UNAM, Mexico), Jieshen Chen (USC), Andrew Yock (USC), Samarth Kamle (USC), Kameran Mody (BME), Antonina Mintcheva (BME), Ana Sanson Leon (ECE), Pooja Kowshik (ECE).
- **High School Students:** Arjun Viswanathan (Minnetonka High School, Minnesota), Nikhil Rajulapati (Trinity Preparatory School, Florida).

CLASSROOM TEACHING @ USC (student evals: *1.00 is poor, 5.00 is excellent*)

- Magnetic Resonance Imaging and Reconstruction (EE 591)
 Spring 2004 (4.65), Fall 2004 (4.71), Fall 2005 (5.00), Fall 2007 (4.78),
 Fall 2009 (4.79), Spring 2012 (4.79), Spring 2015, Spring 2019 (4.94),
 Spring 2020 (5.00), Spring 2021 (TBD), Spring 2022 (TBD)
- Advanced Topics in Magnetic Resonance Imaging (EE 691)
 Fall 2008 (4.44), Fall 2012 (4.70).
- Electrical Engineering Research Seminar (EE 598)
 Fall 2012 (4.75), Fall 2013 (4.75)
- Engineering Freshman Academy (ENGR 102)
 Fall 2011 (4.86 & 4.42), Fall 2012 (4.57 & 4.62), Fall 2013 (4.44 & 4.69),
 Fall 2014 (4.42 & 4.25), Fall 2018 (4.71 & 4.84), Fall 2020 (4.83 & 4.91).
- Digital Signal Processing (EE 483)
 Spring 2005 (4.32).
- Introduction to Linear Systems (EE 301)
 Spring 2007 (4.12), Spring 2009 (4.45), Spring 2014 (3.58), Spring 2016 (4.40),
 Spring 2017 (4.40).
- Real-Time DSP Laboratory (EE 434L)
 Spring 2008 (3.86).
- Advanced Real-Time DSP Laboratory (EE 586L)
 Spring 2008 (4.44).
- Introduction to Electrical Engineering Systems (EE 200L)
 Spring 2010 (4.17).
- EPIC Programming (programming language for GE MRI scanners, informal course)
 Oct-Dec 2004, June-Aug 2005, Feb-April 2006, May-June 2008, July-Aug 2010.

CLASSROOM TEACHING @ Stanford (student evals: *5.00 is poor, 1.00 is excellent*)

- Introductory Digital Signal Processing (EE 103)

Summer 2001 (1.43), Summer 2002 (1.25)
Statistical Signal Processing (EE 278)
Summer 2003 (unknown)

OTHER MENTORING

- Society for Cardiovascular Magnetic Resonance Mentoring Program 2011-
- Stanford Alumni Mentoring 2009-15

OTHER OUTREACH

- Prepared a teaching unit on Medical Imaging appropriate for a high-school physics course, for the USC Physics Instant Update, a workshop for LA-area high-school physics teachers run by Prof. Stephan Haas (Physics).
- Introductory Medical Imaging - USC Mission Science program, 2019

SERVICE

WORKSHOP ORGANIZATION

Member of Organizing Committee, ISMRM Workshop on Low Field MRI (Virtual)	2022
Member of Organizing Committee, ISMRM Workshop on Perfusion MRI: From Head to Toe. Los Angeles, CA	2022
Chair , Southern California Hi-Field Lo-Field Workshop, Los Angeles, CA	2022
Annual Meeting Program Committee , ISMRM	2018-21
Co-Chair , Southern California Hi-Field Lo-Field Workshop, Los Angeles, CA	2019
Program Committee, SCMR Scientific Sessions. Barcelona, Spain	2018
Co-Chair , SCMR/ISMRM Co-Provided Workshop Probing Mechanisms of Heart Disease: Micro to Macro to Model. Washington DC	2017
Program Committee, SCMR Scientific Sessions. Washington DC	2017
Member of Organizing Committee, ISMRM Workshop on Flow and Motion Quantification. San Francisco, CA	2016
Program Committee, SCMR Scientific Sessions. Nice, France	2015
Member of Organizing Committee, ISMRM Workshop on Non-Contrast Cardiovascular MRI. Long Beach, CA	2015
Chair , USC Speech MRI Summit. Los Angeles, CA	2014
Member of Organizing Committee, SCMR/ISMRM Joint Workshop on High-Field Cardiovascular Magnetic Resonance. San Francisco, CA	2013
Program Committee, SCMR Scientific Sessions. Orlando, FL	2012
Co-Chair , SCMR Pre-conference Session on High-Field Cardiovascular Imaging and Basic Science. Phoenix, AZ	2010
Member of Organizing Committee, ISMRM Workshop on Data Sampling and Image Reconstruction. Sedona, AZ	2009
Co-Chair , Workshop on High-Field Cardiovascular MR: An Update. Beverly Hills, CA	2008
Member of Organizing Committee, ISMRM Workshop on Non-Cartesian MRI. Sedona, AZ	2007
Member of Organizing Committee, NIH/NIBIB Workshop on High-Field Cardiovascular MR: the promise, the problems, the potential solutions. Washington DC	2006
Chair , ISMRM Workshop on Real-Time MRI: Dynamic Interactive Imaging and its Applications. Santa Monica, CA	2006

GRANT REVIEW

- National Institutes of Health:
 - CTIS June 2022.
 - CTIS June 2021.
 - ZDK1 GRB-9 (O1), June 2021.
 - ZRG1 DTCS-A (81) S, Mail Reviewer, Feb 2015.
 - ZHL1 CCT-Q C1 Wireless Physiologic Telemetry for Interventional MRI, Sept 2013.
 - ZHL1 CCT-H C4 NHLBI SBIR Phase I/II Contract Review, Feb 2013.
 - ZHL1 CCT-N C2 B Wireless Physiologic Telemetry for Interventional MRI, Feb 2012.
 - ZRG SBIBU55 Academic-Industry Partnerships Panel, Jun 2010.
 - ZHL1 K99/R00 Panel, Feb 2010.

- SBIB L30 Special Emphasis Panel, High End Shared Instruments Panel, Nov 2009.
- American Heart Association:
 - Western States Bioengineering Panel, Spring 2010.
 - Radiology, Imaging, and Surgery Panel, Fall 2007, Spring 2008, Fall 2008.
- USC Internal Grants:
 - SC-CTSI, Pilot and Translational Research Grants, 2013.
 - “Cardiovascular, Metabolism, and Neuroscience”, “Systems Biology and Bioengineering”
 - SC-CTSI, Pilot and Translational Research Grants, 2012.
 - “Biology, Bioengineering, Molecular Medicine”, “Diabetes, Obesity, Metabolic Diseases”
 - Clinical Translational Science Initiative, Pilot and Feasibility Grants, 2008.
 - James H. Zumberge Research and Innovation Fund, 2007.
 - Saban Research Institute, Career Development Fellowships, 2006.
- Other:
 - Technology Foundation STW (Netherlands), Innovation Research Incentive Grants, May 2010.
 - Instituto de Telecomunicações (Portugal), Information Technology Grants, April 2014.

JOURNAL REVIEW

- Reviewer:

Magnetic Resonance in Medicine	2000-
Journal of Magnetic Resonance Imaging	2001-
Journal of Cardiovascular Magnetic Resonance	2002-
IEEE Transactions on Medical Imaging	2007-
MAGMA – Magnetic Resonance Materials in Physics, Biology, and Medicine	2008-
Journal of the American College of Cardiology – Cardiovascular Imaging	2008-
Circulation – Cardiovascular Imaging	2009-
Concepts in Magnetic Resonance Part A	2009-
Radiology	2010-
Investigative Radiology	2010-
PLOS ONE	2013-
- Editorial Board Member:

Journal of Cardiovascular Magnetic Resonance	2002-10
Current Cardiology Reviews	2004-11
- Conference Paper/Abstract Reviewer:

ISMRM Scientific Sessions	2005-
SCMR Scientific Sessions	2012
ISMRM Workshops (several years)	2006-
ISBI	2005-09

OTHER PROFESSIONAL SERVICE

- International Society for Magnetic Resonance in Medicine
 - Board of Trustees (elected by the membership) 2019-22
 - Annual Meeting Program Committee 2018-21
 - Equity Diversity and Inclusiveness Task Force 2018-
 - Young Investigator Awards Committee, Member 2012-14
 - Nominating Committee, Member 2016
- Society for Cardiovascular Magnetic Resonance,
 - Science Committee, Member 2006-12
 - Science Committee, Chair 2010-12
 - Election Committee, Member 2011
 - Annual Meeting Program Committee, Member 11,16,17
- External Review Board, National Institutes of Health, “Training in Cardiac Magnetic Resonance Imaging,” T32 Training Grant (T32HL007846) to Stanford University.

UNIVERSITY SERVICE

University of Southern California

USC Keck School of Medicine, MRI Safety Committee	2020-
University Research Committee	2019-20
Center for Excellence in Teaching, Faculty Fellow	2013-16
Center for Excellence in Teaching, Academic Careers Week, Session Staff	2009-13
3TMRI for Cardiovascular and Neuroimaging, Technical Advisory Board	2006-
Keck Hospital and HCC-2 MRI Unit, Technical Advisory Board	2004-
Dornsife Neuroimaging Center, Technical Advisory Board	2004-12

Viterbi School of Engineering

Appointment, Promotion, and Tenure (APT) Committee Member	2011-13
Viterbi Research Awards Committee	2012
Electrical Engineering Department Unification, Committee Member	2009
Interviewer, Presidential and Trustee Scholars	2006-07

Ming Hsieh Department of Electrical and Computer Engineering

Signal and Image Processing Group	
Group Director	2018-24
Screening Exam Coordinator	2003-12
Admissions and Fellowship Nomination Committee	2008-12
Faculty Recruitment Committee - Chair, Systems Design Integration	2018-19
Faculty Recruitment Committee	2014-16
Ming Hsieh Institute	
Advisory Board	2013-
Educational Talks on NSF & NIH Funding	2013,19
MHI Scholars Selection Committee	2011
Annual Faculty Merit Review, Committee Member	2010,
	2012,
	2017
Faculty Candidate Evaluation (several short appointments)	2006-

Dynamic Imaging Science Center
Director

2021-