

Berkin Bilgic

CONTACT	Martinos Center for Biomedical Imaging 13 th Street, Room 2.102 Charlestown, MA 02129	Tel: 617-866-8740 E-mail: bbilgic@mgh.harvard.edu www: martinos.org/~berkin
ACADEMICAL	Assistant Professor in Radiology, Harvard Medical School Instructor in Radiology, Harvard Medical School Assistant in Biomedical Imaging, Massachusetts General Hospital Affiliated Faculty, Health Sciences & Technology, Harvard-MIT	Jun 2019 – May 2016 – Jun 2019 May 2016 – Jun 2018 –
INDUSTRY	Consultant, Subtle Medical Inc.	Nov 2018 –
EDUCATION	MIT , Cambridge, MA — PhD in Electrical Engineering and Computer Science Minor in Optimization Methods — SM in Electrical Engineering and Computer Science Bogazici University , Istanbul, Turkey — BS in Electrical & Electronics Eng. (Ranked 1 st in Faculty of Engineering) — BS in Physics (Ranked 1 st in double major program)	Feb 2010 – Jan 2013 GPA: 5.0 / 5.0 Sep 2008 – Jan 2010 GPA: 5.0 / 5.0 Sep 2004 – Jun 2008 GPA: 3.97 / 4.0
RESEARCH TRAINING	Martinos Center for Biomedical Imaging , Charlestown, MA Advisor: Prof. Kawin Setsompop — Research Fellow MIT , Cambridge, MA Advisor: Prof. Elfar Adalsteinsson — Research Assistant Advisors: Prof. Berthold Horn, Dr. Ichiro Masaki — Research Assistant	Feb 2013 – May 2016 Feb 2010 – Feb 2013 Jan 2009 – Jan 2010
HONORS & AWARDS	ISMRM Research Exchange Grant: (<u>visiting mentee</u>) <u>Gabriel Verala-Mattatali</u> ISMRM Summa Cum Laude Merit Award: (<u>Mentee</u>) <u>Seohee So</u> ISMRM Magna Cum Laude Merit Award: (<u>Mentee</u>) <u>Tae Hyung Kim</u> Winner of ISMRM Quantitative MR Study Group competition: (<u>Mentee</u>) <u>Seohee So</u> ISMRM Magna Cum Laude Merit Award: (<u>Mentee</u>) <u>Xiaozhi Cao</u> ISMRM Summa Cum Laude Merit Award: (<u>Mentee</u>) <u>Zijing Zhang</u> ISMRM Summa Cum Laude Merit Award: (<u>Mentee</u>) <u>Wei-Ching (Tina) Lo</u> ISMRM Magna Cum Laude Merit Award: (<u>Mentee</u>) <u>Xiaozhi Cao</u> ISMRM Summa Cum Laude Merit Award: (<u>Mentee</u>) <u>Daniel Polak</u> Office of China Postdoc Council (OCPC) Fellowship: (<u>Mentee</u>) <u>Zhifeng Chen</u> ISMRM Magna Cum Laude Merit Award: (<u>Mentee</u>) <u>Frank Yu</u> Chinese Scholarship Council (CSC) fellowship: (<u>Mentee</u>) <u>Zijing Zhang</u>	2021 2021 2021 2021 2020 2020 2020 2019 2019 2019 2018 2018

Outstanding Emerging Investigator Award, University of Utah	2017
ISMRM Annual Meeting Outstanding Teacher Award	2017
NVIDIA GPU Grant to support machine learning research	2017
Three ISMRM abstracts awarded Power Pitch presentation (top 3%)	2014, 2017
<u>(Mentee) Daniel Polak</u> awarded ISMRM Power Pitch presentation (top 3%)	2017
ISMRM Magna Cum Laude Merit Award: <u>(Mentee) Daniel Polak</u>	2017
Six ISMRM Summa Cum Laude Merit Awards	2013 – 2016
ISMRM Junior Fellow	2015 –
Magnetic Resonance in Medicine Distinguished Reviewer	2015 – 2019
ISMRM White Matter Study Group student research competition finalist	2015
Honorable Mention for Best Poster, 3 rd Int'l Workshop on MRI Phase Contrast & QSM	2014
Young Investigator Travel Award, 3 rd Int'l Workshop on MRI Phase Contrast & QSM	2014
ISMRM Educational Stipend	2012 – 2014
ISMRM Magna Cum Laude Merit Award	2013
MICCAI Young Scientist Award Finalist	2012
CIMIT – MIT Medical Engineering Fellowship	2011 – 2012
DuPont – MIT Presidential Fellowship	2008 – 2009
Prime Ministry Scholarship, Turkey	2004 – 2008
Ranked 1st in the Faculty of Engineering among Class of 2008, Bogazici University	2008
Ranked 1st in the double major program among Class of 2008, Bogazici University	2008
Ranked 56th out of 1.8 million candidates in the University Entrance Exam, Turkey	2004
Ranked 1st among Class of 2004, Izmir Science High School	2004

GRANTS
ACTIVE +
SUBMITTED

NIH R01EB032378 (PIs: Y. Rathi, B. Bilgic) <u>Harmonizing data acquisition, reconstruction, and analysis for reproducible, cross-vendor, open source MRI</u> Role: co-PI	2022 – 2026 under review
NIH R01EB033207 (PIs: B. Bilgic , J. Stockmann, S. Huang, A. Nummenmaa) <u>Development of a novel encoding array for regionally-specific mapping of in vivo human cortical cytoarchitecture using diffusion MRI</u> Role: co-PI	2022 – 2024 under review
NIH R03EB031175 (PI: B. Bilgic , sub-PI: B. Gagoski) <u>Rapid Fetal HASTE MR Imaging</u> Role: PI	2021 – 2023
NIH R01 EB028797 (PIs: B. Bilgic , J. Stockmann) <u>Advanced Neuroimaging through Novel Encoding Strategies and Hardware Design</u> Role: co-PI	2020 – 2023
NIH U01EB025162 (PIs: D.A. Feinberg, C. Liu, P. Mukherjee, K. Setsompop) <u>MRI Corticography: developing next generation microscale human cortex MRI scanner</u> Role: Investigator	2017 – 2022
NIH U01EB026996 (PIs: B.R. Rosen, P.J. Basser, S.Y. Huang, L.L. Wald, J.E. Kirsch) <u>Connectome 2.0: developing the next generation human MRI scanner for bridging studies of the micro-, meso- and macro-connectome</u> Role: Investigator	2018 – 2023
NIH P41 EB030006 (PI: K. Setsompop) <u>Acquisition technology for in vivo functional and structural MR imaging at the mesoscopic scale.</u> Role: co-lead with Dr J.R. Polimeni at MGH	2020 – 2025

**GRANTS
COMPLETED**

MIT Int'l Science & Technology Initiatives (MISTI) Grant (PI: E. Adalsteinsson) <u>Diffusion Magnetic Resonance Imaging</u> Role: Investigator	2019 – 2021
MGH ECOR Formulaic Bridge Funding (PIs: B. Bilgic , J. Stockmann) <u>Advanced Neuroimaging through Novel Encoding Strategies and Hardware Design</u> Role: PI	2020
NIH R01EB020613 (PI: K. Setsompop) <u>Rapid MRI acquisition for pediatric low-grade gliomas</u> Role: Investigator	2016 – 2020
NIH R01EB017337 (PIs: P.E. Grant, E. Adalsteinsson, L.L. Wald) <u>Advanced fetal imaging</u> Role: Investigator	2014 – 2020
NIH P41EB015896 (PI: B.R. Rosen) <u>Center for functional imaging technologies</u> Role: Investigator	2014 – 2020
NIH R01MH116173 (PIs: K. Setsompop, Y. Rathi) <i>Dr Setsompop changed institution</i> <u>Next generation in-vivo diffusion imaging at submillimeter resolution</u> Role: Investigator	2018 – 2023

**JOURNALS
& BOOK
CHAPTERS**

- J1. Arefeen Y, Beker O, Yu H, Adalsteinsson E, **Bilgic B**. Scan Specific Artifact Reduction in K-space (SPARK) Neural Networks Synergize with Physics-based Reconstruction to Accelerate MRI
arXiv. 2021 preprint DOI: arXiv:2104.01188
- J2. Cho J, Liao C, Tian Q, Zhang Z, Xu J, Lo W-C, Poser BA, Stenger VA, Stockmann J, Setsompop K, **Bilgic B**. Highly Accelerated EPI with Wave Encoding and Multi-shot Simultaneous Multi-Slice Imaging
arXiv. 2021 preprint DOI: arXiv:2106.01918
- J3. Li Z, Tian Q, Ngamsombat C, Cartmell S, Conklin J, Filho ALMG, Lo W-C, Wang G, Ying K, Setsompop K, Fan Q, **Bilgic B**, Cauley S, Huang SY. High-fidelity fast volumetric brain MRI using a hybrid denoising generative adversarial network (HDnGAN)
bioRxiv. 2021 preprint DOI: 10.1101/2021.01.07.425779
- J4. Scholz A, Etzel R, May MW, Mahmutovic M, Tian Q, Ramos-Llordén G, **Bilgic B**, Witzel T, Stockmann JP, Mekkaoui C, Wald LL, Huang SY, Yendiki A, Keil B. A 48-Channel Receive Array Coil for Mesoscopic Diffusion-Weighted MRI of Human ex vivo Brain Imaging on the 3T Connectome Scanner
NeuroImage. 2021 Jun, DOI: 10.1016/j.neuroimage.2021.118256
- J5. Tian Q, Li Z, Fan Q, Ngamsombat C, Hu Y, Liao C, Wang F, Setsompop K, Polimeni JR, **Bilgic B**, Huang SY. SRDTI: Deep learning-based super-resolution for diffusion tensor MRI
arXiv. 2021 preprint DOI: arXiv:2102.09069
- J6. Lin A, Song AH, **Bilgic B**, Ba D. Covariance-Free Sparse Bayesian Learning

- J7. Iyer S, Polak D, Liao C, Tamir JI, Cauley S, Gagoski B, Lo W-C, **Bilgic B**, Setsompop K. Wave-encoding and Shuffling Enables Rapid Time Resolved Structural Imaging
arXiv. 2021 preprint DOI: arXiv:2103.15881
- J8. Jones R, Maffei C, Augustinack J, Fischl B, Wang H, **Bilgic B**, Yendiki A. Post mortem validation of DSI compressed sensing with optical imaging.
bioRxiv. 2021 preprint DOI: 10.1101/2021.02.11.430672
- J9. **Bilgic B**, Chatnuntawech I, Polak D. Quantitative Susceptibility Mapping Reconstruction.
book chapter in MRI Reconstruction: Theory, Methods and Applications; editors M Doneva, M Akcakaya, C Prieto; Elsevier 2021
- J10. Yu FF, Huang SY, Witzel T, Kumar A, Liao C, Duval T, Cohen-Adad J, **Bilgic B**. Rapid Simultaneous Acquisition of Multi-Orientation Quantitative Susceptibility Mapping and Macromolecular Tissue Volume.
bioRxiv. 2021 preprint DOI: 10.1101/2021.06.08.447552
- J11. Manhard MK, Stockmann J, Liao C, Park D, Han S, Fair M, van den Boomen M, Polimeni JR, **Bilgic B**, Setsompop K. A multi-inversion multi-echo spin and gradient echo EPI sequence with low image distortion for rapid quantitative parameter mapping and synthetic image contrasts.
Magn Reson Med. 2021 Mar, DOI: 10.1002/mrm.28761
- J12. Tian Q, Zaretskaya N, Fan Q, Ngamsombat C, **Bilgic B**, Polimeni JR, Huang SY. Improved cortical surface reconstruction using sub-millimeter resolution MPRAGE by image denoising.
NeuroImage. 2021 Jun, DOI: 10.1016/j.neuroimage.2021.117946
- J13. Marques, JP, Meineke, J, Milovic, C, **Bilgic B**, Chan, KS, Hedouin, R, van der Zwaag, W, Langkammer, C, Schweser, F. QSM Reconstruction Challenge 2.0: a realistic in silico head phantom for MRI data simulation and evaluation of susceptibility mapping procedures.
Magn Reson Med. 2021 Feb; DOI: 10.1002/mrm.28716
- J14. QSM Challenge 2.0 Organization Committee, **Bilgic B**, Langkammer, C, Marques, JP, Meineke, J, Milovic, C, Schweser, F. QSM Reconstruction Challenge 2.0: Design and Report of Results.
bioRxiv. 2020 preprint DOI: 10.1101/2020.11.25.397695
- J15. Tian Q, **Bilgic B**, Fan Q, Liao C, Ngamsombat C, Hu Y, Witzel T, Setsompop K, Polimeni JR, Huang SY. DeepDTI: High-fidelity six-direction diffusion tensor imaging using deep learning.
Neuroimage. 2020 Oct 1;219:117017. doi: 10.1016/j.neuroimage.2020.117017.
- J16. Milovic C, Prieto C, **Bilgic B**, Uribe S, Acosta-Cabronero J, Irazabal P, Tejos C. Comparison of parameter optimization methods for quantitative susceptibility mapping.
Magn Reson Med. 2021 Jan;85(1):480-494. doi: 10.1002/mrm.28435.
- J17. Tian Q, **Bilgic B**, Fan Q, Ngamsombat C, Zaretskaya N, Fultz NE, Ohringer NA, Chaudhari AS, Hu Y, Witzel T, Setsompop K, Polimeni JR, Huang SY. Improving in vivo human cerebral cortical surface reconstruction using data-driven super-resolution.
Cereb Cortex. 2021 Jan 1;31(1):463-482. doi: 10.1093/cercor/bhaa237.
- J18. Polak D, Chatnuntawech I, Yoon J, Iyer SS, Milovic C, Lee J, Bachert P, Adalsteinsson E,

- Setsompop K, **Bilgic B**.
Nonlinear dipole inversion (NDI) enables robust quantitative susceptibility mapping (QSM). *NMR Biomed*. 2020 Dec;33(12):e4271. doi: 10.1002/nbm.4271.
- J19. Cao X, Liao C, Zhang Z, Iyer SS, Wang K, He H, Liu H, Setsompop K, Zhong J, **Bilgic B**.
Efficient T2 mapping with blip-up/down EPI and gSlider-SMS (T2-BUDA-gSlider).
Magn Reson Med. 2021 May; DOI: 10.1002/mrm.28872
- J20. Polak D, Cauley S, **Bilgic B**, Gong E, Bachert P, Adalsteinsson E, Setsompop K.
Joint multi-contrast variational network reconstruction (jVN) with application to rapid 2D and 3D imaging.
Magn Reson Med. 2020 Sep;84(3):1456-1469. doi:10.1002/mrm.28219
- J21. Dong Z, Wang F, Reese TG, **Bilgic B**, Setsompop K.
Echo planar time-resolved
imaging with subspace reconstruction and optimized spatiotemporal encoding.
Magn Reson Med. 2020 Nov;84(5):2442-2455. doi: 10.1002/mrm.28295.
- J22. Milovic C, Tejos C, Acosta-Cabronero J, Özbay PS, Schweser F, Marques JP, Irarrazaval P, **Bilgic B**, Langkammer C.
The 2016 QSM Challenge: Lessons learned and considerations for a future challenge design.
Magn Reson Med. 2020 Sep;84(3):1624-1637. doi: 10.1002/mrm.28185.
- J23. Han S, Liao C, Manhard MK, Park DJ, **Bilgic B**, Fair MJ, Wang F, Blazejewska AI, Grissom WA, Polimeni JR, Setsompop K. Accelerated spin-echo functional MRI using multisection excitation by simultaneous spin-echo interleaving (MESSI) with complex-encoded generalized slice dithered enhanced resolution (cgSlider) simultaneous multislice echo-planar imaging.
Magn Reson Med. 2020 Jul;84(1):206-220. doi: 10.1002/mrm.28108.
- J24. Liao C, Stockmann J, Tian Q, **Bilgic B**, Arango NS, Manhard MK, Huang SY, Grissom WA, Wald LL, Setsompop K.
High-fidelity, high-isotropic-resolution diffusion imaging through gSlider acquisition with B₁₊ and T₁ corrections and integrated ΔB_0 /Rx shim array.
Magn Reson Med. 2020 Jan;83(1):56-67. doi: 10.1002/mrm.27899
- J25. Haskell MW, Cauley SF, **Bilgic B**, Hossbach J, Splitthoff DN, Pfeuffer J, Setsompop K, Wald LL.
Network Accelerated Motion Estimation and Reduction (NAMER): Convolutional neural network guided retrospective motion correction using a separable motion model.
Magn Reson Med. 2019 Oct;82(4):1452-1461. doi:10.1002/mrm.27771
- J26. Manhard MK, **Bilgic B**, Liao C, Han S, Witzel T, Yen YF, Setsompop K.
Accelerated whole-brain perfusion imaging using a simultaneous multislice spin-echo and gradient-echo sequence with joint virtual coil reconstruction.
Magn Reson Med. 2019 Sep;82(3):973-983. doi: 10.1002/mrm.27784.
- J27. **Bilgic B**, Chatnuntawech I, Manhard MK, Tian Q, Liao C, Iyer SS, Cauley SF, Huang SY, Polimeni JR, Wald LL, Setsompop K.
Highly accelerated multishot echo planar imaging through synergistic machine learning and joint reconstruction. *Magn Reson Med*. 2019 Oct;82(4):1343-1358. doi: 10.1002/mrm.27813.
- J28. Chatnuntawech, I, Tantisantisom, K, Khanchaitit, P, Boonkoom, T, **Bilgic B**, Chuangsuwanich, E.
Rice classification using spatio-spectral deep convolutional neural network.
arXiv preprint. 2018 arXiv:1805.11491.
- J29. Liao C, Manhard MK, **Bilgic B**, Tian Q, Fan Q, Han S, Wang F, Park DJ, Witzel T, Zhong J, Wang H, Wald LL, Setsompop K.
Phase-matched virtual coil reconstruction for highly accelerated diffusion echo-planar imaging. *Neuroimage*. 2019 Jul 1;194:291-302. doi: 10.1016/j.neuroimage.2019.04.002.

- J30. Polak D, Cauley S, Huang SY, Longo MG, Conklin J, **Bilgic B**, Ohringer N, Raithel E, Bachert P, Wald LL, Setsompop K.
Highly-accelerated volumetric brain examination using optimized wave-CAIPI encoding.
J Magn Reson Imaging. 2019 Sep;50(3):961-974. doi: 10.1002/jmri.26678.
- J31. Wang F, Dong Z, Reese TG, **Bilgic B**, Katherine Manhard M, Chen J, Polimeni JR, Wald LL, Setsompop K.
Echo planar time-resolved imaging (EPTI).
Magn Reson Med. 2019 Jun;81(6):3599-3615. doi: 10.1002/mrm.27673.
- J32. Kim TH, **Bilgic B**, Polak D, Setsompop K, Haldar JP.
Wave-LORAKS: Combining wave encoding with structured low-rank matrix modeling for more highly accelerated 3D imaging.
Magn Reson Med. 2019 Mar;81(3):1620-1633. doi: 10.1002/mrm.27511.
- J33. Yoon J[†], Gong E[†], Chatnuntawech I, **Bilgic B**, Lee J, Jung W, Ko J, Jung H, Setsompop K, Zaharchuk G, Kim EY, Pauly J, Lee J. [†]*Equal Contribution*
Quantitative susceptibility mapping using deep neural network: QSMnet.
Neuroimage. 2018 Oct 1;179:199-206. doi: 10.1016/j.neuroimage.2018.06.030
- J34. Ngo GC, **Bilgic B**, Gagoski BA, Sutton BP.
Correction of magnetic field inhomogeneity effects for fast quantitative susceptibility mapping.
Magn Reson Med. 2019 Mar;81(3):1645-1658. doi: 10.1002/mrm.27516
- J35. Milovic C, **Bilgic B**, Zhao B, Langkammer C, Tejos C, Acosta-Cabronero J.
Weak-harmonic regularization for quantitative susceptibility mapping.
Magn Reson Med. 2019 Feb;81(2):1399-1411. doi: 10.1002/mrm.27483
- J36. Dong Z, Wang F, Reese TG, Manhard MK, **Bilgic B**, Wald LL, Guo H, Setsompop K.
Tilted-CAIPI for highly accelerated distortion-free EPI with point spread function (PSF) encoding.
Magn Reson Med. 2019 Jan;81(1):377-392. doi: 10.1002/mrm.27413.
- J37. Yu FF, Chiang FL, Stephens N, Huang SY, **Bilgic B**, Tantiwongkosi B, Romero R.
Characterization of normal-appearing white matter in multiple sclerosis using quantitative susceptibility mapping in conjunction with diffusion tensor imaging.
Neuroradiology. 2019 Jan;61(1):71-79. doi: 10.1007/s00234-018-2137-7
- J38. Wang F, **Bilgic B**, Dong Z, Manhard MK, Ohringer N, Zhao B, Haskell M, Cauley SF, Fan Q, Witzel T, Adalsteinsson E, Wald LL, Setsompop K.
Motion-robust sub-millimeter isotropic diffusion imaging through motion corrected generalized slice dithered enhanced resolution (MC-gSlider) acquisition.
Magn Reson Med. 2018 Nov;80(5):1891-1906. doi: 10.1002/mrm.27196.
- J39. Wu Z[†], **Bilgic B**[†], He H, Tong Q, Sun Y, Du Y, Setsompop K, Zhong J. [†]*Equal Contribution*
Wave-CAIPI ViSTa: highly accelerated whole-brain direct myelin water imaging with zero-padding reconstruction.
Magn Reson Med. 2018 Sep;80(3):1061-1073. doi: 10.1002/mrm.27108
- J40. Milovic C, **Bilgic B**, Zhao B, Acosta-Cabronero J, Tejos C.
Fast nonlinear susceptibility inversion with variational regularization.
Magn Reson Med. 2018 Aug;80(2):814-821. doi: 10.1002/mrm.2707

- J41. **Bilgic B**[†], Kim TH[†], Liao C, Manhard MK, Wald LL, Haldar JP, Setsompop K. [†] *Equal Contribution* Improving parallel imaging by jointly reconstructing multi-contrast data. *Magn Reson Med.* 2018 Aug;80(2):619-632. doi: 10.1002/mrm.27076.
- J42. Liao C[†], **Bilgic B**[†], Manhard MK, Zhao B, Cao X, Zhong J, Wald LL, Setsompop K. [†] *Equal Contribution* 3D MR fingerprinting with accelerated stack-of-spirals and hybrid sliding-window and GRAPPA reconstruction. *Neuroimage.* 2017 Nov 15;162:13-22. doi: 10.1016/j.neuroimage.2017.08.030.
- J43. Langkammer C[†], Schweser F[†], Shmueli K[†], Kames C, Li X, Guo L, Milovic C, Kim J, Wei H, Bredies K, Buch S, Guo Y, Liu Z, Meineke J, Rauscher A, Marques JP, **Bilgic B**[†]. [†] *Equal Contribution, Editor's Pick March 2018* Quantitative susceptibility mapping: Report from the 2016 reconstruction challenge. *Magn Reson Med.* 2018 Mar;79(3):1661-1673. doi: 10.1002/mrm.26830
- J44. **Bilgic B**[†], Ye H[†], Wald LL, Setsompop K. [†] *Equal Contribution* Simultaneous Time Interleaved MultiSlice (STIMS) for Rapid Susceptibility Weighted acquisition. *Neuroimage.* 2017 Jul 15;155:577-586. doi: 10.1016/j.neuroimage.2017.04.036
- J45. Soman S, Bregni JA, **Bilgic B**, Nemeč U, Fan A, Liu Z, Barry RL, Du J, Main K, Yesavage J, Adamson MM, Moseley M, Wang Y. Susceptibility-Based Neuroimaging: Standard Methods, Clinical Applications, and Future Directions. *Curr Radiol Rep.* 2017 Mar;5(3):11. doi: 10.1007/s40134-017-0204-1
- J46. Setsompop K, Fan Q, Stockmann J, **Bilgic B**, Huang S, Cauley SF, Nummenmaa A, Wang F, Rathi Y, Witzel T, Wald LL. High-resolution in vivo diffusion imaging of the human brain with generalized slice dithered enhanced resolution: Simultaneous multislice (gSlider-SMS). *Magn Reson Med.* 2018 Jan;79(1):141-151. doi: 10.1002/mrm.26653
- J47. Yarach U, In MH, Chatnuntawech I, **Bilgic B**, Godenschweger F, Mattern H, Sciarra A, Speck O. Model-based iterative reconstruction for single-shot EPI at 7T. *Magn Reson Med.* 2017 Dec;78(6):2250-2264. doi: 10.1002/mrm.26633
- J48. Polak D, Setsompop K, Cauley SF, Gagoski BA, Bhat H, Maier F, Bachert P, Wald LL, **Bilgic B**. Wave-CAIPI for highly accelerated MP-RAGE imaging. *Magn Reson Med.* 2018 Jan;79(1):401-406. doi: 10.1002/mrm.26649
- J49. Cauley SF, Setsompop K, **Bilgic B**, Bhat H, Gagoski B, Wald LL. Autocalibrated wave-CAIPI reconstruction; Joint optimization of k-space trajectory and parallel imaging reconstruction. *Magn Reson Med.* 2017 Sep;78(3):1093-1099. doi: 10.1002/mrm.26499
- J50. Chatnuntawech I[†], Martin A[†], **Bilgic B**, Setsompop K, Adalsteinsson E, Schiavi E. [†] *Equal Contribution* Vectorial total generalized variation for accelerated multi-channel multi-contrast MRI. *Magn Reson Imaging.* 2016 Oct;34(8):1161-70. doi: 10.1016/j.mri.2016.05.014
- J51. Ye H, Cauley SF, Gagoski B, **Bilgic B**, Ma D, Jiang Y, Du YP, Griswold MA, Wald LL, Setsompop K. Simultaneous multislice magnetic resonance fingerprinting (SMS-MRF) with direct-spiral slice-GRAPPA (ds-SG) reconstruction. *Magn Reson Med.* 2017 May;77(5):1966-1974. doi: 10.1002/mrm.26271.

- J52. Chatnuntawech I, McDaniel P, Cauley SF, Gagoski BA, Langkammer C, Martin A, Grant PE, Wald LL, Setsompop K, Adalsteinsson E, **Bilgic B**.
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NMR Biomed. 2017 Apr;30(4):10.1002/nbm.3570. doi: 10.1002/nbm.3570
- J53. McDaniel P, **Bilgic B**, Fan AP, Stout JN, Adalsteinsson E.
Mitigation of partial volume effects in susceptibility-based oxygenation measurements by joint utilization of magnitude and phase (JUMP).
Magn Reson Med. 2017 Apr;77(4):1713-1727. doi: 10.1002/mrm.26227.
- J54. **Bilgic B**, Xie L, Dibb R, Langkammer C, Mutluay A, Ye H, Polimeni JR, Augustinack J, Liu C, Wald LL, Setsompop K.
Rapid multi-orientation quantitative susceptibility mapping.
Neuroimage. 2016 Jan 15;125:1131-1141. doi: 10.1016/j.neuroimage.2015.08.015.
- J55. Langkammer C, Bredies K, Poser BA, Barth M, Reishofer G, Fan AP, **Bilgic B**, Fazekas F, Mainero C, Ropele S.
Fast quantitative susceptibility mapping using 3D EPI and total generalized variation.
Neuroimage. 2015 May 1;111:622-30. doi:10.1016/j.neuroimage.2015.02.041
- J56. Gagoski BA[†], **Bilgic B**[†], Eichner C, Bhat H, Grant PE, Wald LL, Setsompop K. [†] *Equal Contribution*
RARE/turbo spin echo imaging with Simultaneous Multislice Wave-CAIPI.
Magn Reson Med. 2015 Mar;73(3):929-938. doi: 10.1002/mrm.2561
- J57. Chatnuntawech I, Gagoski B, **Bilgic B**, Cauley SF, Setsompop K, Adalsteinsson E.
Accelerated ¹H MRSI using randomly undersampled spiral-based k-space trajectories.
Magn Reson Med. 2015 Jul;74(1):13-24. doi:10.1002/mrm.25394
- J58. **Bilgic B**, Gagoski BA, Cauley SF, Fan AP, Polimeni JR, Grant PE, Wald LL, Setsompop K. Wave-CAIPI for highly accelerated 3D imaging.
Magn Reson Med. 2015 Jun;73(6):2152-62. doi: 10.1002/mrm.25347.
Editor's Pick June 2015
- J59. Cauley SF, Xi Y, **Bilgic B**, Xia J, Adalsteinsson E, Balakrishnan V, Wald LL, Setsompop K.
Fast reconstruction for multichannel compressed sensing using a hierarchically semiseparable solver.
Magn Reson Med. 2015 Mar;73(3):1034-40. doi: 10.1002/mrm.25222
- J60. **Bilgic B**, Fan AP, Polimeni JR, Cauley SF, Bianciardi M, Adalsteinsson E, Wald LL, Setsompop K.
Fast quantitative susceptibility mapping with L1-regularization and automatic parameter selection.
Magn Reson Med. 2014 Nov;72(5):1444-59. doi: 10.1002/mrm.25029
- J61. Fan AP, **Bilgic B**, Gagnon L, Witzel T, Bhat H, Rosen BR, Adalsteinsson E.
Quantitative oxygenation venography from MRI phase.
Magn Reson Med. 2014 Jul;72(1):149-59. doi: 10.1002/mrm.24918
- J62. **Bilgic B**, Chatnuntawech I, Fan AP, Setsompop K, Cauley SF, Wald LL, Adalsteinsson E.
Fast image reconstruction with L2-regularization.
J Magn Reson Imaging. 2014 Jul;40(1):181-91. doi: 10.1002/jmri.24365
- J63. **Bilgic B**, Chatnuntawech I, Setsompop K, Cauley SF, Yendiki A, Wald LL, Adalsteinsson E. Fast dictionary-based reconstruction for diffusion spectrum imaging.
IEEE Trans Med Imaging. 2013 Nov;32(11):2022-33. doi: 10.1109/TMI.2013.2271707.
Featured Article on ieee-tmi.org
- J64. **Bilgic B**, Setsompop K, Cohen-Adad J, Yendiki A, Wald LL, Adalsteinsson E.
Accelerated diffusion spectrum imaging with compressed sensing using adaptive

dictionaries.

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Cover Article December 2012

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ABSTRACTS

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- A1. W-C Lo, B. Clifford, S. Bollmann, T. Feiweier, S. Giri, C. Liao, J. Cho, S. Cauley, K. Setsompop, **B. Bilgic**; 2-minute Comprehensive Brain Exam Using Multi-Shot EPI with Synergistic Model-Based & Deep Learning Reconstruction; ISMRM Workshop on Data Sampling & Image Reconstruction, Sedona, AZ, USA, 2020
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- A80. C.S. Aigner, A. Rund, **B. Bilgic**, B.A. Gagoski, K. Setsompop, K. Kunisch, R. Stollberger; Application of time-optimal simultaneous multi-slice refocusing to TSE/RARE; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.3843
- A81. H. Wang, J.R. Polimeni, **B. Bilgic**, L.L. Wald, K. Setsompop; Analytical G-factor Calculation for Slice-GRAPPA with Odd-even Kernels (SG-OK); International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.5159
- A82. H. Ye, C. Liao, Q. Li, Xiaozhi Cao, B. Zhao, **B. Bilgic**, K. Setsompop, H. He, H. Liu, J. Zhong; Spiral-out and -in Double Echoes (SOIDE) Magnetic Resonance Fingerprinting with Improved T2 Mapping; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.934
- A83. A.S. Kanaan, A. Anwender, A. Schäfer, **B. Bilgic**, T. Schlumm, J. Near, K. Müller-Vahl2, H.E. Möller; QSM meets MRS: The influence of subcortical iron on glutamatergic neurotransmission in a movement disorder population; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.4649
- A84. B. Keil, C. Sappo, **B. Bilgic**, J.R. Polimeni, L. Golestani, R. Etzel, L.L Wald, D.A. Feinberg, K. Setsompop; Sub-Millimeter Cortical Imaging at 7T using a High-Density Motor-Cortex 32-Channel Array Coil; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.1224
- A85. R. Metere, A.S. Kanaan, **B. Bilgic**, T. Schlumm, H.E. Möller; Effects of coil combination algorithms on Quantitative Susceptibility Mapping; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.2433
- A86. S.D. Robinson, K. Eckstein, J.P. Marques, **B. Bilgic**, S. Trattnig, F. Schweser; A comprehensive assessment of methods for combining phase data from array radio-frequency coils at 7 T; International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, Hawaii, 2017, p.3680

2016

- A87. **B. Bilgic**, T. Witzel, H. Bhat, L.L. Wald, K. Setsompop; Joint Reconstruction for Phase-Cycled Balanced SSFP; ESMRMB 33rd Scientific Meeting, NYU Innovation to Implementation in Imaging Workshop
- A88. **B. Bilgic**, J.P. Marques, L.L. Wald, K. Setsompop; Block Coil Compression for Virtual Body Coil without Phase Singularities; Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping

- A89. **B. Bilgic**, S.F. Cauley, H. Ye, C. Langkammer, B.A. Poser, K. Setsompop; Accelerated QSM; Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping
invited abstract
- A90. C. Milovic, **B. Bilgic**, B. Zhao, J. Acosta-Cabronero, C. Tejos; A Fast Algorithm for Nonlinear QSM Reconstruction with Variational Penalties; Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping
- A91. R. Metere, A.S. Kanaan, A. Schäfer, **B. Bilgic**, T. Schlumm, H.E. Möller; Effects of different coil reconstruction algorithms on QSM results; Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping
- A92. J. Kim, S. Bollmann, C. Langkammer, **B. Bilgic**; GPU-accelerated Quantitative Susceptibility Map Reconstruction with Total Generalized Variation Regularization; Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping.
- A93. **B. Bilgic**, H. Ye, L.L. Wald, K. Setsompop; Optimized CS-Wave imaging with tailored sampling and efficient reconstruction; International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.612.
- A94. I. Chatnuntawech, P. McDaniel, S.F. Cauley, B.A. Gagoski, C. Langkammer, A. Martin, P.E. Grant, L.L. Wald, K. Setsompop, E. Adalsteinsson, **B. Bilgic**; TGV-Regularized Single-Step Quantitative Susceptibility Mapping; International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.869.
- A95. **B. Bilgic**, J.R. Polimeni, L.L. Wald, K. Setsompop; Automated tissue phase and QSM estimation from multichannel data; International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.2849.
- A96. P. McDaniel, **B. Bilgic**, A.P. Fan, J. Stout, E. Adalsteinsson; Simultaneous Quantification of Blood Vessel Caliber and Oxygenation via Multi-Voxel Joint Utilization of Magnitude and Phase (MV-JUMP); International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.2844.
- A97. S.F. Cauley, K. Setsompop, **B. Bilgic**, H. Bhat, B. Gagoski, T. Witzel, L.L. Wald; Joint K-space Trajectory and Parallel Imaging Optimization for Auto-calibrated Image Reconstruction; International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.103.
- A98. H. Ye, **B. Bilgic**, S.F. Cauley, B. Gagoski, J. Zhong, Y. Du, L.L. Wald, K. Setsompop; Echo-Shift wave-CAIPI with Simultaneous MultiSlice for rapid susceptibility weighted FLASH imaging; International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, Singapore, 2016, p.3246.

2015

- A99. H. Ye, B. Gagoski, **B. Bilgic**, S.F. Cauley, D. Ma, Y. Du, L.L. Wald, K. Setsompop; Simultaneous Multi-Slice MR Fingerprinting with slice-GRAPPA reconstruction; ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications, Pacific Grove, USA, 2015.
- A100. B. Gagoski[†], **B. Bilgic**[†], C. Eichner, H. Bhat, P.E. Grant, L.L. Wald, K. Setsompop; RARE/Turbo Spin Echo Imaging with Simultaneous MultiSlice Wave-CAIPI; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p. 240.
[†] *Equal Contribution*
- A101. **B. Bilgic**, L. Xie, R. Dibb, C. Langkammer, A. Mutluay, H. Ye, J.R. Polimeni, C. Liu, L.L. Wald, K. Setsompop; Rapid Multi-Orientation Susceptibility Mapping with Wave-CAIPI; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.922.
- A102. K. Setsompop, **B. Bilgic**, A. Nummenmaa, Q. Fan, S.F. Cauley, S. Haung, I. Chatnuntawech, Y. Rathi, T. Witzel, L.L. Wald; 700 μm isotropic diffusion imaging at 3T using SLIDER-SMS with ZOOPPA; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.339.

- A103. K. Jafari-Khouzani, **B. Bilgic**, J. Kalpathy-Cramer, K. Setsompop; Fast non-local means reconstruction for multi-contrast compressed sensing; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.3707.
- A104. P. McDaniel, A.P. Fan, **B. Bilgic**, J. Stout, E. Adalsteinsson; Improved Accuracy in Susceptibility-based OEF Measurements by Mitigation of Partial-Volume Effects via Combined Magnitude and Phase Reconstruction; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.3330.
- A105. S. Cetin, A.P. Fan, **B. Bilgic**, K. Setsompop, G. Unal; Semi-automated visualization and segmentation of cerebral veins from QSM; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.2193.
- A106. I. Chatnuntawech, **B. Bilgic**, A. Martin, K. Setsompop, E. Adalsteinsson; A Fast Reconstruction Algorithm for Accelerated Multi-Contrast MRI; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.3710.
- A107. A. Martin, I. Chatnuntawech, **B. Bilgic**, K. Setsompop, E. Adalsteinsson, E. Schiavi; Total Generalized Variation for Joint Multi-Contrast Parallel Imaging Reconstruction of Undersampled k-space Data; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.80.
- A108. C. Langkammer, **B. Bilgic**, C. Louapre, S. Govindarajan, C. Gianni, K. Setsompop, C. Mainero; Wave-CAIPI and TGV-QSM for fast sub-millimeter QSM at 7 Tesla; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.1709.
- A109. H. Ye, B. Gagoski, **B. Bilgic**, S.F. Cauley, D. Ma, Y. Du, M.A. Griswold, L.L. Wald, K. Setsompop; Simultaneous Multi-Slice Magnetic Resonance Fingerprinting Reconstruction using GROG+GRAPPA (GG); International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.244.
- A110. Y. Jiang, H. Ye, **B. Bilgic**, D. Ma, T. Witzel, S.F. Cauley, E. Adalsteinsson, K. Setsompop, M.A. Griswold, L.L. Wald; Simultaneous T1 and T2 quantitation of the Human Brain at 7 Tesla by MR Fingerprinting; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.3199.
- A111. A.T. Curtis, **B. Bilgic**, K. Setsompop, R.S. Menon, C.K. Anand; Wave-CS: Combining Wave Encoding and Compressed Sensing; International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, Toronto, Canada, 2015, p.82.

2014

- A112. **B. Bilgic**, C. Langkammer, L.L. Wald, K. Setsompop; Single-Step QSM with Fast Reconstruction; 3rd International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping, Durham, USA, 2014.
- A113. **B. Bilgic**, C. Langkammer, A. Mutluay, L.L. Wald, K. Setsompop; Rapid Acquisition for Multi-Orientation QSM; 3rd International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping, Durham, USA, 2014 (Honorable mention for best poster)
- A114. **B. Bilgic**, B. Gagoski, S.F. Cauley, A.P. Fan, J.R. Polimeni, P.E. Grant, L.L. Wald, K. Setsompop; Wave-CAIPI Enables Highly Accelerated 3D MRI; 40th Annual Northeast Bioengineering Conference, Boston, USA, 2014.
- A115. **B. Bilgic**, B. Gagoski, S.F. Cauley, A.P. Fan, J.R. Polimeni, P.E. Grant, L.L. Wald, K. Setsompop; Rapid QSM Acquisition with Wave-CAIPI; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.86.
- A116. **B. Bilgic**, A.P. Fan, C. Eichner, J.R. Polimeni, M. Bianciardi, E. Adalsteinsson, L.L. Wald, K. Setsompop; Fast Reconstruction for Regularized Quantitative Susceptibility Mapping; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.601.
- A117. S.F. Cauley, M. Lustig, **B. Bilgic**, H. Bhat, L.L. Wald, K. Setsompop; Geometric-Decomposition Coil Compression for Real-Time Simultaneous MultiSlice EPI Reconstruction at High MultiBand Factors; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.4404.

- A118. S.F. Cauley, **B. Bilgic**, J.R. Polimeni, H. Bhat, L.L. Wald, and K. Setsompop; A General Hierarchical Mapping Framework (HMF) for Coil Compression; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.4393.
- A119. M. Bianciardi, J.R. Polimeni, K. Setsompop, C. Eichner, **B. Bilgic**, L.L. Wald; Evaluation of dynamic off-resonance correction of respiratory instability in MRI signals for high order spherical harmonic basis set and multivariate modeling of respiratory sources; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.1623.
- A120. I. Chatnuntawech, B. Gagoski, **B. Bilgic**, S.F. Cauley, K. Setsompop, E. Adalsteinsson; Accelerated MRSI Using Randomly Undersampled Spiral-Based k-Space Trajectories; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.3719.
- A121. C. Eichner, **B. Bilgic**, M. Bianciardi, J.R. Polimeni, R. Turner, J. Schulz, D.G. Norris, L.L. Wald, K. Setsompop; Acquisition and Processing Pipeline for Multi-Contrast fMRI Multi-Echo SMS (MESMS) GE-EPI at 7T; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.4219.
- A122. P. Montesinos, J.R. Polimeni, **B. Bilgic**, S.F. Cauley, M. Desco, R. Nezafat, L.L. Wald, E. Adalsteinsson, D.E. Sosnovik; High Resolution Inner Volume Imaging of Human Coronary Atherosclerotic Plaque: Impact and Limits of Parallel Acquisition; International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, Milan, Italy, 2014, p.107.

2013

- A123. **B. Bilgic**, I. Chatnuntawech, K. Setsompop, S.F. Cauley, L.L. Wald, E. Adalsteinsson; Fast Regularized Reconstruction Tools for QSM and DSI; ISMRM Workshop on Data Sampling & Image Reconstruction, Sedona, Arizona USA, 2013.
- A124. S.F. Cauley, Y. Xi, **B. Bilgic**, K. Setsompop, J. Xia, E. Adalsteinsson, V.R. Balakrishnan, L.L. Wald; Scalable and Accurate Variance Estimation (SAVE) for Joint Bayesian Compressed Sensing; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 2603
- A125. S.F. Cauley, O.A. Abuhashem, I. Chatnuntawech, **B. Bilgic**, K. Setsompop, L.L. Wald, E. Adalsteinsson; Low-Rank Basis Smoothing for the Denoising of Diffusion Weighted Images; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 2077
- A126. I. Chatnuntawech, **B. Bilgic**, E. Adalsteinsson; Undersampled Spectroscopic Imaging with Model-based Reconstruction; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 3960.
- A127. I. Chatnuntawech, **B. Bilgic**, B. Gagoski, T. Kok, A.P. Fan, E. Adalsteinsson; Metabolite Map Estimation from Undersampled Spectroscopic Imaging Data using N-Compartment Model; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 3968.
- A128. S.Y. Huang, E. Adalsteinsson, **B. Bilgic**, S. Foong, L.L. Wald; Localized Electrical Property Retrieval – Theories and Numerical Examples; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 4177.
- A129. A.P. Fan, **B. Bilgic**, L. Gagnon, T. Witzel, H. Bhat, B.R. Rosen, E. Adalsteinsson; Quantitative Oxygenation Venogram from MR Phase; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013.
- A130. **B. Bilgic**, I. Chatnuntawech, K. Setsompop, S.F. Cauley, L.L. Wald, E. Adalsteinsson; Fast DSI Reconstruction with Trained Dictionaries; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 58.
- A131. **B. Bilgic**, I. Chatnuntawech, A.P. Fan, E. Adalsteinsson; Regularized QSM in Seconds; International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, Salt Lake City, Utah, USA, 2013, p. 168.

2012

- A132. **B. Bilgic**, E. Adalsteinsson; Joint Bayesian Compressed Sensing with Prior Estimate; International Society for Magnetic Resonance in Medicine 20th Meeting, Melbourne, Australia, 2012, p. 75.
- A133. **B. Bilgic**, B. Gagoski E. Adalsteinsson; Lipid Suppression in CSI with Highly-Undersampled Peripheral k-space and Spatial Priors; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 4455.
- A134. O.A. Abuhashem, **B. Bilgic**, E. Adalsteinsson; GPU Accelerated Quantitative Susceptibility Mapping; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 3442.
- A135. K. Setsompop, **B. Bilgic**, J. Cohen-Adad, D. Tisdall, B. Keil, T. Witzel, Y. Rathi, V.J. Wedeen, E. Adalsteinsson, L.L. Wald; Whole-Brain DSI in 4 Minutes: Sparse Sampling in q-space with Simultaneous Multi-Slice Acquisitions; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 693.
- A136. B. Gagoski, **B. Bilgic**, T. Kok, E. Adalsteinsson; Accelerated Chemical Shift Imaging with Compressed Sensing; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 708.
- A137. T. Kok, **B. Bilgic**, B. Gagoski, E. Adalsteinsson; Lipid Artifact Suppression for Detection of Cortical Metabolites in High-Resolution CTPRESS; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 710.
- A138. A.P. Fan, **B. Bilgic**, K.A. Heberlein, B. R. Rosen, E. Adalsteinsson; Quantification of the Cerebral Metabolic Rate of Oxygen (CMRO₂) across the Cortex using Phase-Based Regional Oxygen Metabolism (PROM) MRI; International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, Melbourne, Australia, 2012, p. 2370.

2011

- A139. **B. Bilgic**, V.K. Goyal, E. Adalsteinsson; Joint Bayesian Compressed Sensing for Multi-contrast Reconstruction; International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, Montreal, Canada, 2011, p. 71.
- A140. **B. Bilgic**, A.P. Fan, E. Adalsteinsson; Quantitative Susceptibility Map Reconstruction with Magnitude Prior; International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, Montreal, Canada, 2011, p. 746.
- A141. T. Kok, **B. Bilgic**, E. Adalsteinsson; Multi Task Bayesian Compressed Sensing in Sparse 2D Spectroscopy; International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, Montreal, Canada, 2011, p. 1448.
- A142. A.P. Fan, **B. Bilgic**, T. Benner, B. R. Rosen, E. Adalsteinsson; Regularized Quantitative Susceptibility Mapping for Phase-based Regional Oxygen Metabolism (PROM) at 7T; International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, Montreal, Canada, 2011, p. 4472.

THESES

- T1. **B. Bilgic**; Reconstruction Algorithms for MRI; Ph.D. thesis, Massachusetts Institute of Technology, Department of EECS, February 2013.
- T2. **B. Bilgic**; Fast Human Detection with Cascaded Ensembles; S.M. thesis, Massachusetts Institute of Technology, Department of EECS, February 2010.

PATENTS

- P1. K. Setsompop, T. Beck, **B. Bilgic**, D. Polak; Method and apparatus for accelerated magnetic resonance imaging; US Patent App. US20180164395A1
- P2. **B. Bilgic**, K. Setsompop, D. Polak, H. Ye, L.L. Wald; Method for simultaneous time-interleaved multislice magnetic resonance imaging; US Patent App. 15/592,851
- P3. K. Setsompop, **B. Bilgic**, L.L. Wald, T. Witzel; Systems and methods for slice dithered enhanced resolution simultaneous multislice magnetic resonance imaging; Application WO2016171759A1

- P4. S.F. Cauley, **B. Bilgic**, K. Setsompop, L.L. Wald; Systems and Methods for Fast Magnetic Resonance Image Reconstruction Using a Hierarchically Semiseparable Solver; US Patent App. 14/707,598
- P5. **B. Bilgic**, K. Setsompop, L.L. Wald; Simultaneous Multi-Slice MRI with Random Gradient Encoding; US Patent App. 15/114,999
- P6. **B. Bilgic**, K. Setsompop; Systems and methods for fast reconstruction for quantitative susceptibility mapping using magnetic resonance imaging; US Patent 9,542,763
- P7. **B. Bilgic**, E. Adalsteinsson; Multi-contrast image reconstruction with joint Bayesian compressed sensing; US Patent 9,336,611

**INVITED
TALKS**

- IT1. Efficient MRI through Improved Encoding & Reconstruction; Oral presentation, King's College London, April 2021
- IT2. Efficient EPI through improved encoding & reconstruction; Oral presentation, Donders Institute, Radboud University, March 2021
- IT3. Efficient MRI through Improved Encoding & Reconstruction; Oral presentation, Department of Bioengineering, UIUC, March 2021
- IT4. Efficient MRI through Improved Encoding & Reconstruction; Oral presentation, UMRAM, Bilkent University, Ankara, Turkey, January 2021
- IT5. Efficient MRI through Improved Encoding & Reconstruction, Oral presentation, Fetal Neonatal Neuroimaging and Developmental Science Center, Boston Children's Hospital, June 2020
- IT6. Efficient MRI through Improved Encoding & Reconstruction, Oral presentation, Radiological Sciences Laboratory, Stanford University, April 2020
- IT7. Highly Efficient MRI Through Multi-shot Echo Planar Imaging; Oral presentation at the SPIE Wavelets and Sparsity XVIII conference, August 2019 (presented by Dr C. Liao).
- IT8. Wave Encoding: The Sequence, the Reconstruction & the Trade-Offs; Educational presentation at ISMRM, May 2019.
- IT9. QSM Tools & Their Biases; Educational presentation at ISMRM, May 2019.
- IT10. Basic Physics of Multiband Imaging; Educational presentation at ISMRM, June 2018.
- IT11. Faster MRI through Optimized Encoding and Reconstruction; Oral presentation at the Memorial Sloan Kettering Cancer Center, May 2018
- IT12. Faster MRI through Optimized Encoding and Reconstruction; Oral presentation at the NYU Center for Advanced Imaging Innovation and Research, February 2018
- IT13. Faster MRI through Optimized Encoding and Reconstruction; Oral presentation at the Weill Cornell Medical College, October 2017
- IT14. Faster MRI through Optimized Encoding and Reconstruction; Oral presentation at the University of Utah, Imaging Elevated Symposium, September 2017
- IT15. QSM Software Demo: 2016 Reconstruction Challenge; Oral presentation at ISMRM Weekend Educational Session, April 2017
- IT16. Susceptibility Weighted Imaging and Quantitative Susceptibility Mapping; Oral presentation at the Neuroradiology Division, Massachusetts General Hospital, November 2016
- IT17. Accelerated QSM; Oral presentation at Fourth International Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping, September 2016.
- IT18. Advanced Parallel Imaging for Beyond Order of Magnitude Accelerated Neuroimaging; Oral presentation at the Barrow Neurological Institute, Keller Center for Imaging Innovation, July 2015.
- IT19. Sparse Methods for Quantitative Susceptibility Mapping; Oral presentation at the SPIE Wavelets and Sparsity XVI conference, August 2015.

- IT20. Wave-CAIPI for Efficient TSE and QSM Acquisitions with Application in Brain Tumors; Oral presentation at ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications, July 2015.
- IT21. Simultaneous Multi-Slice Acquisition for Rapid Neuroimaging; Oral presentation at OHBM Morning Workshop: Neuroimaging Applications of Simultaneous Multi-Slice Imaging, June 2015.
- IT22. Susceptibility Weighted Data Acquisition and Processing; Oral presentation at MICCAI Workshop on Intelligent Imaging, September 2014.
- IT23. Highly Accelerated 3D Imaging; Oral presentation at the 3rd Magnetic Resonance Balkan Outreach Program, Ankara, Turkey, May 2014.
- IT24. Wave-CAIPI: Highly Accelerated 3D Imaging with Reduced g-factor Penalty; Oral presentation at Boston Children's Hospital, February 2014
- IT25. MRI Image Reconstruction Algorithms: Compressed Sensing & Quantitative Susceptibility Mapping; Oral presentation at UMRAM, Bilkent University, Ankara, Turkey, June 2011.

**PROFFERED
TALKS**

- PT1. 3D-BUDA Enables Rapid Distortion-Free QSM Acquisition; Oral presentation at the International Society for Magnetic Resonance in Medicine 28th Scientific Meeting, 2020
- PT2. From 2D thick slices to 3D isotropic volumetric brain MRI - a deep learning approach; Power pitch presentation at the International Society for Magnetic Resonance in Medicine 28th Scientific Meeting, 2020
- PT3. Robust high-quality multi-shot EPI with low-rank prior and machine learning; Oral presentation at the International Society for Magnetic Resonance in Medicine 27th Scientific Meeting, 2019.
- PT4. NEATR-SMS for Highly Accelerated Multi-Shot EPI; Oral presentation at the ISMRM Workshop on Machine Learning, Part II, 2018
- PT5. Accelerated Multi-shot EPI through Machine Learning and Joint Reconstruction; Oral presentation at the ISMRM Workshop on Machine Learning, 2018
- PT6. Calibrationless Parallel Imaging in Multi Echo/Contrast Data; Power poster presentation at the International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, 2017.
- PT7. Joint Reconstruction of Phase-Cycled Balanced SSFP with Constrained Parallel Imaging; Power poster presentation at the International Society for Magnetic Resonance in Medicine 25th Scientific Meeting, 2017.
- PT8. Joint Reconstruction for Phase-Cycled Balanced SSFP; Oral presentation at the NYU Innovation to Implementation in Imaging Workshop, 2016.
- PT9. Optimized CS-Wave Imaging with Tailored Sampling and Efficient Reconstruction; Oral presentation at the International Society for Magnetic Resonance in Medicine 24th Scientific Meeting, 2016.
- PT10. Rapid Multi-Orientation Susceptibility Mapping with Wave-CAIPI; Oral presentation at the International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, 2015.
- PT11. RARE/Turbo Spin Echo Imaging with Simultaneous MultiSlice Wave-CAIPI; Oral presentation at the International Society for Magnetic Resonance in Medicine 23rd Scientific Meeting, 2015.
- PT12. Rapid Acquisition for Multi-Orientation QSM; Oral & poster presentation at the 3rd International Workshop on MRI Phase Contrast & QSM, 2014.
- PT13. Single-Step QSM with Fast Reconstruction; Oral & poster presentation at the 3rd International Workshop on MRI Phase Contrast & QSM, 2014.
- PT14. Rapid QSM Acquisition with Wave-CAIPI; Power poster presentation at the International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, 2014.
- PT15. Fast Reconstruction for Regularized Quantitative Susceptibility Mapping; Oral presentation at the International Society for Magnetic Resonance in Medicine 22nd Scientific Meeting, 2014.
- PT16. Fast DSI Reconstruction with Trained Dictionaries; Oral presentation at the International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, 2013.

- PT17. Regularized QSM in Seconds; Oral presentation at the International Society for Magnetic Resonance in Medicine 21st Scientific Meeting, 2013.
- PT18. Fast Regularized Reconstruction Tools for QSM and DSI; Oral presentation at ISMRM Workshop on Data Sampling & Image Reconstruction, 2013.
- PT19. Accelerated DSI with Compressed Sensing using Adaptive Dictionaries; Oral presentation at 15th International Conference on Medical Image Computing and Computer Assisted Intervention, 2012.
- PT20. Joint Bayesian Compressed Sensing with Prior Estimate; Oral presentation at the International Society for Magnetic Resonance in Medicine 20th Scientific Meeting, 2012.
- PT21. Joint Bayesian Compressed Sensing for Multi-contrast Reconstruction; Oral presentation at the International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, 2011.
- PT22. Quantitative Susceptibility Map Reconstruction with Magnitude Prior; Oral presentation at the International Society for Magnetic Resonance in Medicine 19th Scientific Meeting, 2011.

TEACHING

MIT, Cambridge, MA

- **Course Director** in HST 584: Magnetic Resonance: Analytic, Biochemical, and Imaging Tech. Spring 2021, 2018
 - **Guest Lecturer** in HST 580: Data Acquisition and Image Reconstruction in MRI Fall 2013, 2015
 - **Guest Lecturer** in 6.555: Biomedical Signal and Image Processing Spring 2011, 2012, 2013
 - **Guest Lecturer** in HST 584: Magnetic Resonance: Analytic, Biochemical, and Imaging Tech. Spring 2012, 2016
 - **Teaching Assistant** in 6.882: Computational Photography Spring 2010
- Harvard Medical School, Boston, MA**
- **Lecturer** for Harvard Catalyst MRI course Spring 2017
- Bogazici University, Istanbul, Turkey**
- **Student Assistant** for Information and Entropy Spring 2007

GRADUATE COURSEWORK

Discrete-Time Signal Processing (A+), Advances in Computer Vision (A+), Magnetic Reson.: Analytic, Biochemical, & Imaging Tech. (A) Nonlinear Programming (A)	Quantitative Physiology: Cells & Tissues (A+) Machine Learning (A) Optimization Methods (A+)
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PROFESSIONAL

- **Professional Service:**
- Moderator, the Electro-Magnetic Tissue Properties Study Group Virtual Meeting, 2020
- Moderator for the 28th Scientific Meeting of ISMRM, 2020
- Speaker at the highlight session: Novel Acquisition/Reconstruction & Dealing with Motion/Artifacts, ISMRM, 2020
- Chair for the Electro-Magnetic Tissue Properties Study Group, ISMRM, 2021
- Vice-chair for the Electro-Magnetic Tissue Properties Study Group, ISMRM, 2020
- Secretary for the Electro-Magnetic Tissue Properties Study Group, ISMRM, 2019
- Moderator and Faculty for the 27th Scientific Meeting of ISMRM, Montreal, 2019

- Organizing committee, 5th Intern'l Workshop on MRI Phase Contrast & QSM, Seoul, 2019
- Moderator and Faculty for the 26th Scientific Meeting of ISMRM, Paris, 2018
- Moderator and Faculty for the 25th Scientific Meeting of ISMRM, Hawaii, 2017
- Moderator for the 4th International Workshop on MRI Phase Contrast & QSM, Graz, 2016
- Moderator for the 24th Scientific Meeting of ISMRM, Singapore, 2016
- Organizer of Martinos Center BrainMap Seminar, 2016 – 2017
- Moderator for ISMRM Workshop on Simultaneous Multi-Slice Imaging, Pacific Grove, CA, 2015
- Organizing committee, 3rd Magnetic Resonance Balkan Outreach Program, Ankara, Turkey, 2014
- Moderator for the 3rd Magnetic Resonance Balkan Outreach Program, Ankara, Turkey, 2014
- Review Editor for Frontiers in Neurology and Neuroscience

- **Reviewer Service:**

- NeuroImage
- PLOS ONE
- Magnetic Resonance in Medicine
- Journal of Magnetic Resonance Imaging
- NMR in Biomedicine
- Brain Structure and Function
- Frontiers in Human Neuroscience
- Magnetic Resonance Imaging
- Journal of the American Aging Association
- American Journal of Neuroradiology
- World NeuroSurgery
- IEEE Transactions on Image Processing
- IEEE Transactions on Medical Imaging
- IEEE Signal Processing Letters
- International Conf. on Medical Image Computing & Computer Assist. Intervention, 2012 & 2013
- International Society for Magnetic Resonance in Medicine Scientific Meeting, 2012
- 2nd Int'l Workshop on MRI Phase Contrast & Quantitative Susceptibility Mapping, 2013
- International IEEE Conference on Intelligent Transportation Systems, 2010 & 2011
- International Symposium on Biomedical Imaging: From Nano To Macro, 2015

- **Membership:** full member of ISMRM

VITA Citizenship: Turkish Permanent Resident of the USA Language: Turkish, English